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REPORT OF

The Director of the Mint

Upon the Production of the Precious Metals in the United States

DURING THE CALENDAR YEAR

1909

WASHINGTON
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TREASURY DEPARTMENT,

Document No. 2604.

Director of the Mint.

2

CONTENTS.

LETTER OF TRANSMITTAL.

TREASURY DEPARTMENT,
OFFICE OF DIRECTOR OF THE MINT,
Washington, January 20, 1911.

SIR: I have the honor to transmit herewith the report on the production of gold and silver in the United States and the world for the calendar year 1909, together with such information as to their distribution, coinage, and consumption as this bureau has been able to gather. The returns for the United States have been secured through officials of the Mint Service and the United States Geological Survey. The aggregate of precious metals reported have been traced from production to market. The figures are therefore conservative, but are believed to be correct. The statistics for foreign countries are obtained from official sources wherever governmental calculations are made, and where such returns can not be had the best obtainable estimates are given and the authority stated.

Respectfully,

GEO. E. ROBERTS,
Director of the Mint.

The SECRETARY OF THE TREASURY.

PART I.

PRODUCTION, EMPLOYMENT, AND MOVEMENT OF GOLD AND SILVER IN THE UNITED STATES, AND SURVEY OF THE WORLD'S PRODUCTION OF GOLD AND SILVER IN 1909.

REPORT ON THE PRODUCTION OF THE PRECIOUS METALS IN THE UNITED STATES DURING THE CALENDAR YEAR 1909.

The production of gold in the United States in the calendar year 1909 was the largest in history, amounting to $99,673,400. The production of silver was slightly larger than in the year 1908, amounting to 54,721,500 fine ounces.

The changes in the output of the several States and Territories, as compared with the previous year, were unimportant except in the case of Nevada, which made a record production of gold, $4,696,800 in excess of the production of 1908. This was due to the enlarged capacity of the mills treating the rich ores of the Goldfield district. About one-half of the Alaska product was from the Fairbanks district and one-fifth each from the Seward Peninsula and the lode mines of southeastern Alaska. The outlook is for a decreased production from placers unless new fields are discovered or the yield from dredges is rapidly increased. The old placers show symptoms of exhaustion. In southeastern Alaska there is considerable activity in the development of quartz properties, and enlarged production from that locality may be expected eventually.

California continues to make progress, her yield of gold last year being the largest for many years. The increase now being made is chiefly the work of dredges. This class of mining operations has had more successful development in California than in any other part of the United States. About one-half of the gold yield of the State is from placers, and 80 per cent of the placer yield is by the dredges.

Although dredges are being successfully operated in many States and in some localities of Alaska the progress of this kind of mining is much slower than many enthusiasts predicted 10 years ago. There is no evidence of revolutionary developments in gold production as the result of dredge operations, at least in the near future.

Colorado shows a slight decrease in gold production, which is explained as a result of the cessation of pumping operations in the Cripple Creek district pending the completion of the new drainage tunnel. A further reduction in the treatment charge upon ores not exceeding the value of $10 per ton to $4 per ton was made during the year. It is noted that smelting operations in Colorado are being largely reduced, the cyanide treatment being found most economical. Of 15 smelters that have been in operation during the last 10 years only 5 were in operation in 1909, and these employing only a part of their capacity.

A review of the mining fields in the United States does not show any district which gives promise of materially increasing its output of gold or silver in the near future. The prospects are for a steady production.

Silver production in the United States is practically all in conjunction with lead and copper. Montana leads the States in the yield of silver, and 70 per cent of its product is from the copper ores

of the Butte district. The output of silver in Utah, Idaho, Colorado, and Nevada is likewise from ores yielding copper and lead.

The approximate distribution of gold and silver by producing States and Territories for the calendar year 1909 is shown in the following table:

PRODUCT OF GOLD IN THE SEVERAL STATES AND TERRITORIES IN 1908 AND 1909, WITH THE INCREASE AND DECREASE OF EACH IN THE LATTER YEAR.

States or Territories.	Value.		Increase.	Decrease.
	1908	1909		
Alabama	$41,200	$29,200		$12,000
Alaska	19,858,800	20,339,600	$480,800	
Arizona	2,500,000	2,626,800	126,800	
California	19,329,700	20,703,600	1,373,900	
Colorado	22,871,000	21,846,600		1,024,400
Georgia	56,200	43,400		12,800
Idaho	1,443,500	1,344,200		99,300
Missouri		200	200	
Montana	3,160,000	3,750,100	590,100	
Nevada	11,689,400	16,386,200	4,696,800	
New Hampshire	3,700			3,700
New Mexico	306,300	252,800		53,500
North Carolina	97,500	31,400		66,100
Oregon	905,900	829,000		76,900
Pennsylvania		6,200	6,200	
Philippine Islands	284,500	247,600		36,900
Porto Rico	600	600		
South Carolina	53,700	7,400		46,300
South Dakota	7,742,200	6,573,600		1,168,600
Tennessee	3,700	4,300	600	
Texas	500	400		100
Utah	3,946,700	4,213,300	266,600	
Virginia	3,600	4,000	400	
Washington	253,700	429,000	175,300	
Wyoming	7,600	3,900		3,700
Total	94,560,000	99,673,400	7,717,700	2,604,300
Net increase			5,113,400	

PRODUCT OF SILVER IN THE SEVERAL STATES AND TERRITORIES IN 1908 AND 1909, WITH THE INCREASE AND DECREASE OF EACH IN THE LATTER YEAR.

States or Territories.	Weight.		Increase.	Decrease.
	1908	1909		
	Fine ounces.	*Fine ounces.*	*Fine ounces.*	*Fine ounces.*
Alabama	400	200		200
Alaska	204,600	198,600		6,000
Arizona	2,900,000	2,523,600		376,400
California	1,703,700	2,304,900	601,200	
Colorado	10,150,200	8,846,300		1,303,900
Georgia	200	200		
Idaho	7,558,300	6,755,900		802,400
Illinois	2,000	900		1,100
Michigan	294,100	217,600		76,500
Missouri	49,400	15,200		34,200
Montana	10,356,200	12,034,500	1,678,300	
Nevada	9,508,500	10,119,200	610,700	
New Hampshire	6,300	3,000		3,300
New Mexico	400,900	324,200		76,700
North Carolina	1,300	400		900
Oregon	56,100	69,600	13,500	
Philippine Islands	1,300	3,000	1,700	
South Carolina	200			200
South Dakota	197,300	196,300		1,000
Tennessee	60,900	65,300	4,400	
Texas	447,000	408,100		38,900
Utah	8,451,300	10,551,100	2,099,800	
Virginia	300	6,400	6,100	
Washington	86,800	75,200		11,600
Wyoming	3,500	1,800		1,700
Total	52,440,800	54,721,500	5,015,700	2,735,000
Net increase			2,280,700	

APPROXIMATE GOLD PRODUCT OF THE UNITED STATES DURING THE CALENDAR YEAR 1909.

Item.	Weight.
	Fine ounces.
Domestic product in fine bars reported by private refineries	2,621,158
Unrefined gold of domestic production deposited at the mints and assay offices	2,177,503
Domestic gold contained in ores, copper matte, etc., exported for reduction	23,040
Total domestic product for 1909	4,821,701

APPROXIMATE DISPOSITION OF THE GOLD PRODUCT OF THE UNITED STATES DURING THE CALENDAR YEAR 1909.

Item.		Weight.
		Fine ounces.
Product of private refineries deposited at United States mints and assay offices		2,954,557
Product of private refineries exported as per customhouse returns		845,537
Product of private refineries sold for use in the arts		10,848
Domestic gold in ores, copper matte, etc., exported for reduction (customhouse returns)		23,040
Deposits of unrefined bullion at United States mints and assay offices		2,177,503
Total		6,011,485
Deduct:		
Bullion reported by domestic private refineries as contained in their product, but derived from foreign ores	*Fine ounces.* 965,007	
Bullion reported by domestic private refineries as from old material	242,234	
		1,207,241
Total disposition of domestic product		4,804,244

APPROXIMATE SILVER PRODUCT OF THE UNITED STATES DURING THE CALENDAR YEAR 1909.

Item.	Silver.
	Fine ounces.
Domestic product of fine bars reported by private refineries	53,524,757
Unrefined silver of domestic production deposited at the mints and assay offices	1,001,480
Domestic silver contained in ores, copper matte, etc., exported for reduction	195,223
Total domestic product for 1909	54,721,460

APPROXIMATE DISPOSITION OF THE SILVER PRODUCT OF THE UNITED STATES DURING THE CALENDAR YEAR 1909.

Item.		Silver.
		Fine ounces.
Product of private refineries deposited at United States mints and assay offices		1,404,202
Product of private refineries exported as per customhouse returns		107,598,225
Product of private refineries sold for use in the arts		15,634,015
Domestic silver in ores, copper matte, etc., exported for reduction (customhouse returns)		195,223
Deposits of unrefined bullion at United States mints and assay offices		1,001,480
Difference in balance of domestic private refineries, January 1 and December 31, 1909		1,012,366
Total		126,845,511
Deduct:		
Bullion reported by domestic private refineries as contained in their product, but derived from foreign ores	*Fine ounces.* 71,882,005	
Bullion reported by domestic private refineries as from old material	1,961,544	
		73,843,549
Total disposition of domestic product		53,001,962

APPROXIMATE DISTRIBUTION BY PRODUCING STATES AND TERRITORIES OF THE PRODUCT OF GOLD AND SILVER IN THE UNITED STATES FOR THE CALENDAR YEAR 1909.

[As estimated by the Director of the Mint.]

