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PAST PLACER-GOLD PRODUCTION
FROM ALASKA

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PAST PLACER-GOLD PRODUCTION FROM ALASKA

By PHILIP S. SMITH

To the end of 1930 Alaska, according to the records of the Geological Survey, had produced placer gold to the value of \$258,962,000 from mines widely scattered throughout its length and breadth. The distribution of the placers from which the gold was recovered has been stated in more or less detail in the annual summaries published by the Geological Survey on the mineral industry of Alaska and also in its more complete reports on many of the individual mining districts. Although these summaries and reports have furnished information regarding the larger regions, they have not always given specific details regarding the smaller districts. Furthermore, there has been no recent attempt to assemble and publish in one place the scattered statistics regarding the placer-gold production by years and by regions and districts. The purpose of the present report is to set forth in condensed but comprehensive form a summary of the placer-gold production of Alaska so far as it can be determined from the available official records.

At the outset it should be realized that the records on which the accompanying tabulations are based are not all complete or detailed enough to be used for as minute analysis as is desired for the present purpose. This is especially true of the older records, for in some of them the subdivisions used do not correspond with those now adopted and the data are not such as to permit their recalculation to fit the present need. For instance, it is almost certain that some small amounts of gold were recovered by prospectors from nearly every district in the year preceding the first recorded production for that district as given in the following tables. These amounts, however, were small and so far as known have been attributed to one or another of the older nearby districts, so that they appear in the regional totals and affect the district totals only to a minor extent.

Even in the more recent records there are uncertainties that cannot be entirely eliminated. One of the most serious causes of uncertainty is due to the methods employed even currently in collecting this information regarding the placer production for each year. The uncertainties due to this cause have been described as follows:¹

The methods used in collecting and interpreting the information that forms the basis of this report indicate that it is more difficult to obtain accurate facts regarding the production of placer gold than regarding any of the other items.

¹ Smith, P. S., Mineral industry of Alaska in 1930: U.S. Geol. Survey Bull. 836, pp. 25-26, 1931.

This is due to the great number of small producers, who are widely scattered and many of whom are in the most remote parts of the Territory. The gold they produce frequently passes through many hands before it finally reaches a mint or assay office, so that a single lot is difficult to trace. It may appear in the reports of the individual and then lose its identity by being lumped with other gold by the storekeeper who took it in exchange for supplies, and still further consolidated by the bank, perhaps in some distant district, to which it was sent by the merchant, and its course perhaps still further obscured by being shipped to another bank before being turned in to the mint. Every reasonable effort has been made to check the information from different sources and to adjust discrepancies so far as possible. As a result it is believed that the figures given for the total placer production and its distribution by years among the larger regions are in accord with the actual facts. The distribution of this total among the different districts, however, is open to much more serious errors, as gold produced in one district, unless reported to the Geological Survey by the original producer, may be credited to some other district through which it passed in the course of trade.

Another cause of uncertainty that affects current records and becomes even more troublesome in interpreting the older ones arises through the necessity of combining the records of certain districts so as to avoid disclosing information given to the Geological Survey in confidence, because publishing the separate records would afford insight into an individual's production of placer gold. This difficulty is believed to have been largely avoided in the present report, because the records here given have not been brought up beyond 1930 and because the grouping adopted prevents recognition of the production of individuals.

In the interest of arithmetical accuracy the statistics as tabulated have been followed precisely in arriving at the totals stated. This has led to an appearance of greater accuracy than is warranted by the quality of the data used. For instance, the total production from the Nome district is stated as \$67,707,200, though as is evident from the detailed table, an estimated figure that may be in error as much as \$100,000 makes up part of that total. Furthermore, most of the annual figures for that camp are stated only to the nearest whole number of thousands, and as the table embraces the record for 34 years its total as given may be some tens of thousands of dollars different from the total that would have been obtained if the annual figures had been determined to the last integer. However, had the figures in the table been rounded off or recomputed to conform with the mathematical process of indicating significant figures, they would not have coincided with the available district or regional records nor with the records that have been published for Alaska's annual placer-gold production.

The most reliable group of figures in the following tabulation are the totals for each of the calendar years. This comes about through the fact that practically all Alaskan gold entering the channels of

trade passes at different times through various depositories such as banks, smelters, mints, or assay offices, to reach which it undergoes transportation by mail or express or passes through customs. There are therefore many diverse modes of checking the gross output of gold from Alaska in addition to the direct inquiry that is sent by the Geological Survey to each known mine or operator who may have produced some gold.

Next in degree of accuracy are the records regarding the annual production of each of the major Alaska regions. Here too the facilities for checking the reports from one source against those from other sources permit determining the facts with considerable reliability. The sum of the outputs from all the major regions has been verified and made to equal exactly the total production of Alaska for the year or the period stated.

