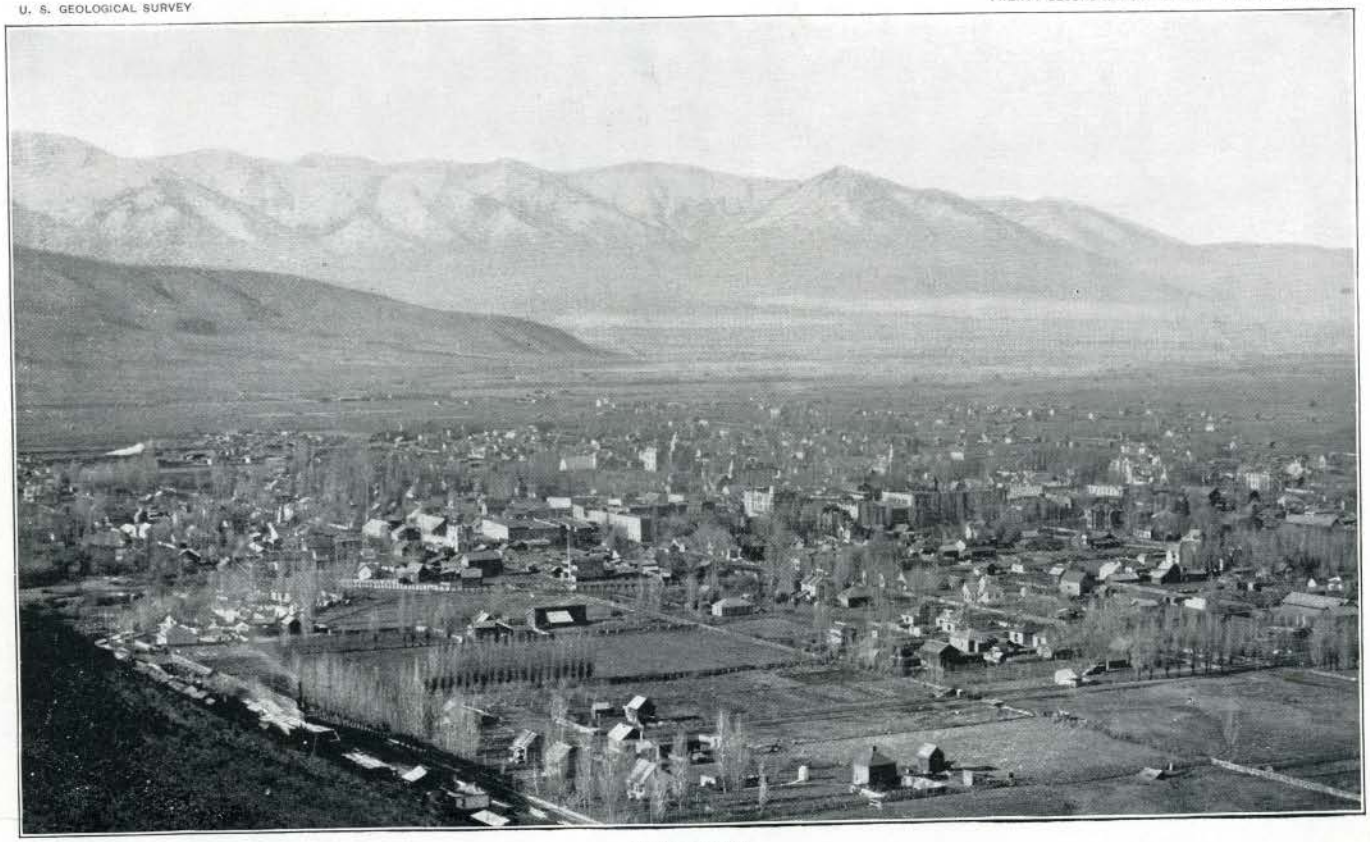

BAKER CITY.

THE GOLD BELT OF THE BLUE MOUNTAINS OF OREGON.

By WALDEMAR LINDGREN.

CHAPTER I.

INTRODUCTION.

GEOGRAPHIC POSITION, FIELD WORK, AND ACKNOWLEDGMENTS.