State or Territory.	Gold.		Silver.	
	Fine ounces.	Value.	Fine ounces.	Commercial value.
Alabama	1,413	$29,200	200	$100
Alaska	983,928	20,339,600	198,600	103,300
Arizona	127,071	2,626,800	2,523,600	1,312,300
California	1,001,537	20,703,600	2,304,900	1,198,500
Colorado	1,056,829	21,846,600	8,846,300	4,600,100
Georgia	2,099	43,400	200	100
Idaho	65,026	1,344,200	6,755,900	3,513,100
Illinois	.....	.....	900	500
Michigan	.....	.....	217,600	113,100
Missouri	10	200	15,200	7,900
Montana	181,411	3,750,100	12,034,500	6,257,900
Nevada	792,682	16,386,200	10,119,200	5,262,000
New Hampshire	.....	.....	3,000	1,600
New Mexico	12,229	252,800	324,200	168,600
North Carolina	1,519	31,400	400	200
Oregon	40,103	829,000	69,600	36,200
Pennsylvania	300	6,200	.....	.....
Philippine Islands	11,978	247,600	3,000	1,600
Porto Rico	29	600	.....	.....
South Carolina	358	7,400	.....	.....
South Dakota	317,998	6,573,600	196,300	102,100
Tennessee	208	4,300	65,300	33,900
Texas	19	400	408,100	212,200
Utah	203,818	4,213,300	10,551,100	5,486,600
Virginia	194	4,000	6,400	3,300
Washington	20,753	429,000	75,200	39,100
Wyoming	189	3,900	1,800	900
Total	4,821,701	99,673,400	54,721,500	28,455,200

DISTRIBUTION OF THE GOLD AND SILVER PRODUCT OF THE UNITED STATES, IN FINE OUNCES, AS REPORTED BY THE MINE OWNERS, FOR THE CALENDAR YEAR 1909, AS TO SOURCE OF PRODUCTION.

[Figures furnished by the United States Geological Survey.]

State or Territory.	Gold.			Silver.		
	Deep mines.	Placer.		Dry or siliceous ores.[1]	Lead ores.[2]	Copper ores.
		Dredges.	All other.			
	Fine ounces.	*Fine ounces.*	*Fine ounces.*	*Fine ounces.*	*Fine ounces.*	*Fine ounces.*
Alabama	1,411	.....	3	212	.....	.....
Alaska	201,196	20,559	765,662	125,401	.....	22,549
Arizona	131,041	.....	1,386	407,940	362,223	1,830,998
California	538,580	357,150	83,277	497,793	60,795	1,539,665
Colorado	1,041,555	19,574	2,605	6,523,213	2,135,285	244,135
Georgia	2,138	.....	795	202	.....	.....
Illinois	.....	.....	.....	.....	1,001	.....
Idaho	56,700	4,920	8,709	718,736	5,723,566	599,331
Massachusetts, New Hampshire, and Pennsylvania	335	.....	.....	.....	.....	3,493
Michigan	.....	.....	.....	.....	.....	286,430
Missouri	.....	.....	.....	.....	14,188	.....
Montana	157,129	20,629	5,656	1,664,220	433,448	10,281,046
Nevada	781,595	.....	4,013	9,458,374	1,448,069	74,618
New Mexico	10,520	.....	1,065	324,124	50,147	23,512
North Carolina	1,421	.....	525	391	.....	108
Oregon	27,121	2,064	8,642	27,600	.....	227
South Carolina	465	.....	70	44	.....	.....
South Dakota	318,146	.....	57	191,264	.....	3,009
Tennessee	169	.....	30	.....	.....	57,637
Texas	15	.....	.....	373,910	496	38
Utah	203,370	.....	122	402,335	8,814,120	2,500,717
Virginia	139	.....	42	8	.....	4,817
Washington	17,224	.....	290	64,178	3,229	12,081
Wyoming	144	.....	54	25	.....	1,729
Total	3,490,414	424,896	883,003	20,779,970	19,046,567	17,486.140

[1] Includes 152,040 ounces of silver from placers.
[2] Includes small amount of silver from zinc ores in Colorado.

DISTRIBUTION OF THE SILVER PRODUCT OF THE UNITED STATES AS TO THE SOURCES OF PRODUCTION.

Source.	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909
	Per ct.	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*
Quartz mills	24.7	28.0	27.4	27.8	29.4	29.9	26.2	24.9	29.6	36.5	39.3	36.3
Lead bullion	56.2	51.1	50.8	46.7	48.5	45.6	46.8	44.8	30.8	36.0	31.3	33.2
Copper bullion	19.1	20.9	21.8	25.5	22.1	24.5	27.0	30.3	39.6	27.5	29.4	30.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

The production of gold and silver from the mines of the United States since 1792 is shown in the following table.

The commercial value of the silver product is reckoned at the average yearly market price of silver on the New York market.

PRODUCT OF GOLD AND SILVER IN THE UNITED STATES FROM 1792 TO 1844 AND ANNUALLY SINCE.

[The estimate for 1792–1873 is by R. W. Raymond, commissioner, and since by Director of the Mint.]

Calendar years.	Gold.		Silver.	
	Fine ounces.	Value.	Fine ounces.	Commercial value.
1792 to July 31, 1834	677,250	$14,000,000	Insignificant.	
July 31, 1834, to Dec. 31, 1844	362,812	7,500,000	193,400	$253,400
1845	48,762	1,008,000	38,700	50,200
1846	55,341	1,140,000	38,700	50,300
1847	43,005	889,000	38,700	50,600
Total	1,187,170	24,537,000	309,500	404,500
1848	483,750	10,000,000	38,700	50,500
1849	1,935,000	40,000,000	38,700	50,700
1850	2,418,750	50,000,000	38,700	50,900
1851–1855	14,270,625	295,000,000	193,500	259,400
1856–1860	12,384,000	256,000,000	309,400	418,300
1861–1865	10,716,271	221,525,000	28,810,660	38,674,300
1866–1870	12,225,570	252,725,000	49,113,200	65,261,100
1871	2,104,312	43,500,000	17,789,100	23,588,300
1872	1,741,500	36,000,000	22,236,300	29,396,400
Total	58,279,778	1,204,750,000	118,568,200	157,749,900
1873	1,741,500	36,000,000	27,650,400	35,881,600
1874	1,620,122	33,490,900	28,868,200	36,917,500
1875	1,619,009	33,467,900	24,539,300	30,485,900
1876	1,931,575	39,929,200	29,996,200	34,919,800
1877	2,268,662	46,897,400	30,777,800	36,991,500
1878	2,477,109	51,206,400	35,022,300	40,401,000
1879	1,881,787	38,900,000	31,565,500	35,477,100
1880	1,741,500	36,000,000	30,318,700	34,717,000
1881	1,678,612	34,700,000	33,257,800	37,657,500
1882	1,572,187	32,500,000	36,196,900	41,105,900
1883	1,451,250	30,000,000	35,732,800	39,618,400
1884	1,489,950	30,800,000	37,743,800	41,921,300
1885	1,538,373	31,801,000	39,909,400	42,503,500
1886	1,686,788	34,869,000	39,694,000	39,482,400
1887	1,603,049	33,136,000	41,721,600	40,887,200
1888	1,604,478	33,167,500	45,792,700	43,045,100
1889	1,594,775	32,967,000	50,094,500	46,838,400
1890	1,588,877	32,845,000	54,516,300	57,242,100
1891	1,604,840	33,175,000	58,330,000	57,630,000
1892	1,597,098	33,015,000	63,500,000	55,662,500
1893	1,739,323	35,955,000	60,000,000	46,800,000
1894	1,910,813	39,500,000	49,500,000	31,422,100
1895	2,254,760	46,610,000	55,727,000	36,445,500
1896	2,568,132	53,088,000	58,834,800	39,654,600
1897	2,774 935	57,363,000	53,860,000	32,316,000
1898	3,118,398	64,463,000	54,438,000	32,118,400
1899	3,437,210	71,053,400	54,764,500	32,858,700
1900	3,829,897	79,171,000	57,647,000	35,741,100
1901	3,805,500	78,666,700	55,214,000	33,128,400

PRODUCT OF GOLD AND SILVER IN THE UNITED STATES FROM 1792 TO 1844 AND ANNUALLY SINCE—Continued.

Calendar years.	Gold.		Silver.	
	Fine ounces.	Value.	Fine ounces.	Commercial value.
1902	3,870,000	$80,000,000	55,500,000	$29,415,000
1903	3,560,000	73,591,700	54,300,000	29,322,000
1904	3,892,480	80,464,700	57,682,800	33,456,000
1905	4,265,742	88,180,700	56,101,600	34,222,000
1906	4,565,333	94,373,800	56,517,900	38,256,400
1907	4,374,827	90,435,700	56,514,700	37,299,700
1908	4,574 340	94,560,000	52,440,800	28,050,600
1909	4,821,701	99,673,400	54,721,500	28,455,200
Total	93,654,932	1,936,017,400	1,718,992,800	1,408,347,400
Grand total	153,121,880	3,165,304,400	1,837,870,500	1,566,501,800

DEPOSITS OF GOLD.

The aggregate of the deposits of gold bullion and coin at the various offices connected with the Mint Service during the calendar year 1909 was 6,329,254 fine ounces, of the value of $130,837,281. The redeposits in addition to the above were 1,926,388 fine ounces, of the value of $39,821,985.

Domestic gold bullion deposited contained 5,132,062 fine ounces, of the value of $106,089,141. Light-weight domestic gold coin purchased over the counter and domestic gold coin transferred from the Treasury for recoinage contained 130,845 fine ounces, of the value of $2,704,802.