When, however, this regional production is broken down for distribution among the different districts that constitute the region, serious difficulties of reconciling the various available records arise. For instance, in the Kuskokwim region in 1914, 1915, and 1916 all the placer-gold production is recorded as having come from the McKinley district, though it is known from other sources that some gold was also produced during these years in the Goodnews Bay district. At this late date it is obviously impossible to determine positively the reason for the omission of the record of the Goodnews Bay district in those years. It is possible that the gold from Goodnews Bay was incorrectly credited to some region other than the Kuskokwim, but the simplest and most likely explanation is that in the old records the district was not separately listed from the McKinley district and therefore its gold production is included with the gold from that district. In order that possibilities of this sort may be reflected in the tables, appropriate symbols have been interjected to show that the amount in one column is believed to be too low or in another too high. In this way the writer has avoided altering the statements afforded by the official records. Such a device, however, does not meet the need of supplying some sort of quantitative value for the omitted or duplicated records, if a total for the district is to be struck. Therefore with full realization of the probability of introducing errors of considerable magnitude, the writer has stated as a single gross figure his estimate of the amounts that should be added to or subtracted from the figures given in the column to correct these deficiencies. This procedure has been adopted because it was believed to be subject to less inaccuracy than that of inserting separate estimates in the various columns for each of the missing years. In other words, it was believed that whereas an estimated total for a period of several years might be out perhaps 10 percent, an estimate for each of the individual years comprising that period might well be out as much as 100 percent.

Arranged in the order of the magnitude of their total placer-gold production up to the end of 1930 the larger Alaskan regions ranked as follows:

Yukon.....	\$147, 353, 900
Seward Peninsula.....	94, 191, 000
Copper River.....	5, 361, 700
Cook Inlet.....	5, 052, 820
Kuskokwim.....	3, 840, 400
Southeastern Alaska.....	2, 788, 980
Northern Alaska.....	373, 200
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	258, 962, 000

Arranged in the order of the magnitude of their total placer-gold production up to the end of 1930 the Alaskan districts ranked in the following order:

District	Region	Value
Fairbanks.....	Yukon.....	\$79, 630, 600
Nome.....	Seward Peninsula.....	67, 707, 200
Iditarod.....	Yukon.....	20, 321, 400
Council.....	Seward Peninsula.....	11, 809, 600
Circle.....	Yukon.....	7, 132, 300
Hot Springs.....	do.....	6, 814, 000
Fortymile.....	do.....	6, 165, 900
Ruby.....	do.....	5, 798, 800
Fairhaven.....	Seward Peninsula.....	5, 727, 100
Tolovana.....	Yukon.....	5, 233, 600
Solomon-Bluff.....	Seward Peninsula.....	5, 196, 900
Koyukuk.....	Yukon.....	4, 971, 500
Innoko.....	do.....	4, 486, 600
McKinley.....	Kuskokwim.....	2, 702, 400
Chistochina.....	Copper River.....	2, 696, 800
Nizina.....	do.....	2, 606, 600
Yentna.....	Cook Inlet-Susitna.....	2, 443, 500
Kougarok.....	Seward Peninsula.....	2, 223, 200
Kenai.....	Cook Inlet.....	1, 990, 200
Rampart.....	Yukon.....	1, 422, 900
Juneau.....	Southeastern Alaska.....	1, 368, 880
Richardson.....	Yukon.....	1, 329, 900
Marshall.....	do.....	1, 247, 300
Porcupine.....	Southeastern Alaska.....	1, 100, 300
Koyuk.....	Seward Peninsula.....	970, 500
Chisana.....	Yukon.....	786, 200
Tuluksak-Aniak.....	Kuskokwim.....	680, 000
Eagle.....	Yukon.....	593, 300
Port Clarence.....	Seward Peninsula.....	556, 500
Valdez Creek.....	Cook Inlet-Susitna.....	475, 700
Kantishna.....	Yukon.....	475, 100
Bonnifield.....	do.....	434, 500
Chandalar.....	Northern Alaska.....	373, 200
Yakataga.....	Yukon.....	356, 400
Goodnews Bay.....	Southeastern Alaska.....	319, 800
Georgetown.....	Kuskokwim.....	243, 200
Indian River.....	do.....	214, 800
Southwestern Alaska.....	Yukon.....	129, 500
Nelchina.....	Cook Inlet-Susitna.....	97, 320
Willow Creek.....	Copper River.....	58, 300
Gold Hill.....	Cook Inlet-Sustina.....	46, 100
	Yukon.....	24, 100
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		258, 962, 000