The State of Oregon contains several gold-bearing areas, widely scattered over different regions. Practically its whole coast is fringed by a belt of auriferous sands which sometimes are rich in fine gold. A second gold field is situated in the southern part of the State, chiefly in Jackson and Josephine counties, and may be considered as an extension of the gold belt of northern California. A third auriferous region is that of the Calapooya Mountains, extending northward toward the Santiam River and centering in the Bohemia mines.[1] Here the gold and silver appear in veins contained in Neocene andesites and basalts. A fourth mineral-bearing area is reported from the Puebla Mountains, in the extreme southeastern part of the State.

But the most important gold field of Oregon is that of the Blue Mountains. It is situated in the northeastern part of the State, and extends for a distance of about 130 miles westward from Snake River. Its production is at least three-fourths of the total output of the State. The present report deals exclusively with this region, which during the last few years has again assumed the prominent position among the gold-bearing areas of the United States which it held about forty years ago, when gold was first discovered there.

The present report is the result of an examination of the Blue Mountains made during a period extending from August to December, 1900, and undertaken by order of the Director of the United States Geological Survey. It will be conceded that four months is a short time in which to examine such an extensive territory and such a wealth of mineral deposits. The report therefore partakes of the character of preliminary or reconnaissance work, and should be judged

[1] The Bohemia mining region of western Oregon, by J. S. Diller: Twentieth Ann. Rept. U. S. Geol. Survey, Part III, 1900, pp. 7–36.

accordingly. It was not possible to visit all the mines and prospects in the gold belt. The most prominent were naturally selected, but it should be emphasized that the failure to mention any particular deposit in this report is by no means a reflection on it or an indication that it lacks value.

A large proportion of the data concerning mines and mining in this report has, of course, been obtained from the men who are in charge of the mining operations in the Blue Mountains, and to all of them my best thanks are due. With two conspicuous exceptions, permission to visit the mines was cheerfully extended and information readily

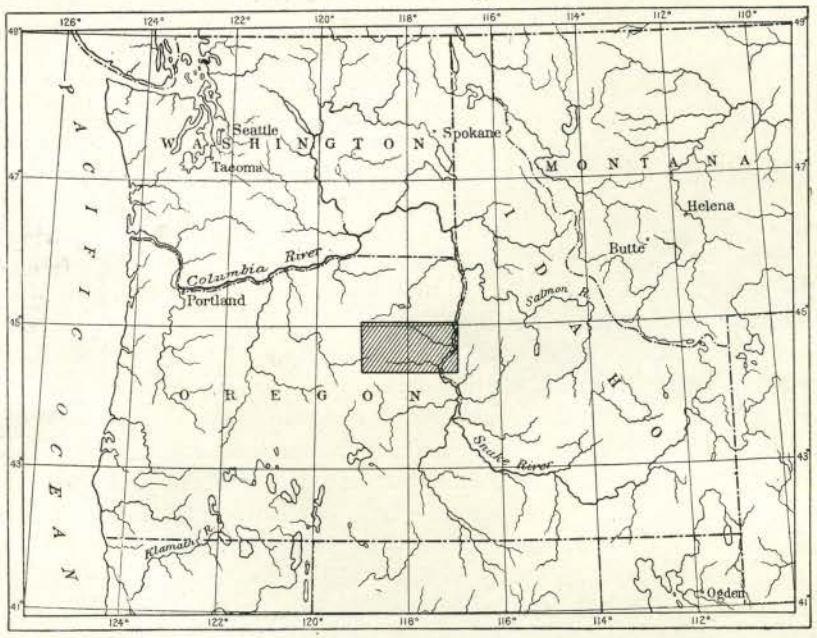

FIG. 79.—Index map of Northwestern States, showing location of special map.

given. Among the many to whom I am under obligations I would specially mention Messrs. E. Melzer, F. R. Mellis, J. Arthur, F. E. Cabell, H. S. McCallum, N. C. Haskell, and J. H. Pomeroy.

THE MAP.