Foreign gold coin and foreign gold bullion deposited contained 804,588 fine ounces, of the value of $16,632,324, as follows:

Countries.	Gold coin.		Refined bullion.		Crude bullion.	
	Fine ounces.	Coining value.	Fine ounces.	Coining value.	Fine ounces.	Coining value.
British Columbia			13,714	$283,490	50,100	$1,035,658
Northwest Territory					8,245	170,446
Ontario and Quebec					1,117	23,095
Nova Scotia					8,312	171,818
Mexico	376	$7,772	470,381	9,723,647	44,492	919,724
Panama					44	899
Cuba					1,296	26,796
San Domingo					153	3,167
Costa Rica	379	7,838			36,437	753,213
Nicaragua					38,278	791,283
Honduras					841	17,385
Salvador					73	1,519
Guatemala	17	356			999	20,657
Other from Central America					3,842	79,414
Colombia	18	376			106,306	2,197,539
Ecuador					142	2,940
Venezuela					1,297	26,807
Peru	10	207				
Argentine					37	769
Other from South America					11,275	233,075
Africa					31	646
Australia	456	9,420			10	209
Great Britain	450	9,310				
Spain	473	9,781				
Austria	39	812				
Russia	63	1,309				
Turkey	61	1,249				
Mixed coin	4,789	98,983				
Unknown					35	715
Total	7,131	147,413	484,095	10,007,137	313,362	6,477,774

Old jewelry deposited, surplus bullion and grains collected during the year contained 261,736 fine ounces of gold of the value of $5,410,588.

DEPOSITS AND PURCHASES OF SILVER.

Silver is coined in the United States on Government account only. Deposits of silver bullion are received by the mints and assay offices, to be returned to the depositor in fine or unparted bars with the weight and fineness stamped thereon. These deposits are confined almost exclusively to the assay office at New York, and the bars, when returned to the depositor, are sold for use in the arts or exported.

The purchases and deposits of silver bullion at the mints and assay offices of the United States during the calendar year 1909 were as follows:

Items.	Standard ounces.
Silver purchased	1,418,992.01
Silver parted from gold deposits and purchased	2,443,987.66
Uncurrent domestic coin for recoinage	649,953.42
For return in fine bars	3,055,550.87
For Philippine coinage	2,962,281.81
Total	10,530,765.77

Foreign silver coin and bullion contained 1,784,709 fine ounces as follows:

Countries.	Coin.		Refined bullion.		Crude bullion.	
	Fine ounces.	Coining value.	Fine ounces.	Coining value.	Fine ounces.	Coining value.
British Columbia					10,435	$13,491
Northwest Territory					1,795	2,320
Ontario and Quebec			250,994	$324,517	344,695	445,666
Nova Scotia					625	808
Mexico	56	$72	210,724	272,451	858,848	1,110,429
Cuba					204	264
San Domingo					9	11
Costa Rica	1,337	1,728			27,655	35,756
Nicaragua					20,899	27,022
Honduras					1,508	1,949
Salvador					24	32
Guatemala	7,758	10,031			93	121
Other from Central America					3,396	4,390
Colombia	171	221			32,856	42,480
Ecuador					86	111
Venezuela					77	100
Other from South America	1,122	1,450			4,746	6,136
Africa					3	4
China					117	151
Spain	108	140				
Unknown					17	24
Mixed coin	4,351	5,626				
Total	14,903	19,268	461,718	596,968	1,308,088	1,691,265

Old jewelry deposited, surplus bullion and grains collected during the year contained 520,910 fine ounces of silver.

PURCHASES OF SILVER FOR SUBSIDIARY COINAGE.

The silver required for the coinage of subsidiary coin was purchased under section 3526 of the Revised Statutes of the United States.

The following table shows the amount and cost of silver bullion purchased for the subsidiary silver coinage during the calendar year 1909.

Stock.	Standard ounces.	Cost.
Silver bullion purchased under section 3526, Revised Statutes at Treasury Department.	1,084,695.97	$501,086.05
Silver bullion purchased under section 3526, Revised Statutes at mints	287,766.78	132,459.42
Assay coins purchased	6,628.83	3,642.84
Mutilated coin purchased	2,532.51	1,169.46
Surplus bullion purchased	15,742.05	7,957.06
United States coin transferred for recoinage	649,953.42	808,651.22
Partings, charges, and fractions purchased	2,465,613.53	1,189,756.86
Total	4,512,933.09	2,644,722.91

BALANCES OF SILVER BULLION.

The balances of silver bullion on hand December 31, 1909, at the New York assay office and the mints of the United States for subsidiary silver coinage, and the Philippine Islands, were as follows:

Items.	Standard ounces.	Cost.
For subsidiary silver coinage	6,197,928.45	$3,623,500.60
Silver bullion for Philippine coinage	1,302,950.44	1,152,550.66
Total	7,500,878.89	4,776,051.26

DEPOSITS OF GOLD AND SILVER SINCE 1880.

The following table shows the amount of gold and silver (excluding redeposits) received at the mints and assay offices, by calendar years, since 1880:

Calendar years.	Gold.	Silver (coining value).	Total.
1880	$100,278,703	$35,103,825	$135,382,528
1881	98,763,426	30,326,848	129,090,274
1882	41,921,263	35,161,254	77,082,517
1883	51,089,456	36,978,184	88,067,640
1884	50,518,179	36,670,731	87,188,910
1885	44,714,052	35,836,725	80,550,777
1886	66,422,088	39,086,070	105,508,158
1887	74,724,077	46,381,333	121,105,410
1888	41,496,410	41,323,973	82,820,383
1889	42,599,206	41,977,265	84,576,471
1890	48,767,964	55,198,037	103,966,001
1891	60,849,552	70,994,120	131,843,672
1892	45,406,646	84,591,898	129,998,544
1893	69,419,223	62,465,005	131,884,228
1894	49,704,902	14,120,605	63,825,507
1895	69,433,579	13,843,636	83,277,215
1896	91,743,670	10,873,160	102,616,830
1897	87,924,232	12,707,128	100,631,360
1898	182,996,602	15,841,222	198,837,824
1899	129,798,782	13,481,927	143,280,709
1900	158,060,258	16,005,626	174,065,884
1901	136,858,186	7,486,293	144,344,479
1902	127,142,337	8,585,751	135,728,088
1903	139,475,047	28,898,656	168,373,703
1904	169,580,717	21,101,057	190,681,774
1905	139,769,034	16,409,547	156,178,581
1906	186,748,794	18,927,533	205,676,327
1907	205,133,821	42,288,635	247,422,456
1908	146,786,628	33,865,296	180,651,924
1909	130,837,281	10,310,889	141,148,170

COINAGE OF THE UNITED STATES.

The domestic coinage manufactured during the calendar year 1909 was as follows:

Description.	Pieces.	Value.
Gold	8,411,457	$88,776,907.50
Subsidiary silver	35,982,350	8,087,852.50
Minor	129,276,789	1,756,388.93
Total	173,670,596	98,621,148.93

The following table exhibits the number of fine ounces and value of gold and silver coinage of the United States, by calendar years, since 1873:

Calendar years.	Gold.		Silver.		
	Fine ounces.	Value.	Fine ounces consumed.	Dollars coined.	Subsidiary coined.
1873	2,758,475	$57,022,748	3,004,803	$1,521,600	$2,503,147.60
1874	1,705,441	35,254,630	5,271,258	4,910,000	1,941,776.70
1875	1,594,050	32,951,940	11,504,961	6,279,600	9,068,293.00
1876	2,253,281	46,579,453	18,122,152	6,192,150	18,311,157.50
1877	2,128,493	43,999,864	21,378,389	13,092,710	15,300,325.50
1878	2,408,400	49,786,052	22,029,173	26,755,450	1,763,400.00
1879	1,890,499	39,080,080	21,323,113	27,561,641	8,135.00
1880	3,014,163	62,308,279	21,200,641	27,399,342	12,351.75
1881	4,685,162	96,850,890	21,609,422	27,928,935	11,228.75
1882	3,187,317	65,887,685	21,615,563	27,575,197	397,935.00
1883	1,414,581	29,241,990	22,581,870	28,471,018	775,950.45
1884	1,160,601	23,991,756	22,050,011	28,136,875	397,991.15
1885	1,343,519	27,773,012	22,387,196	28,397,767	264,409.20
1886	1,400,240	28,945,542	24,783,882	31,423,886	662,823.90
1887	1,159,664	23,972,383	27,139,034	33,611,710	1,579,371.40
1888	1,518,046	31,380,808	25,491,439	31,990,833	1,034,773.45
1889	1,035,899	21,413,931	27,412,169	34,651,811	844,872.15
1890	990,100	20,467,182	30,262,932	38,043,004	1,159,904.20
1891	1,413,614	29,222,005	21,086,062	23,562,735	3,956,121.60
1892	1,682,832	34,787,223	9,461,268	6,333,245	6,307,833.00
1893	2,757,231	56,997,020	6,440,604	1,455,792	7,347,005.30
1894	3,848,045	79,546,160	6,810,196	3,093,972	6,106,378.85
1895	2,883,941	59,616,358	4,164,996	862,880	4,835,130.25
1896	2,276,192	47,052,060	17,697,736	19,876,762	3,213,137.05
1897	3,677,878	76,028,485	14,006,626	12,651,731	5,835,566.30
1898	3,772,561	77,985,757	17,384,482	14,426,735	8,607,298.45
1899	5,386,277	111,344,220	19,612,343	15,182,846	10,878,673.90
1900	4,802,328	99,272,942	27,543,406	25,010,912	11,334,409.45
1901	4,921,439	101,735,188	23,437,523	22,566,813	8,271,647.75
1902	2,282,571	47,184,932	22,630,799	18,160,777	11,867,390.20
1903	2,113,212	43,683,970	14,894,507	10,343,755	9,530,685.00
1904	11,290,843	233,402,428	11,794,995	8,812,650	6,882,959.95
1905	2,401,260	49,638,441	4,580,542	.....	6,332,180.90
1906	3,811,614	78,793,045	7,704,730	.....	10,651,087.85
1907	6,381,025	131,907,490	9,532,950	.....	13,178,435.75
1908	6,368,019	131,638,633	8,963,902	.....	12,391,777.25
1909	4,294,583	88,776,908	5,850,550	.....	8,087,852.50
Total	112,013,396	2,315,521,490	622,766,255	606,285,134	211,653,428.00

COINAGE FOR THE PHILIPPINE GOVERNMENT.