In the accompanying table are set forth the complete statistics of the production of the various districts so far as they can now be determined from the official records. In addition to the specific facts regarding the value of the placer-gold production of each area for each year, as well as the total value by years, districts, and regions, the table serves as a more or less graphic representation of the history of the development of the placer industry throughout the Territory. Thus at a glance may be visualized the relative time when each of the

different districts began to furnish some significant amounts of gold and the continuity of production since that time. In fact, the complete span of productive life of some of the camps may be recognized by the shortness of the column of figures. The record of the Indian River district of the Yukon region is a good example of this condition, for the camp first became notably productive in 1911 and had ceased to yield any significant amounts of placer gold by 1921. The reader should be cautioned, however, against interpreting a marked falling off in the production of a district as indicating that the life of the district is drawing to a close. The history of all placer camps shows that the years immediately following the discovery of the camp mark a time of high production, which comes mainly from rich deposits that are easily and cheaply mined. As these deposits are relatively soon exhausted, the boom days are succeeded before long by a decline in the production that marks a period before the introduction of extensive mechanical devices for the mining of the lower-grade deposits and, in some camps, a period when owing to the remoteness of the camp costs are high. Some camps never pass to the stage of being developed by extensive equipment, and consequently their decline is unchecked. In others the introduction of extensive mechanical equipment or additional discoveries follow so quickly on the bonanza period that the inevitable decline is not strongly marked. A graph of the production of placer gold in the Fairbanks district up to 1927 is fairly representative of the growth and decline of a placer camp. In that district there was the sudden jump in production to a peak soon after the discovery of the camp, after which there was a decline, followed by an even larger production a few years later. Then followed decreasing production for a number of years during which practically all parts of this area were more or less thoroughly searched. In that search many deposits which could not then be worked at a profit were disclosed. With the completion of the Alaska Railroad, however, and as an outcome of the various events that made the region more accessible and lowered mining costs, some of these formerly unprofitable deposits became attractive, and their development was undertaken. The result has been that for the last 4 years the production from that camp has taken a decided upward turn, and there is no reason to predict that for some time to come this trend will be interrupted by a serious decline.

The methods used in winning the placer gold reported in these tables range widely in their efficiency and cost. The records as to the amounts of gold produced by each of the different mining methods are not available. In fact, it is difficult to make any simple classification of the varied methods that have been used, because there is an almost uninterrupted sequence of elaboration from the individual prospector using only a shovel and gold pan to the complex dredge with most

complete and up-to-date equipment. However, it appears that by far the greatest amount of placer gold has been recovered by methods involving only manual labor or simple mechanical equipment such as can be operated by a small boiler for power or water under a moderate head such as can be supplied by relatively short ditches. Of the more elaborate mechanical methods of mining placer ground, dredging has yielded the greatest amount of gold. This method was first tried in Alaska in 1903 and, having proved successful, has been used more and more extensively until in 1930 nearly 81 percent of the placer gold recovered was mined by dredges. In the period between 1903 and 1930 nearly 18½ percent of all the placer gold recovered was produced by dredges, but dredge output had been more than 16½ percent of the total amount of placer produced by all methods since placer mining began in the Territory. In the course of dredge-mining operations about 90,097,000 cubic yards of gravel has been mined, which has yielded placer gold worth \$42,920,000, or an average value per cubic yard of 47.6 cents.

The following table furnishes a record of the production of Alaska dredges for each year. The persistent decrease shown in the gold content of the gravel mined indicates that increased efficiency of the machines and of their operation permits successful mining of deposits that formerly would not have been attractive:

Placer gold produced by dredges in Alaska

Year	Dredges operated	Value of gold output from dredges	Cubic yards of gravel handled by dredges	Value of gold recovered by dredges per cubic yard	Percentage of gold recovered by dredges to total placer gold
1903	2	\$20,000			0.0
1904	3	25,000			.0
1905	3	40,000			.0
1906	3	120,000			.6
1907	4	250,000	2,644,300	\$0.70	1.5
1908	4	171,000			1.8
1909	14	425,000			2.6
1910	18	800,000			6.7
1911	27	1,500,000	2,500,000	.60	12.0
1912	38	2,200,000	3,400,000	.65	18.3
1913	35	2,200,000	4,100,000	.54	20.6
1914	42	2,350,000	4,450,000	.53	21.9
1915	35	2,330,000	4,600,000	.51	22.2
1916	34	2,679,000	3,900,000	.69	24.0
1917	36	2,500,000	3,700,000	.68	25.5
1918	28	1,425,000	2,490,000	.57	24.2
1919	28	1,360,000	1,760,000	.77	27.4
1920	22	1,129,900	1,633,900	.69	29.2
1921	24	1,582,500	2,799,500	.57	37.4
1922	23	1,767,800	3,186,400	.55	40.2
1923	25	1,848,600	4,645,000	.40	51.2
1924	27	1,563,300	4,342,700	.36	43.9
1925	27	1,572,300	3,144,600	.50	48.8
1926	32	2,291,000	5,730,000	.40	60.8
1927	28	1,740,000	6,084,000	.29	58.4
1928	27	2,185,000	6,371,000	.34	65.3
1929	30	2,932,000	8,709,600	.336	71.2
1930	27	3,912,600	9,906,000	.395	80.9
-----		42,920,000	90,097,000	.476	16.6