In order to present graphically the distribution of the mineral-bearing areas, the accompanying map (Pl. LXIV) has been prepared. The data contained in it require a few words of explanation. The map is based on the triangulations and the determination of latitude and longitude made by Mr. S. S. Gannett, of the United States Geological Survey. The Sumpter, Baker City, and Weiser (Idaho) atlas sheets of the United States Geological Survey, surveyed by Messrs. L. C. Fletcher, R. H. McKee, and E. T. Perkins, have been reduced to the

scale of the map and used as a basis. The first two sheets include the region extending from latitude 44° 30′ to 45° and from longitude 117° 30′ to 118° 30′. For the country outside of these three quadrangles the base for townships and drainage has been the General Land Office map. The contours drawn at 500 feet vertical interval have been sketched by myself in the field. Excepting in the area of the three atlas sheets mentioned, they are to be regarded as approximate only, but they will serve to give a general idea of the character of the country. In the compilation of the data outside of the special quadrangles the mining map of eastern Oregon, issued by Mr. John Hagel, of Baker City, has been extensively used. Similar maps, issued by the Oregon Railroad and Navigation Company and by Mr. Arthur Philbrick, have also been found of use. As to the mineral veins indicated on the map, their position has been ascertained partly by independent observation, partly from data obtained from the surveyor-general's office, and partly from claim maps of the different regions issued by Mr. John Hagel.

Owing to the hasty nature of the field work, it is with considerable hesitation that it has been decided to indicate the geological areas on the map, but it is believed that the indication of the various rocks will so greatly help the understanding of the problems involved that, although imperfect, it should not be omitted. It must be expressly emphasized, however, that the outlines are only approximate in many cases.

PREVIOUS EXPLORATIONS.

From a geological standpoint, the gold belt of eastern Oregon has practically been an unknown region. The only data available to the student are those contained in Raymond's reports.[1] Though these reports deal more extensively with mining and the production of mines, there are, for instance in the report of 1870, some general notes on the geology of the region.[2] Notes regarding production are to be found in the various reports on the production of gold and silver by the Director of the Mint. The data contained in this report, therefore, to some extent fill a gap in our knowledge of the western United States.

HISTORY AND SETTLEMENTS.

While the gold fields in the southwestern part of Oregon were discovered about 1852, those of the Blue Mountains remained unknown until about ten years later. In the fall of 1861 a prospector named Griffin, with a party of men, discovered what is known as Griffin Gulch, a tributary of Powder River, a few miles southwest of Baker City. At that time the only settlement in the Blue Mountains was

[1] Statistics of Mines and Mining in the States and Territories West of the Rocky Mountains, by R. W. Raymond, Washington, 1870, 1871, 1872, 1873, 1874, and 1875.

[2] Notes in regard to the mining industry may also be found in the report of J. Ross Browne on the mineral resources of the States and Territories west of the Rocky Mountains (Washington, 1868).

that of some cattle raisers in Grande Ronde Valley. Early in the spring of 1862 D. Littlefield and a party of four or five men were prospecting in the same neighborhood and discovered the rich placers of Auburn. In a very short time miners came pouring in from all directions, and the town of Auburn, laid out in June, 1862, grew rapidly, until in less than a year it contained 5,000 inhabitants. In those days the Blue Mountains were difficult of access, supplies having to be brought in from The Dalles, a distance of 300 miles. The mines of Auburn were found to be extremely rich, and from this center exploring parties penetrated the surrounding region in all directions. Prospectors from Auburn discovered the Boise Basin and the Owyhee mines in Idaho. The placers of Sumpter, Canyon, Mormon Basin, and Rye Valley were also discovered by men from the same camp, so that by 1864 practically all of the mining districts of the Blue Mountains were known. The yield per man was at least $8 per day, and any gravels containing less than this were not considered by the early prospectors.

It was soon seen, however, that profitable mining was dependent upon water supply, and in the next few years much capital and labor were devoted to the construction of ditches. In 1863 the Auburn canal, taking its water from Pine Creek and other gulches in the Elkhorn Range, was completed. The Rye Valley ditch was constructed in 1864. The Sparta ditch, carrying the waters of Eagle Creek down to the dry hills of Sparta, a distance of 22 miles, was completed in 1873. About the same time a project was carried out supplying the Malheur diggings with water from the head of Burnt River. This canal, called the Eldorado ditch, was finished in 1873. Its total length is over 100 miles.