The Philippine government returned for recoinage pesos and fractional coins weighing 2,660,217.57 fine ounces, which will coin 5,171,496 pesos, or 5,516,262 pesos in fractional coins at the new weight and fineness.

There were coined from new bullion, as follows:

Denominations.	Pieces.	Value.	Silver consumed.
		Pesos.	*Fine ounces.*
50 centavos, silver	528,000	264,000.00	127,314.00
20 centavos, silver	450,000	90,000.00	43,402.50
10 centavos, silver	312,199	31,219.90	15,055.80
Total	1,290,199	385,219.90	185,772.30

There was a further coinage of Philippine coins recoined, as follows:

Denomination.	Pieces.	Value.	Silver consumed.
		Pesos.	*Fine ounces.*
Pesos, silver	7,578,000	7,578,000	3,898,123.20

COINAGE FOR THE CALENDAR YEAR 1909.

Denominations.	Pieces.	Value.	Silver consumed.
		Pesos.	*Fine ounces.*
Pesos, silver	7,578,000	7,578,000.00	3,898,123.20
50 centavos, silver	528,000	264,000.00	127,314.00
20 centavos, silver	450,000	90,000.00	43,402.50
10 centavos, silver	312,199	31,219.90	15,055.80
Total silver	8,868,199	7,963,219.90	4,083,895.50
1 centavo, bronze	1,737,612	17,376.12	.....
Total coinage	10,605,811	7,980,596.02	4,083,895.50

TOTAL PHILIPPINE COINAGE TO DECEMBER 31, 1909.

Denominations.	Coined from new bullion, act of June 23, 1906.		Coined from Philippine coins received for recoinage, act of June 23, 1906.		Total.	
	Pieces.	Fine ounces.	Pieces.	Fine ounces.	Pieces.	Fine ounces.
Pesos	93,445	48,068.11	38,718,000	19,916,539.20	38,811,445	19,964,607.31
50-centavo pieces	3,342,126	805,870.13	2,100,000	506,362.50	5,442,126	1,312,232.63
20-centavo pieces	3,666,152	353,600.36	2,735,000	263,790.75	6,401,152	617,391.11
10-centavo pieces	6,077,392	293,082.22	4,030,000	194,346.75	10,107,392	487,428.97
Total silver	13,179,115	1,500,620.82	47,583,000	20,881,039.20	60,762,115	22,381,660.02
5-centavo pieces, nickel	500	.....	.....	.....	500	.....
1-centavo pieces, bronze	3,925,112	.....	.....	.....	3,925,112	.....
½-centavo pieces, bronze	500	.....	.....	.....	500	.....
Total minor	3,926,112	.....	.....	.....	3,926,112	.....
Total coinage	17,105,227	1,500,620.82	47,583,000	20,881,039.20	64,688,227	22,381,660.02

The Philippine Government returned for recoinage the following coins during the calendar year 1909:

Denominations.	Face value.	Fine ounces.	Cost.
	Pesos.		
Pesos	2,383,700.00	1,857,996.99	$1,826,221.68
50-centavos	522,900.00	407,114.50	400,152.76
20-centavos	338,400.00	262,424.16	257,935.79
10-centavos	171,605.60	132,681.92	130,412.07
Total	3,416,605.60	2,660,217.57	2,614,722.30

The above coins returned will coin 5,171,496 pesos in peso pieces, or 5,516,262 pesos in subsidiary coin.

MOVEMENT OF GOLD FROM THE PORT OF NEW YORK.

The superintendent of the United States assay office at New York has prepared the following tables, giving exports of gold through the port of New York during the calendar year ended December 31, 1909:

STATEMENT OF UNITED STATES GOLD COIN AND GOLD BULLION EXPORTED FROM THE PORT OF NEW YORK TO EUROPE DURING THE CALENDAR YEAR 1909.

Dates.	Countries.	Amount.	Rate of exchange.
January 8	France	$1,900,000	$4.872
January 12	do	3,520,000	4.875
March 8	Netherlands	120	4.883
March 9	England	1,420,000	4.882
March 12	do	2,000,000	4.881
March 16	do	1,000,000	4.882
March 19	do	300,000	4.8825
Do	do	3,000,000	4.8825
March 22	do	5,300,000	4.883
March 23	do	750,000	4.8825
April 23	France	2,021,000	4.875
May 3	do	1,147,493	4.8755
May 12	do	896,000	4.8755
May 17	do	1,034,000	4.878
Do	Netherlands	2,000,000	4.878
May 19	France	1,500,739	4.8785
May 29	Netherlands	50	4.8785
June 2	France	885,000	4.8785
June 25	do	977,000	4.8815
June 28	Netherlands	2,000,000	4.881
December 23	England	14,600	4.8775
Total		31,666,002	

RECAPITULATION OF GOLD EXPORTS TO EUROPE.

Description.	France.	England.	Netherlands.
United States coin	$3,310,000	$12,364,600	$4,000,170
Foreign coin	500	188,120	
United States assay office bars	12,571,232	1,420,000	
Total	15,881,732	13,972,720	4,000,170

Grand total of exports to Europe		$33,854,622
Shipped to West Indies, Mexico, Central and South America, Cuba, etc., same period:		
United States coin	$54,817,145	
Foreign coin	2,310,050	
Total gold exports to other ports		57,127,195
Grand total of gold exports		90,981,817

The imports during the same period were as follows:

From Europe:		
Foreign coins	$2,665,150	
Bullion	320,849	
Bullion in ore, etc	11,451	
Total gold imports from Europe		$2,997,450
From other ports (West Indies, Mexico, Central and South America, Cuba, etc.):		
United States coin	$684,147	
Foreign coin	254,988	
Bullion	4,732,813	
Bullion in ore, etc	218,120	
Total imports from other ports		5,890,068
Grand total of gold imports		8,887,518

Imports and Exports of the Precious Metals in the Principal Countries of the World, 1909.

GOLD.

Countries.	Imports.	Exports.	Excess of imports over exports.	Excess of exports over imports.
United States	$44,086,966	$132,880,821	.....	$88,793,855
Africa [1]	628,635	165,262,554	.....	164,633,919
Arabia	803,245	860,258	.....	57,013
Australasia	4,757,912	43,569,035	.....	38,611,123
Austria-Hungary	62,593,775	27,176,625	$35,417,150	.....
Belgium	18,710,213	17,061,769	1,648,444	.....
Bolivia	.....	25,380	.....	25,380
Brazil	.....	2,252,896	.....	2,252,896
Chile	2,008	13,149	.....	11,141
Cuba	3,719,228	34,000	3,685,228	.....
Denmark	1,018,400	1,072,000	.....	53,600
Egypt	34,571,515	32,304,482	2,267,033	.....
Finland	245,590	.....	245,590	.....
France	77,034,792	35,520,492	41,514,300	.....
Germany	64,082,726	61,366,505	2,716,221	.....
Great Britain	266,157,786	229,939,867	36,217,919	.....
Guiana (British)	11,858	1,134,019	.....	1,122,161
Guiana (Dutch)	148,752	614,312	.....	465,560
Honduras	.....	1,555	.....	1,555
India (British)	46,352,579	11,071,097	35,281,482	.....
Japan	39,217,997	3,210,610	36,007,387	.....
Mexico	.....	21,629,028	.....	21,629,028
Netherlands	11,235,703	202,786	11,032,917	.....
Norway	269,356	9,148	260,208	.....
Portugal	367,133	.....	367,133	.....
Russia	44,357,449	10,604,951	33,752,498	.....
San Salvador	.....	853,752	.....	853,752
Servia	.....	140,565	.....	140,565
Siam	28,876	1,882	26,994	.....
Spain	5,113	69,894	.....	64,781
Straits Settlements	4,197,681	2,075,841	2,121,840	.....
Sweden	590,131	5,981	584,150	.....
Switzerland	11,299,806	8,196,245	3,103,561	.....
Venezuela	611,742	13,473	598,269	.....

SILVER.

United States	$46,187,702	$57,592,309	.....	$11,404,607
Africa [1]	1,051,656	226,700	$824,956	.....
Arabia	1,970,741	2,089,111	.....	118,370
Australasia	170,751	7,018,710	.....	6,847,959
Austria-Hungary	4,467,508	3,478,832	988,676	.....
Belgium	35,930,340	20,142,149	15,788,191	.....
Bolivia	.....	3,135,519	.....	3,135,519
Chile	31,986	265,325	.....	233,339
Cuba	138,375	235	138,140	.....
Egypt	502,110	40,068	462,042	.....
Finland	22,780	.....	22,780	.....
France	28,574,422	25,615,925	2,958,497	.....
Germany	12,842,388	5,909,742	6,932,646	.....
Great Britain	57,497,157	62,219,088	.....	4,721,931
Guiana (British)	253,834	221,936	31,898	.....
Guiana (Dutch)	14,103	35,890	.....	21,787
Honduras	4,064	226,689	.....	222,625
India (British)	37,857,822	6,333,971	31,523,851	.....
Japan	416,579	68,385	348,194	.....
Mexico	.....	37,635,911	.....	37,635,911
Netherlands	576,292	2,214,583	.....	1,638,291
Norway	265,562	152,285	113,277	.....
Portugal	1,669,203	.....	1,669,203	.....
Russia	10,163,018	3,188,439	6,974,579	.....
San Salvador	.....	511,289	.....	511,289
Servia	.....	8,610	.....	8,610
Siam	1,557,107	565,292	991,815	.....
Spain	624,578	207,317	417,261	.....
Straits Settlements	2,650,434	5,712,167	.....	3,061,733
Sweden	156,794	7,308	149,486	.....
Switzerland	5,599,677	1,614,840	3,984,837	.....

[1] Annual statement of the trade of the United Kingdom with foreign countries and with British possessions.

THE COURSE OF SILVER.

During the calendar year 1909 there was a great variation in the price of silver in the London market. The highest price for the year was 24⅞d. per ounce for silver 925 fine, British standard, equal to $0.54528 per ounce 1,000 fine, and the lowest price was 23 1/16d., equivalent to $0.50555 per ounce fine. During the year the market price of silver was dependent upon the demands of India and China.

The following table exhibits the highest, lowest, and average price of silver bullion and the value of a fine ounce each month during the calendar year 1909:

Month.	Highest.	Lowest.	Average price per ounce British standard, 0.925.	Equivalent value of a fine ounce with exchange at par ($4.8665).	Average monthly price at New York exchange on London.	Equivalent value of a fine ounce, based on average monthly price and average rate of exchange.	Average monthly New York price of fine bar silver.	Bullion value United States silver dollar.	Ratio.
	Pence.	*Pence.*	*Pence.*						
January	24⅜	23 3/16	23.8600	$0.52303	$4.8731	$0.52375	$0.52365	$0.40453	39.52
February	24 1/16	23 5/16	23.7057	.51965	4.8730	.52033	.52083	.40191	39.78
March	23⅞	23 1/16	23.2268	.50915	4.8800	.51057	.51092	.39379	40.60
April	24 7/16	23¼	23.7083	.51971	4.8760	.52070	.52057	.40196	39.77
May	24⅞	24 1/8	24.3425	.53361	4.8771	.53477	.53530	.41270	38.73
June	24½	23 13/16	24.1658	.52974	4.8794	.53115	.53543	.40972	39.02
July	23 7/8	23⅜	23.5120	.51541	4.8752	.51633	.61668	.39863	40.10
August	24	23 7/16	23.5875	.51706	4.8672	.51711	.51745	.39991	39.97
September	23 7/8	23⅝	23.7476	.52057	4.8626	.52016	.52067	.40262	39.71
October	23 13/16	23 1/16	23.5024	.51520	4.8609	.51501	.51591	.39847	40.12
November	23⅝	23⅛	23.3509	.51187	4.8734	.51266	.51317	.39589	40.38
December	24 6/16	23 9/16	24.0384	.52694	4.8772	.52811	.52908	.40755	39.22
Average			23.7289	.52016	4.8729	.52088	.52163	.40231	39.74

The following review of the London market for silver during the calendar year 1909 is from the annual circular issued by Messrs. Pixley & Abell, bullion brokers, of London, England.

A feature of the year now drawing to a close has been the comparative steadiness of the silver market. The highest quotation was on May 5, when the price stood at 24⅞d., while the lowest was 23 1/16d., quoted on March 4, and again on October 26 and 30, a range of 1 13/16d. only, against 5d. in 1908 and 8¼d. in 1907.

The average price of the year is 23 11/16d., the lowest on record, against 24 13/32d. in 1908 and 30 3/16d. in 1907. The previous lowest annual average was 24 1/16d. in 1902. The closing price of the year is 24¼d.

The improvement which took place during December, 1908, was continued during the early weeks of January and the quotation rose from 23 3/16d., the opening price of the year, to 24⅜d. on the 18th of that month. From that point the market declined, mainly on sales by China, until on March 4, 23 1/16d. was quoted. During March fluctuations were small, but April and the first week of May saw a steady improvement, due to purchases both by China and the Indian bazaars, which carried the quotation up to 24⅞d. The tendency was then again downward until early in July, when at about 23½d. the market remained very steady with insignificant fluctuations for a period of about seven weeks. From then there was a slight improvement to

24d., which was quoted on August 31, but during September and October the market sagged slowly, until in November prices steadied at about 23⅜d. During December, on important buying for the Continent and extensive covering by Indian speculators, a decided improvement was established, which for a few days carried the quotation to 24 5/16d.

Both India and China, the two most important silver-using countries in the world, have, as usual, been the largest operators in the market, and most of the important movements in price have been due to their actions.

Shipments to India, though less than in 1908, have continued on a large scale and amount to about £6,750,000 while the stock held in Bombay is now £1,000,000 with nearly £500,000 on the water, against a stock of £400,000 and £840,000 in transit at the end of 1908. With the excellent crops of cotton and other produce in India, it is anticipated that there will be a large demand for silver for jewelry and hoarding during the coming year, though, judging from the increased shipments of gold to India during the last few months, it is probable that a greater proportion of gold than usual will absorb the savings of the people. The speculation to which we referred last year continued until recently, and at one time it was estimated that Indian speculators had sold short on this market to the extent of £2,000,000. During the last few months, however, this has been largely liquidated and the amount now open can be but trifling. This buying was probably the principal cause of the steadiness of the market during the later months of the year.

The Indian government has again made no purchases. Its total holdings of silver rupees, which at the beginning of the year stood at about 45 crores (£30,500,000), increased during the summer to 49 crores (£32,500,000) but during the last few months, owing to the demand for currency to move the heavy crops referred to above, these stocks have been reduced to 38¾ crores (£25,825,000) and it is probable further large reductions will be made during the early months of 1910. Whether these will be so large as to lead to fresh purchases of silver by the government remains to be seen.

China has been a larger and more important buyer this year than usual, though at times, when quotations have suited, she has sold freely. In addition to her operations on this market, she has also bought and sold largely in Bombay, while from San Francisco she has received upward of £1,500,000, against £1,100,000 in 1908. The low rates of exchange ruling in China have again adversely affected the import trade, while exports for the same reason have been stimulated. The country has been favored with excellent crops and the banks have been obliged to buy and import silver freely to pay for their exports. Large purchases of Manchurian beans, of which the crop this year is unusually large, have been made for Europe, and these have had to be paid for in silver. This is practically a new trade so far as Europe is concerned, Japan having previously been the principal buyer of these beans. In Shanghai the stock of sycee, which at the beginning of the year amounted to 19,000,000 taels, is now about 14,200,000 taels. Shipments of silver from London to China during the year amounted to nearly £2,000,000 against £821,000 in 1908, but these figures are not necessarily correct, for silver shipped to China from London is often diverted while in

transit to India, whilst shipments to India are in the same way diverted to China.

Coinage by the London mint for home use has been on a small scale, but there have been purchases for colonial coinage, notably for the new silver currency of Australia. The well appointed mint of the Canadian Government in Ottawa, which was completed a little over a year ago, is now supplying Canadian requirements in this direction.

The product of the cobalt district of Canada continues to show an increase. This year's output is estimated to amount to about 24,000,000 ounces, against about 20,000,000 ounces last year. Though the development work at all the good mines shows satisfactory results, and there is a large amount of valuable ore in sight, sufficient for several years working, it is improbable that the output will be increased unless a substantial rise in the price of silver takes place. There are other districts, such as Gowganda, within 100 miles or so of Cobalt, where important discoveries of silver have been made, but sufficient development has not yet been done on these properties to show what amounts of silver may be expected from them in the future. The total Canadian production is estimated at 28,000,000 ounces against 22,000,000 ounces in 1908. This increase in the output of silver by Canada is probably offset to some extent by reduced production in the other countries, such as Mexico, where the effect of the recent low prices is felt more severely than in Canada, where the cost of production is remarkably low.

EXPORTS OF SILVER TO THE EAST.

The exports of silver from London to India, China, and the Straits since 1881 have been as follows:

Calendar years.	India.	China.	Straits.	Total.
1881	$12,375,612	$3,898,860	$3,577,729	$19,852,201
1882	18,604,945	1,584,318	7,354,255	27,543,518
1883	18,040,140	4,212,574	11,189,631	33,442,345
1884	26,073,909	5,018,714	8,136,097	39,228,720
1885	30,913,667	3,160,315	3,108,146	37,182,128
1886	21,159,591	1,769,425	2,892,064	25,821,080
1887	19,798,328	1,427,179	2,766,946	23,992,453
1888	21,162,116	1,153,002	3,219,321	25,534,439
1889	28,392,786	2,731,861	8,181,141	39,305,788
1890	35,673,177	1,284,498	4,441,197	41,398,872
1891	21,717,992	1,177,620	10,754,800	33,650,412
1892	35,180,897	719,668	18,622,825	54,523,390
1893	34,319,877	11,635,650	7,847,295	53,802,822
1894	24,391,351	13,279,564	6,002,565	43,673,480
1895	17,638,610	8,042,003	3,668,772	29,349,385
1896	23,874,942	3,602,597	4,025,257	31,502,796
1897	28,250,305	2,721,522	3,597,331	34,569,158
1898	20,984,625	3,721,656	1,971,443	26,677,724
1899	25,597,912	6,929,117	1,396,223	33,923,252
1900	37,916,065	11,252,496	3,922,477	53,091,038
1901	36,987,395	4,101,764	3,150,630	44,239,789
1902	30,987,195	991,793	5,363,710	37,342,698
1903	36,125,636	1,508,907	3,999,674	41,634,217
1904	46,366,153	2,495,502	385,758	49,247,413
1905	36,754,830	4,315,841	186,382	41,257,053
1906	73,997,060	2,096,002	8,516	76,101,578
1907	51,935,064	2,420,354	3,448,645	57,804,063
1908	45,133,819	3,608,023	802,413	49,544,255
1909	32,477,074	9,538,340	557,701	42,573,115

VALUE OF NET IMPORTS OF SILVER INTO INDIA SINCE 1835.