By means of these ditches much ground which formerly was inaccessible or too poor to work became available. About 1870 the richest placers were exhausted and a gradual decline in the production began, which may be said to have continued until the present time. From an output of several million dollars in 1870 the product of the placer mines has gradually diminished to something like $200,000 in 1899. During the last years the decline has been very gradual, and it is likely that a production of $200,000 may be kept up for many years to come, as low-grade gravels are beginning to be worked by modern processes of dredging.

While the placer mines declined, another industry, that of quartz mining, gradually developed. We find records of quartz mines being worked in Susanville and at Mormon Basin in 1865 and 1868. One of the first mills was built at Susanville in 1869 and the process used was pan amalgamation. The Virtue mine was discovered soon after 1862, and the Connor Creek mine in 1872, when the first prospecting in the vicinity of Cable Cove was begun and La Belleview and Monumental mines were worked. The ore was shipped on horseback for several

hundred miles. Under such conditions the development of quartz mining was necessarily slow. Its active development dates from 1885, when the country was made accessible by the construction of the transcontinental railroad now traversing it. About 1886 valuable discoveries were made in the Eagle Creek Mountains near Cornucopia. From 1889 a rapid increase in the production was noticed. Quartz mines were worked in various parts of the country and some of them produced heavily. A number of mines in the Cracker Creek district were then, for the first time, considered worthy of exploitation and soon began to add to the annual production. This quiet development continued until 1899, when public attention was drawn to the extremely gratifying results obtained from the quartz mines in the Sumpter, Granite, and Bonanza districts. The West seemed suddenly to become aware that the long-neglected gold fields of the Blue Mountains had far greater value than was commonly attributed to them. In 1899 and 1900 a strong influx of prospectors and miners from all parts of the West took place, and under the stimulus of this new immigration and the introduction of modern methods of mining the country has rapidly developed. Prospectors have penetrated the whole region, searching for gold and silver veins. While this "boom" has probably induced over speculation, and in some cases an exaggerated notion of values, it has served to make the country better known and many valuable mines have been opened as a consequence of it.

The supply point for the largest part of the mining region is Baker City, a flourishing town in the Powder River Valley, having a population estimated at 7,000. The dormant camp of Sumpter was revived during the boom of 1899 and is now a prosperous mining town. Auburn, once flourishing, is now practically deserted. Canyon, in the John Day Valley, still remains a mining town of some importance. Other settlements of note are Union, located 30 miles north of Baker City, from which the camps of Eagle Creek Range largely receive their supplies, and Huntington, 40 miles southeast of Baker City, which is the supply point for the mining camps of Rye Valley, Malheur, Connor Creek, and Mineral. According to the last published census (1890) the population of the three counties, Baker, Union, and Grant, numbered 23,900.

Although the larger part of the area consists either of mountains and forests or dry foothills, there are several agricultural districts of great value. South of the Eagle Creek Mountains are the beautiful valleys of Pine and Eagle, which have a mild climate. Along the lower Powder River a belt of fertile bottom lands extends for a distance of 20 miles. The largest agricultural area is that of Baker Valley, 18 miles long by 10 miles wide. This has a somewhat higher elevation and its climate is a little colder than that of the valleys previously mentioned. West of Baker City extends a vast area of

mountains and canyons, the only agricultural areas of importance being Sumpter and Clifford valleys, which, however, are at elevations over 4,000 feet, and are chiefly used for pastures and hay lands. Very little agricultural land is found on the North and Middle forks of John Day River. On the South Fork of the same river, however, extends the fertile John Day Valley, having a length east to west of about 20 miles and a width up to 10 miles. The John Day Valley is justly celebrated for its excellent fruit and beautiful alfalfa fields. It has an elevation of about 3,200 feet, and is one of the oldest agricultural settlements in eastern Oregon.

Practically all of the agricultural lands of the Blue Mountain must be irrigated if heavy and profitable yield is desired. On certain rich bottom lands it is possible to raise a crop of hay or cereals without irrigation, but this is exceptional. In the Baker Valley are large areas which could be cultivated if water were available, and a project is now on foot to obtain it by storing the flood water of Powder River during the winter and gradually distributing it through the summer.