The net imports in value of silver into India, average exchange rate of India rupee in London, and amount of council bills sold, by fiscal years ended March 31, is shown by the following table:

Years.	Net imports of silver.	Average rate of Indian rupee.	Amount of council bills sold.	Years.	Net imports of silver.	Average rate of Indian rupee.	Amount of council bills sold.
		Pence.				*Pence.*	
1835-36	[1] 16,118,960	.....	$9,953,224	1873-74	$11,311,401	22.351	$64,654,752
1836-37	$6,176,311	22¾	9,938,522	1874-75	20,916,698	22.221	52,760,715
1837-38	9,173,294	23	8,303,149	1875-76	6,826,414	21.645	60,294,052
1838-39	12,671,392	23⅜	11,419,685	1876-77	29,911,149	20.491	61,784,106
1839-40	7,864,683	23½	7,005,448	1877-78	61,869,640	20.790	49,319,325
1840-41	6,679,118	23½	5,715,461	1878-79	15,910,390	19.761	67,880,692
1841-42	5,887,052	22⅝	12,600,746	1879-80	31,852,848	19.961	74,271,598
1842-43	14,068,739	23½	5,827,332	1880-81	15,751,280	19.956	74,163,888
1843-44	17,237,334	23	13,634,624	1881-82	21,699,764	19.895	89,604,086
1844-45	8,719,684	21⅝	12,248,742	1882-83	29,614,971	19.525	73,584,015
1845-46	4,112,529	21¾	14,919,273	1883-84	25,372,923	19.536	85,649,451
1846-47	6,332,979	22⅝	15,071,750	1884-85	28,367,364	19.308	66,957,731
1847-48	2,204,565	22	7,503,189	1885-86	42,960,530	18.254	50,089,386
1848-49	1,344,618	21⅝	9,193,767	1886-87	25,306,454	17.441	59,061,202
1849-50	5,810,633	22½	14,283,752	1887-88	31,623,459	16.899	74,742,515
1850-51	10,410,803	24¼	15,750,223	1888-89	30,709,917	16.379	69,410,203
1851-52	14,016,886	24⅛	13,516,816	1889-90	36,741,437	16.566	75,306,635
1852-53	22,293,629	23⅞	16,152,235	1890-91	51,993,287	18.089	77,713,304
1853-54	11,279,345	24⅛	18,738,775	1891-92	30,611,949	16.733	78,320,740
1854-55	138,797	23⅝	17,860,191	1892-93	39,083,615	14.984	80,454,024
1855-56	40,085,623	24⅝	7,222,081	1893-94	40,466,665	14.546	46,378,884
1856-57	56,413,954	25⅛	13,722,119	1894-95	16,812,318	13.100	82,268,679
1857-58	61,012,039	24⅝	3,059,077	1895-96	18,206,409	13.641	85,278,507
1858-59	[1] 77,283,420	[2]	124,451	1896-97	17,163,165	14.454	76,028,915
1859-60	[1] 111,475,630	[2]	22,843	1897-98	26,447,429	15.393	44,271,918
1860-61	[1] 53,280,090	[2]	3,879	1898-99	16,442,585	15.979	91,064,157
1861-62	$43,988,930	23⅞	5,809,277	1899-1900	11,653,240	16.068	92,495,079
1862-63	60,757,238	23⅞	32,321,230	1900-1901	30,792,023	15.973	65,501,810
1863-64	61,950,883	23⅝	43,698,839	1901-2	23,318,450	15.988	89,444,377
1864-65	48,793,010	23⅞	33,040,970	1902-3	22,569,699	16.0018	90,029,987
1865-66	89,904,731	23¾	33,900,604	1903-4	44,294,125	16.0491	116,111,293
1866-67 [3]	32,474,026	23	24,661,422	1904-5	43,024,637	16.045	118,866,929
1867-68	26,230,510	23⅛	20,134,097	1905-6	51,010,716	16.048	135,972,219
1868-69	40,330,842	23⅛	18,033,989	1906-7	77,881,906	16.0926	144,042,151
1869-70	34,500,818	23⅞	33,968,764	1907-8	63,161,556	16.0291	73,640,175
1870-71	4,273,507	22⅜	41,090,337	1908-9	39,154,092	15.9079	68,834,428
1871-72	30,574,254	23⅛	50,175,265	1909-10	.....	.....	125,805,678
1872-73	3,298,985	22¾	67,834,606				

[1] Rupees.

[2] From 1858-59 to 1860-61, inclusive, the home treasury was opened at all times for the sale of bills on India at rates altered from time to time by advertisement. Consequent on the mutiny it was necessary to refrain from drawing on India and exchange was raised to a prohibitory rate.

[3] Eleven months.

Gold and Silver Imported into and Exported from British India in each Fiscal Year ending March 31, from 1873-74 (British Standard Ounces).

[From Financial and Commercial Statistics of British India.]

Period.	Gold.			Silver.		
	Imported.	Exported.	Net imports.	Imported.	Exported.	Net imports.
	Ounces.	*Ounces.*	*Ounces.*	*Ounces.*	*Ounces.*	*Ounces.*
1873-74	.....	.....	331,554	.....	.....	8,747,151
1874-75	.....	.....	446,964	.....	.....	16,269,590
1875-76	.....	.....	355,985	.....	.....	5,451,074
1876-77	.....	.....	62,696	.....	.....	25,229,986
1877-78	.....	.....	102,628	.....	.....	51,436,354
1878-79	.....	.....	177,101	.....	.....	13,916,146
1879-80	.....	.....	374,227	.....	.....	27,581,194
1880-81	.....	.....	777,533	.....	.....	13,642,358
1881-82	.....	.....	1,028,240	.....	.....	18,852,031

GOLD AND SILVER IMPORTED INTO AND EXPORTED FROM BRITISH INDIA IN EACH FISCAL YEAR ENDING MARCH 31, FROM 1873-74 (BRITISH STANDARD OUNCES)—Continued.

Period.	Gold.			Silver.		
	Imported.	Exported.	Net imports.	Imported.	Exported.	Net imports.
	Ounces.	*Ounces.*	*Ounces.*	*Ounces.*	*Ounces.*	*Ounces.*
1882-83	.....	.....	1,048,810	.....	.....	26,216,055
1883-84	.....	.....	1,138,584	.....	.....	22,448,221
1884-85	.....	.....	973,053	.....	.....	25,393,863
1885-86	.....	.....	544,437	.....	.....	40,677,913
1886-87	.....	.....	393,174	.....	.....	25,078,814
1887-88	569,684	41,646	528,038	37,877,141	5,994,542	32,782,599
1888-89	512,287	50,710	461,577	37,844,665	5,408,636	32,436,029
1889-90	850,232	76,848	773,384	43,940,659	5,296,885	38,643,774
1890-91	1,175,875	161,646	1,014,229	56,190,870	4,661,785	51,529,085
1891-92	709,102	285,454	423,648	38,177,580	5,829,142	32,348,438
1892-93	272,442	726,925	−454,483	54,180,144	8,656,632	45,523,512
1893-94	474,635	378,399	96,236	60,328,296	5,999,323	54,328,973
1894-95	236,873	926,843	−689,970	32,638,069	5,598,047	27,040,022
1895-96	695,055	372,432	322,623	34,082,810	7,064,731	27,018,079
1896-97	657,238	347,873	309,365	37,520,322	11,591,234	25,929,088
1897-98	1,129,149	397,114	732,035	68,535,612	24,250,995	44,284,617
1898-99	1,432,461	410,461	1,022,000	49,226,780	26,061,355	23,165,425
1899-1900	1,914,037	353,225	1,560,812	50,663,542	32,017,260	18,646,282
1900-1901	1,987,738	1,881,060	106,678	64,746,549	15,311,385	49,435,164
1901-2	1,372,249	1,097,743	274,506	66,726,972	27,721,780	39,005,192
1902-3	2,187,384	770,766	1,416,618	75,569,185	32,294,876	42,274,309
1903-4	3,330,466	1,764,229	1,566,237	104,324,765	25,142,629	79,182,136
1904-5	3,605,017	2,088,025	1,516,992	98,118,908	23,769,313	74,349,595
1905-6	2,396,420	2,461,892	−65,472	88,853,079	4,535,314	84,317,765
1906-7	3,019,161	642,010	2,377,151	125,878,008	7,679,151	118,198,857
1907-8	3,380,405	599,065	2,781,340	106,291,860	8,442,915	97,848,945
1908-9	1,334,107	708,769	625,338	85,039,761	11,309,088	73,730,673
1909-10	4,095,000	590,000	3,505,000	75,502,000	14,487,000	61,015,000

NOTE.—The quantities in the column "net imports" for both gold and silver for the years 1873-74 to 1886-87 are estimated only, deduced from the declared values of the trade for those years by the following process:

For gold, the rupee value of the monthly net imports was converted into sterling at the average rate of exchange in each month, and this sterling value was then divided by the English mint price of gold (£3 17s. 10½d.). For silver the average price of 107 rupees per 100 tolas, or 285.33 rupees per 100 ounces, was taken as the basis of the value of the annual imports.

IMPORTS AND EXPORTS OF BULLION INTO AND FROM LONDON.

The imports and exports of bullion from various countries during the calendar year 1909 were as follows:

IMPORTS AND EXPORTS.

Countries.	Imports.		Exports.	
	Gold.	Silver.	Gold.	Silver.
Austria	$842,790	$2,554	$28,693,054	$165,753
Belgium	139,776	405,272	108,995	.....
France	21,271,720	2,441,299	38,080,441	2,052,651
Germany	3,668,353	1,487,086	37,897,990	6,718,296
Holland	1,930,146	7,402	704,095	34,241
Sweden and Denmark	.....	.....	.....	61,654
Russia	218,447	7,942	11,424,109	5,000,465
Spain, Portugal, etc	578,749	294,272	203,366	959,241
Switzerland	390,376	8,176	484,217	.....
Turkey	395,238	18,435	8,540,708	69,143
Gibraltar	95,383	12,390	291,990	14,210
Malta	321,389	73,484	.....	.....
Egypt	17,700,113	29,686	19,952,845	351,240
Ceylon	4,866	.....	104,630	38,869
Bombay, Madras, Calcutta	10,564,962	75,314	25,919,320	32,642,574
Singapore, Penang, Hongkong, Shanghai	905,261 / 446,823	973 / 181,662	5,660 / 999	428,836 / 10,380,244

IMPORTS AND EXPORTS—Continued.