CLIMATE AN VEGETATION.

Owing to the great diversity in elevation and situation, the climate in the Blue Mountains varies considerably from place to place. Along the Snake River and the contiguous valleys a dry, warm climate prevails, with little rain and snow. At Baker City the average precipitation for a period of ten years was 13 inches, varying from 4.17 to 18.23 inches per annum. The temperature during the last ten years shows variations from $+110^\circ$ in July to a minimum of -17° in the winter. In the mountain region west of Baker City the rain and snow fall increases rapidly with the elevation. Showers during the summer are of frequent occurrence, and the winter snows are from 5 to 15 feet deep.

The vegetation is, of course, largely dependent upon the meteorological conditions. Arid foothills without forest growth, but with a sometimes luxuriant vegetation of grass and sagebrush, extend from Baker City to Snake River. East of Baker City the mountain region is covered with a heavy growth of timber, except the highest, once-glaciated areas, which have been swept bare of soil by the ice streams. The northwestern part of the area described has the greater precipitation and the more abundant vegetation. The southeastern part, sloping toward the great interior valley of Snake River, is dry and destitute of forest growth. Bare foothills extend from Huntington westward over the lower part of Willow Creek and Burnt River. On the whole, it may be said that an elevation of 4,000 feet marks the timber line. Below this elevation there are only scattered groups of trees.

Except for willows and alders along the water courses, the forests consist entirely of coniferous trees. The most important of these is the yellow pine, which attains its best development at an elevation

of from 4,000 to 5,000 feet. Above 5,000 feet the timber is usually of poor quality, consisting largely of black pine and tamarack. The best timber is found on the headwaters of Powder River, Burnt River, and the Middle Fork of John Day, while on the North Fork of John Day the growth appears to be of inferior character.

MINING AND METALLURGY.

In eastern Oregon mining is usually carried on under favorable circumstances. Wood, timber, and water are ordinarily in good supply. The principal drawback is the distance of some camps from railroad lines, and in the highest mining districts the severe climate, as, for instance, at Cable Cove, on the Greenhorn Ridge, and at Cornucopia. No special comment is required in regard to methods of mining. In many cases lack of technical skill has materially increased the difficulties. Men of various professions have been sent out to take charge of mines, instead of experienced mining engineers. At some prospects, and even at some mines, manifestly unsafe shafts and machinery were found. Still, these matters have greatly improved and many of the mines are now models of their kind. The cost of mining may be taken to vary from $1 to $4 per ton in the large mines having considerable bodies of ore 2 to 6 feet wide. According to Mr. J. Arthur, the E. and E. mined their vein from a shaft 200 feet deep, at a cost of $1.85 per ton. The cost of mining at the Columbia mine, hoisting from a shaft 500 feet deep, is supposed to be $3 per ton.

The simplest and most satisfactory ores are those of mainly free milling character, like the Red Boy, Bonanza, and Belle of Baker veins. The cost of milling with plate amalgamation and concentration is rarely over $1 per ton. At the E. and E. mine, according to Mr. Arthur, milling costs $1.05 per ton, giving a total for mining and milling of $2.90 per ton. At the Bonanza the mining and milling are believed to cost from $2.50 to $3 per ton. At the Red Boy the total expenses are said to be a little heavier, possibly reaching $4 per ton. Sometimes it is necessary to subject the tailings to the cyanide process, and this will increase the total cost by at least $1 per ton. When the ore is roasted and subjected to direct cyaniding, as at the North Pole mine, the expense naturally becomes higher. In the mines which produce large amounts of concentrates or sulphide ores, which must be shipped to smelting works, the cost of treatment is, of course, greatly increased, freight and smelting charges amounting to at least $5 each, or a total of $10, besides heavy wagon freight if the mine is situated far from railroad. Anything containing less than $25 per ton is usually not considered shipping ore. Frequently the total charges reach $30 per ton. Last year an attempt was made to run a small smelting plant at Sumpter, but even with the most careful management there are great drawbacks to such an enterprise; the main ones are expensive coke and the absence of large quantities

of suitable copper and lead ores. Smelting of cupriferous pyrite by the pyritic process was for some years successfully carried on at the camp of Mineral, on Snake River.

Regarding the percentage of extraction, exact data are difficult to obtain. It is not probable that any mill at present works closer than 80 to 85 per cent, and many of them fall considerably short of this figure.

The ores from veins in argillite, which in their normal, fresh state consist of hard quartz with finely disseminated pyrite and arsenopyrite, have from the start proved a difficult problem for the metallurgist, and useless plants, erected without due deliberation and preliminary tests, have absorbed a heavy expenditure, which could have been avoided by more skill and care.

It seems that the values are chiefly contained in the fine-grained sulphurets inclosed in the quartz; but besides this there are in the different shoots great variations in the relative percentage of gold and silver, as well as in the state of the gold. The surface ores—that is, down to a depth of 100 to 200 feet below the surface—are partly oxidized. While this frees a part of the gold, another part is still held by the sulphides. The surface ores can therefore usually not be treated by amalgamation and concentration except when, as in the Red Boy and Bonanza, the proportion of free gold is great. The cyanide process has been used for these ores. Even then it is necessary to roast the ore carefully before the cyanide solution is applied, a fact which of course considerably increases the cost. When, as in the case of the base ore of the E. and E., the concentration process was used for surface ore, the extraction only averaged from 50 to 60 per cent, the percentage saved increasing at the rate of 10 per cent for every 50 feet of depth gained.

In cyaniding the similar North Pole ores, on the other hand, the extraction was found to be 85 per cent on ore averaging 0.753 ounce of gold and 0.967 ounce of silver per ton.

In using the plate amalgamation and concentration method on the deep ores the percentage of gold saved on the plates varies from a few per cent up to 60 and above, the highest savings being found in the Bonanza and the Red Boy ores. Successful concentration of these ores depends largely upon the manner in which the crushing is effected. Mr. J. Arthur informs me of the following experiment in this direction: A mill sample was taken for thirty days from the E. and E. ore, when this mine was running, crushing through a 50-mesh screen. This sample assayed $11.50 per ton, and the mill extraction for this month was 51 per cent. The fine slimes from the mill would sometimes run somewhat higher than the ore. Concentrated in gold pan in the laboratory, only 48 per cent was recovered. Ten pounds of this sample were then crushed to one-fourth inch size, and it was found that 28 per cent of the value could be saved by jigging. The tailings from the

jig were then crushed through 10-mesh screen, and 26 per cent again saved by jigging. The tailings from the jig were recrushed through 40-mesh screen and run over vanners. The three crushings resulted in a total saving of 83½ per cent. This would seem to indicate the method to be pursued for disseminated sulphide ores, without free gold. At present the stamp mill usually crushes directly to 50-mesh screens and the pulp is run over vanners. Lately, at the Columbia mine, the tailings have been saved, and it is reported that it has been found practicable to cyanide the tailings, without roasting, with 76 per cent extraction, by a five-day percolation, the cost of the cyaniding being as high as $1.50 per ton.

PRODUCTION OF GOLD AND SILVER IN OREGON.

As by far the largest proportion of the production of the precious metals comes from the Blue Mountains, it may be pertinent to give the figures relating to the production of the State as a whole. During the earlier years statistics were very imcomplete. Gold and silver were not separated, and, indeed, for a number of years the production of Washington was included in that of Oregon. The former did not, however, amount to very much.

The product for the four years from 1862 to 1865, inclusive, is not known, even as an estimate. It would not be surprising if it reached $50,000,000, as the years closely following the discovery marked the high point of production. The product in 1865 is doubtfully estimated at $20,000,000 (J. Ross Browne).

Production of gold and silver in Oregon and Washington from 1866 to 1875, inclusive.

[Compiled from the official reports on the production of the precious metals by J. Ross Browne and W. R. Raymond.]

Year.	Gold and silver.
1866	*a* $8,000,000
1867	3,000,000
1868	4,000,000
1869	3,000,000
1870	3,000,000
1871	2,500,000
1872	2,000,000
1873	*b* 1,376,400
1874	*c* 609,070
1875	*c* 1,246,978
Total	28,732,448

a Estimated by some as high as $20,000,000.
b Estimate of total by Wells, Fargo Express Company; Oregon only.
c Oregon only.