Countries.	Imports.		Exports.	
	Gold.	Silver.	Gold.	Silver.
Dutch Indies	$2,384,502	$270,053	$574,174	$43,808
West Coast of Africa	4,833,286	220,092	9,616	997,297
British South Africa	160,388,370	6,750	620,479	54,359
United States	14,384,328	48,500,249	17,762	23,286
Mexico, South America (except Brazil), West Indies	3,339,319	1,006,489	40,170,670	530,336
Brazil	2,582,272	506	14,687,783	362,578
British North America	2,550	2,070,516	.....	.....
Australia	12,716,223	164,497	.....	217,406
New Zealand	5,207,569	181,350	.....	496,261
Other countries	844,975	30,708	1,447,063	576,340
Total	266,157,786	57,497,157	229,939,867	62,219,088

STOCK OF MONEY IN THE UNITED STATES.

On December 31, 1909, the stock of domestic coin in the United States was $2,272,130,516, as shown by the following official table:

Items.	Gold.	Silver.	Total.
Estimated stock of coin Dec. 31, 1908	$1,545,108,174	$721,587,493	$2,266,695,667
Net imports United States coin, calendar year 1909	.....	2,107,458	2,107,458
United States coin returned in transports from the Philippine Islands, not recorded at the customhouse, calendar year 1909	.....	[1] 15,500	15,500
Coinage, calendar year 1909	88,776,908	8,087,853	96,864,761
Total	1,633,885,082	731,798,304	2,365,683,386
Less:			
United States coin melted for recoinage (face value), calendar year 1909	2,727,819	869,818	3,597,637
United States coin estimated to have been used in the arts, calendar year 1909	3,500,000	100,000	3,600,000
Net exports United States coin, calendar year 1909	86,355,233	.....	86,355,233
Total	92,583,052	969,818	93,552,870
Estimated stock of coin in the United States Dec. 31, 1909	1,541,302,030	730,828,486	2,272,130,516

[1] Of this amount $8,200 were in 1-dollar pieces.

NOTE.—The number of standard silver dollars coined to December 31, 1909, was 570,272,610, which, added to the Hawaiian dollar coinage, 500,000, plus the number imported from the Philippine Islands, 150,000, and the number returned in Government transports, 491,930, equals 571,414,540. Since July 1, 1898, the number of standard silver dollars exported in transports has been 2,495,000; and since 1883 the number melted has been 188,003 (see Report of the Director of the Mint, 1909, p. 11), and the number of Hawaiian dollars melted to December 31, 1909, has been 454,818, a total disposition of 3,137,821, leaving in the United States on December 31, 1909, 568,276,719 standard silver dollars, and 162,551,767 dollars in subsidiary silver coins.

The value of the gold and silver bullion held by the Government institutions on December 31, 1909, was as follows:

GOLD AND SILVER BULLION IN THE MINTS AND ASSAY OFFICES ON DECEMBER 31, 1909.

Bullion.	Value
Gold	$97,347,289
Silver (cost)	4,776,051
Total	102,123,340

The total metallic stock in the United States was as follows:

METALLIC STOCK IN THE UNITED STATES ON DECEMBER 31, 1909,

Bullion and coin.	Value.
Gold	$1,638,649,319
Silver	735,604,537
Total	2,374,253,856

The location of the stock of metallic and paper money in the United States, December 31, 1909, was as follows:

Money.	In Treasury.	Outside of Treasury.	Total.
Metallic:			
Gold bullion	$97,347,389		$97,347,289
Silver bullion	4,776,051		4,776,051
Gold coin	934,803,233	$606,498,797	1,541,302,030
Silver dollars	493,587,729	74,688,990	568,276,719
Subsidiary silver coin	16,123,034	146,428,733	162,551,767
Total metallic	1,546,637,436	827,616,520	2,374,253,856
Paper:			
Legal-tender notes (old issue)	8,032,587	338,648,429	346,681,016
Legal-tender notes (act of July 14, 1890)	9,586	3,932,414	3,942,000
National-bank notes	24,563,874	685,790,379	710,354,253
Total notes	32,606,047	1,028,371,222	1,060,977,269
Gold certificates	86,528,020	788,374,849	
Silver certificates	13,453,556	473,901,444	
Total certificates	99,981,576	1,262,276,293	
Grand total		3,118,264,035	3,435,231,125

GOLD AND SILVER USED IN INDUSTRIAL ARTS IN THE UNITED STATES DURING THE CALENDAR YEAR 1909.

Among the purveyors of gold and silver bars for use in the industrial arts the United States mint at Philadelphia and the United States assay office at New York hold the foremost places; consequently the larger portion of the material consumed in the arts is brought under Government notice and is a matter of public record.

The following table gives the value of the gold and the quantity of the silver bars issued by the Government institutions and private refineries during the calendar year 1909, with the class of material from which they were made:

GOLD AND SILVER BARS ISSUED BY THE GOVERNMENT INSTITUTIONS AND MANUFACTURED BY PRIVATE REFINERIES FOR USE IN THE INDUSTRIAL ARTS DURING THE CALENDAR YEAR 1909.

Material used.	Value of gold issued by—			Weight of silver issued by—		
	Government institutions.	Private refineries.	Total.	Government institutions.	Private refineries.	Total.
				Fine ounces.	*Fine ounces.*	*Fine ounces.*
Domestic bullion	$18,455,948	$224,255	$18,680,203	594,763	15,634,015	16,228,778
Foreign bullion and coin	10,561,660	207	10,561,867	1,605,856	3,209,021	4,814,877
United States coin	98	364,458	364,556		1,500	1,500
Old jewelry, etc	2,870,870	2,015,829	4,886,699	354,629	6,425,498	6,780,127
Total	31,888,576	2,604,749	34,493,325	2,555,248	25,270,034	27,825,282

The total amount of gold and silver coin estimated to have been used in the arts during the calendar year 1909 was $3,500,000 and $100,000, respectively; changing the above table so that it will include these amounts will make the total industrial consumption for 1909 as follows:

Material used.	Gold.	Silver.
		Fine ounces.
Domestic bullion	$18,680,203	16,228,778
Foreign material	10,561,867	4,814,877
United States coin	3,500,000	77,344
Old material	4,886,699	6,780,127
Total	37,628,769	27,901,126

In order to arrive at the net consumption in the industrial arts there should be deducted from the foregoing totals the amount of old jewelry, plate, etc., included, and also the amount of the same class of material returned to coinage use. In the year 1909 these amounts aggregated $7,380,560 in gold, and 6,941,962 fine ounces of silver, which leaves $30,248,209 of gold and 20,959,164 fine ounces of silver as the net amount of new bullion devoted to industrial use.

The following table gives the amounts and the classification of gold and silver used in the industrial arts in the United States since 1880:

GOLD AND SILVER BARS FURNISHED FOR USE IN MANUFACTURES AND THE ARTS, AND CLASSIFICATION OF THE MATERIAL USED, BY CALENDAR YEARS, SINCE 1880.

GOLD.

Calendar years.	New material.				Old material.	Grand total.
	United States coin.	Domestic bullion.	Foreign bullion and coin.	Total new material.		
1880	$3,300,000	$6,000,000	$1,267,600	$10,567,600	$395,000	$10,962,600
1881	2,700,000	7,000,000	1,547,800	11,247,800	522,900	11,770,700
1882	2,500,000	7,000,000	671,500	10,171,500	696,500	10,868,000
1883	4,875,000	7,840,000	194,500	12,909,500	1,549,300	14,458,800
1884	5,000,000	6,000,000	385,500	11,385,500	3,114,500	14,500,000
1885	3,500,000	6,736,927	178,913	10,415,840	1,408,902	11,824,742
1886	3,500,000	7,003,480	638,003	11,141,483	1,928,046	13,069,529
1887	3,500,000	9,090,342	384,122	12,974,464	1,835,882	14,810,346
1888	3,500,000	9,893,057	718,809	14,111,866	2,402,976	16,514,842
1889	3,500,000	9,686,827	291,258	13,478,085	3,218,971	16,697,056
1890	3,500,000	10,717,472	362,062	14,579,534	3,076,426	17,655,960
1891	3,500,000	10,697,679	628,525	14,826,204	4,860,712	19,686,916
1892	3,500,000	10,588,703	771,686	14,860,389	4,468,685	19,329,074
1893	1,500,000	8,354,482	804,254	10,658,736	2,777,165	13,435,901
1894	1,500,000	6,430,073	543,585	8,473,658	2,184,946	10,658,604
1895	1,500,000	8,481,789	471,027	10,452,816	2,976,269	13,429,085
1896	1,500,000	7,209,787	316,804	9,026,591	2,369,343	11,395,934
1897	1,500,000	7,184,822	613,981	9,298,803	2,571,428	11,870,231
1898	1,500,000	9,463,262	437,641	11,400,903	2,164,976	13,565,879
1899	1,500,000	13,267,287	344,906	15,112,193	2,734,985	17,847,178
1900	1,500,000	14,582,627	584,903	16,667,530	3,480,612	20,148,142
1901	1,500,000	16,296,688	685,642	18,482,330	3,386,626	21,868,956
1902	1,500,000	18,653,625	851,673	21,005,298	4,677,549	25,682,847
1903	3,500,000	19,944,365	953,597	24,397,962	4,665,589	29,063,551
1904	3,500,000	12,298,459	7,131,577	22,930,036	5,725,927	28,655,963
1905	3,500,000	20,559,910	3,562,069	27,621,979	5,586,636	33,208,615
1906	3,500,000	18,667,804	10,452,037	32,619,841	6,506,922	39,126,763
1907	3,500,000	15,546,924	14,502,571	33,549,495	7,177,575	40,727,070
1908	3,500,000	8,407,971	2,846,974	14,754,945	16,721,146	31,476,091
1909	3,500,000	16,186,342	10,561,867	30,248,209	7,380,560	37,628,769
Total	85,875,000	329,790,704	63,705,386	479,371,090	112,567,054	591,938,144

GOLD AND SILVER BARS FURNISHED FOR USE IN MANUFACTURES AND THE ARTS, AND CLASSIFICATION OF THE MATERIAL USED, BY CALENDAR YEARS, SINCE 1880.—Continued.