There are no official statistics for 1876, but the production may be roughly estimated at $1,100,000. From 1877 to the present time somewhat more accurate statistics are available, which are given below. It should be stated, however, that the silver production does not appear to be reliable, as in many returns from placer mines the relatively small amount of silver is apparently overlooked. Moreover, as the silver value given is the coining value, or $1.29 per ounce, the returns for the years later than 1884 are misleading, the price of silver having declined to about 60 cents per ounce.

Production of gold and silver in Oregon from 1877 to the present time.

[From the reports of the Director of the Mint on the production of the precious metals.]

Year.	Gold.	Silver (coinage value).	Total.
1877	$1,000,000	$100,000	$1,100,000
1878	1,000,000	100,000	1,100,000
1879	1,150,000	20,000	1,170,000
1880	1,090,000	15,000	1,105,000
1881	1,100,000	50,000	1,150,000
1882	830,000	35,000	865,000
1883	660,000	3,000	663,000
1884	660,000	20,000	680,000
1885	800,000	10,000	810,000
1886	990,000	5,000	995,000
1887	900,000	10,000	910,000
1888	825,000	15,000	840,000
1889	1,200,000	38,787	1,238,787
1890	1,087,000	129,199	[a]1,216,199
1891	1,994,622	296,280	2,290,902
1892	1,491,781	64,080	1,555,861
1893	1,690,951	13,557	1,704,508
1894	2,113,356	10,315	2,123,671
1895	1,837,682	15,192	1,852,874
1896	1,290,964	71,811	1,362,775
1897	1,354,593	109,643	1,464,236
1898	1,216,669	165,916	1,382,585
1899	1,467,379	187,932	1,655,311
Total	27,749,997	1,685,712	29,435,709

[a] Census reports: Gold, $964,000; silver, $23,383; total, $987,383.

The data show a gradual decline in production from the heyday of placer mining in 1862–1866 to less than a million dollars ($663,000) in 1883. From this time quartz mining on a larger scale begins to show its influence, and during the last decade of the century the production

rises to between one and two millions, exceeding the latter amount during two years. The production for the last few years averages $1,400,000, and it is believed the product of 1900 will show a considerable increase over that of 1899.

The total production of gold in Oregon from 1866 to 1899, inclusive, is approximately $59,000,000. Adding to this the production from date of discovery, 1861 to 1865 inclusive, very roughly estimated at $50,000,000, we obtain the whole production of gold and silver in Oregon as $109,000,000. Silver forms but a small fraction of this amount.

PRODUCTION OF GOLD AND SILVER IN THE BLUE MOUNTAINS.

The production of the three counties of the Blue Mountains is very imperfectly known previous to 1880. From that year (except in 1896) detailed statistics have been given in the Mint reports, and in the reports from 1889–1892 individual reports from the separate mines as well. It is much to be regretted that this could not be kept up, the chief difficulty being the objection of the average mine owner to having his production published. In looking over the following compiled tables it becomes apparent that many inaccuracies and discrepancies clearly exist, so that the figures are at best only approximate. Still they serve to give an idea of the relative importance of the counties and the fluctuations in the production. A comparison with the total production of Oregon shows that the largest part of the output is to be credited to the Blue Mountains.

Baker County, containing the most important quartz mines of the central belt, leads in production. The totals, though fluctuating greatly, approximate $1,000,000 per year, and the production is on the whole increasing. Grant County, containing chiefly placer mines, shows a smaller production, between $100,000 and $300,000. The yield was, on the whole, decreasing up to 1898, when a notable increase appeared.

Union County was of less importance as a producer up to 1889, when, owing to the discovery of rich quartz veins at Sanger and Cornucopia, the yield suddenly increased, and in one year (1894) exceeded $1,000,000.

The returns from Malheur County, in which the mining districts of Malheur, Amelia, and Mormon Basin are situated, have, until the last few years, been included in the amounts reported from Baker County.

The grand total of $18,000,000 shows the total production of the mining districts of the Blue Mountains from 1880 to 1899 inclusive.

The Mint reports for the years 1897 and 1898 give also for the State of Oregon the relative amounts of gold and silver contained in placer bullion, mill bullion, and smelting ore, thus furnishing an opportunity to compare the relative importance of placers, free milling, gold-quartz mines, and mines containing base ore. Some very rich ore from gold-

quartz mines may, however, be included in the latter amount. The diminishing importance of the placers is clearly perceived, it being from one-fourth to one-fifth of the total amount.

Source of gold and silver in Oregon for 1897, 1898, and 1899.

[From the reports of the Director of the Mint.]

	Gold.		Silver.		Total.
	Quantity.	Value.	Quantity.	Value.	
1897.	*Fine ounces.*		*Fine ounces.*		
Placer bullion	17,170	$354,931	3,908	$5,053	$359,984
Mill bullion	29,587	611,616	41,302	53,400	665,016
Smelting ores and concentrates	18,772	388,046	39,592	51,189	439,236
1898.					
Placer bullion	14,289	295,381	3,254	4,207	299,588
Mill bullion	24,770	512,040	24,419	31,572	543,613
Smelting ores and concentrates	19,797	409,248	100,653	130,137	539,385
1899.					
Placer bullion	13,887	287,070	2,722	3,519	290,589
Mill bullion	30,954	639,876	13,904	17,977	657,853
Smelting ores and concentrates	26,143	540,432	128,728	166,436	706,868

Production of gold and silver in Baker, Grant, and Union counties, Oreg., from 1880 to 1899.

[Compiled from the reports of the Director of the Mint.]

Year.	Baker.			Grant.			Union.			Total.
	Gold.	Silver.	Total.	Gold.	Silver.	Total.	Gold.	Silver.	Total.	
1880	$226,647	$400	$227,047	$85,400	$543	$85,943	$60,347	.....	$60,347	$373,337
1881	250,000	10,000	260,000	280,000	20,000	300,000	40,000	.....	40,000	600,000
1882	190,000	5,000	195,000	240,000	25,000	265,000	60,000	$800	60,800	520,800
1883	160,000	2,500	162,500	200,000	15,000	215,000	45,000	300	45,300	422,800
1884	160,000	2,500	162,500	200,000	15,000	215,000	45,000	300	45,300	422,800
1885	348,044	.....	348,044	194,600	.....	194,600	7,322	.....	7,322	549,966
1886	396,115	9,005	405,120	198,580	.....	198,580	20,650	.....	20,650	624,350
1887	173,558	5,153	178,711	163,896	11,797	175,693	15,000	.....	15,000	369,404
1888	190,000	5,000	195,000	140,000	10,000	150,000	15,000	.....	15,000	360,000
1889	463,604	7,500	471,104	73,989	9,550	83,539	574,989	1,028	576,017	1,130,660
1890	335,000	127,540	462,540	90,000	129	90,129	400,000	.....	400,000	952,669
1891	873,058	217,833	1,090,891	124,487	4,297	128,784	625,956	3,500	629,456	1,849,131
1892	367,587	3,257	370,844	53,780	40	53,820	753,715	1,900	755,615	1,180,279
1893	728,947	10,454	739,401	198,650	.....	198,650	420,237	3,046	423,283	1,361,334
1894	447,996	2,251	450,247	129,853	.....	129,853	1,059,070	8,100	1,067,170	1,647,270
1895	942,483	7,963	950,446	101,853	.....	101,853	144,800	3,000	147,800	1,200,099
1896[1]	800,000	20,000	820,000	100,000	.....	100,000	300,000	.....	300,000	1,220,000
1897	796,741	50,088	846,829	86,969	4,880	91,841	211,699	36,071	247,770	1,186,440
1898	525,945	42,690	568,635	143,463	32,769	176,232	292,324	67,816	360,140	1,105,007
1899	582,348	55,418	637,766	217,054	86,626	303,680	114,212	19,466	133,678	1,075,124
Total	8,958,073	564,552	9,542,625	3,022,564	235,631	3,258,197	5,205,331	145,327	5,350,648	18,151,470

[1] No product by counties given in mint reports. Figures for this year are only rough estimates.