SILVER (FINE OUNCES).

Calendar years.	New material.				Old material.	Grand total.
	United States coin.	Domestic bullion.	Foreign bullion and coin.	Total new material.		
1880	464,063	3,867,188	273,023	4,604,274	112,148	4,716,422
1881	154,687	4,563,281	286,945	5,004,913	137,672	5,142,585
1882	154,687	4,906,920	340,544	5,402,151	164,665	5,566,816
1883	154,687	3,576,143	119,883	3,850,713	434,595	4,285,308
1884	154,687	3,480,469	502,734	4,137,890	131,484	4,269,374
1885	154,687	3,511,310	48,501	3,714,498	357,472	4,071,970
1886	154,687	2,804,635	638,562	3,597,884	312,589	3,910,473
1887	154,687	3,173,208	506,595	3,834,490	371,719	4,206,209
1888	154,687	5,010,218	597,082	5,761,987	504,318	6,266,305
1889	154,687	5,644,495	508,920	6,308,102	472,582	6,780,684
1890	154,687	5,525,155	963,254	6,643,096	495,077	7,138,173
1891	154,687	5,637,642	971,516	6,763,845	663,707	7,427,552
1892	154,687	5,572,006	966,643	6,693,336	500,706	7,194,042
1893	77,344	5,082,054	1,346,326	6,505,724	945,787	7,451,511
1894	77,344	6,635,685	759,824	7,472,853	944,504	8,417,357
1895	77,344	7,599,323	752,942	8,429,609	1,065,902	9,495,511
1896	77,344	6,160,777	821,387	7,059,508	832,860	7,892,368
1897	77,344	7,116,009	616,579	7,809,932	853,457	8,663,389
1898	77,344	9,417,981	489,160	9,984,485	734,233	10,718,718
1899	77,344	8,388,658	529,137	8,995,139	1,583,678	10,578,817
1900	77,344	10,423,485	940,450	11,441,279	1,776,006	13,217,285
1901	77,344	11,809,418	1,038,409	12,925,171	1,208,523	14,133,694
1902	77,344	15,236,711	1,289,623	16,603,678	2,741,331	19,345,009
1903	77,344	15,016,256	954,930	16,048,530	3,919,726	19,968,256
1904	77,344	16,629,834	1,218,122	17,925,300	2,554,687	20,479,987
1905	77,344	16,580,307	2,754,003	19,411,654	4,289,023	23,700,677
1906	77,344	15,231,628	2,734,187	18,043,159	3,810,105	21,853,264
1907	77,344	17,431,691	4,628,208	22,137,243	2,232,541	24,369,784
1908	77,344	15,842,812	4,490,942	20,411,098	3,439,730	23,850,828
1909	77,344	16,066,943	4,814,877	20,959,164	6,941,962	27,901,126
Total	3,635,155	257,942,242	36,903,308	298,480,705	44,532,789	343,013,494

EXCHANGE OF FINE GOLD BARS FOR GOLD COIN AND GOLD BULLION.

The value of the fine gold bars furnished to the trade in exchange for gold coin and bullion monthly by the United States Mint at Philadelphia and assay office at New York for the calendar year 1909 was as follows:

Months.	Exchanged for gold coin.			Exchanged for gold bullion.		
	Philadelphia.	New York.	Total.	Philadelphia.	New York.	Total.
January	$2,584,987.70	$2,414,110.61	$4,999,098.31	$26,482.15	$328,414.92	$354,897.07
February	583,972.58	1,398,475.18	1,982,447.76	15,806.85	272,582.68	288,389.53
March	705,446.78	4,012,155.33	4,717,602.11	23,207.62	345,614.74	368,822.36
April	666,837.54	3,386,415.12	4,053,252.66	22,691.62	344,506.66	367,198.28
May	648,203.45	4,361,144.81	5,009,348.26	20,235.79	281,923.87	302,159.66
June	555,676.89	3,379,877.72	3,935,554.61	34,521.33	288,440.45	322,961.78
July	545,253.37	1,367,348.60	1,912,601.97	20,058.87	291,208.92	311,267.79
August	619,032.08	1,952,052.34	2,571,084.42	24,526.51	234,898.36	259,424.87
September	563,362.94	2,418,518.20	2,981,881.14	19,616.85	276,870.00	296,486.85
October	607,248.73	2,656,052.18	3,263,300.91	27,398.67	319,621.32	347,019.99
November	600,735.38	2,198,803.73	2,799,539.11	16,794.45	336,397.87	353,192.32
December	351,628.25	1,754,317.54	2,105,945.79	23,727.34	304,643.37	328,370.71
Total	9,032,385.69	31,299,271.36	40,331,657.05	275,068.05	3,625,123.16	3,900,191.21

THE WORLD'S INDUSTRIAL CONSUMPTION.

Since 1893 this bureau has endeavored to obtain, through the United States representatives abroad, official estimates from the various countries of the world of the consumption of precious metals in the arts and industries.

The results of the inquiries, though at times incomplete, are considered sufficiently full and accurate to encourage renewed efforts.

The interrogatories sent out by this bureau for 1909 were as follows:

"What was the estimated weight of fine gold and silver used in the industrial arts during the calendar year 1909? What amount of this was new bullion, what amount old material, and what amount coins?"

The following verbatim replies of all countries as to their consumption of precious metals in the arts during 1909 are submitted, together with such other matter relative to the question as was assumed to be of value:

Australasia.—"Commonwealth of Australia: Gold, about 45,104 fine ounces (no details as to classification). Silver, no information available." This weight is equivalent to $932,382 in United States currency.

Austria-Hungary.—Austria:

Material used.	Gold.	Silver.
	Fine ounces.	*Fine ounces.*
New bullion	2,166.742	64,699.886
Old plate, jewelry, etc	332.053	3,071.016
Domestic coin	1,751.124	1,985.756
Foreign coin	1,862.355	948.487
Total	6,112.274	70,705.145

Eliminating the amount of old material in the above table, the amount of new material used in the industrial arts in Austria during 1909 was 5,780.221 fine ounces of gold, the value of which is $119,488, and 67,634.129 fine ounces of silver.

Hungary.—The following articles were delivered for stamping at the Royal Hungarian Bureau for the stamping of metals during the calendar year 1909:

	Kilograms.
A. Domestic goods:	
(1) Gold ware	2,857.839
(2) Silverware	15,562.711
(3) Gold-plated wire	604.650
(4) Silver wire	572.744
B. Foreign goods:	
(1) Various gold ware	397.135
(2) Diversified silverware	2,609.700
(3) Gold watches	219.400
(4) Silver watches	1,016.740
(5) Gold-plated wire	2.150

For the striking of metals in the Royal Hungarian Bureau for the stamping and melting of metals, there were used during 1909, 2.07092 kilograms of gold and 24.4593 kilograms of silver. Assuming that these kilograms are fine metal, the total kilograms of gold—4,083.24492 are equivalent to 131,276.324 fine ounces, of the value of $2,713,722, and the total kilograms of silver—19,786.3543, are equivalent to 636,131.291 fine ounces. The total value of the gold used by Austria and Hungary was $2,833,210 and the total fine ounces of silver, 703,765.

Belgium.—"Since the law of June 5, 1868, authorizing the free exercise of the gold and silversmith trades, it is impossible to ascertain the weight of gold and silver used in the industrial arts."

As Belgium has made no estimate of the amounts of precious metals used in the arts since 1905, the figures for that year are repeated for 1909, viz: Gold, $1,500,000; silver, 1,000,000 fine ounces.

Canada:

Material used.	Gold.	Silver.
		Ounces.
New bullion (0.999 fine)	$1,350,000	563,000
Old plate, jewelry, etc	20,000	150,000
Foreign coin	100,000	.....
Total	1,470,000	713,000

NOTE.—The Director of the Mint states that he feels there is more accuracy in the bullion, fine, than in the scrap of the second item under each head of the gold and silver.

The new material used in the arts in the above table was valued at $1,450,000 for the gold, and the amount of fine ounces for the silver was 563,000.

China.—"Canton: Unable to ascertain weight, but silver bullion, gold double eagles, sovereigns, and yen, and domestic copper coins were used."

Fohkien Province:

Material used.	Gold (about).	Silver (about).
	Pounds.	*Pounds.*
New bullion	104	267
Old plate, jewelry, etc	416	3,900
Total	520	4,167

Shanghai (consular district):

Material used.	Gold.	Silver.
	Fine ounces.	*Fine ounces.*
New bullion	2,152.00	145,630
Old plate, jewelry, etc	24,614.53	84,614
Domestic coin	.....	1,200,000
Foreign coin	684.00	.....
Total	27,450.53	1,430,244

As returns have been received from but two Provinces of China the estimate for that country is included in the estimate for the total Asiatic countries in the table at the end of this article.

Finland.—"New bullion stamped at Bureau of Control, 252,850 grams of gold, and 233,503 metric 'lods' (1 'lod' is equal to 10 grams) of silver."

The above weight of gold equals 8,129.127 ounces fine, having a value of $168,044 and the grams of silver equal 75,071 ounces fine.

France.—"Gold, 36,000 kilograms: silver, 338,000 kilograms."

The gold is equal to 1,157,400 ounces fine and the silver to 10,866,700. It has been the custom in this bureau to deduct 25 per cent of the gold and 15 per cent of the silver reported by France as having been used in the arts and industries for the amount of old material so used. Following this custom the new material used during 1909 amounted to 868,050 ounces fine of gold, valued at $17,944,186 and 9,236,695 ounces fine of silver.

Germany.—The amount of gold employed in the industrial arts during the years 1906 and 1907 was as follows:

Material used.	1906	1907
	Marks.	*Marks.*
German gold coin	45,685,000	49,371,000
Foreign gold coin	2,540,000	2,026,000
Fine gold	35,506,000	40,219,000
Total	83,731,000	91,616,000

The value in United States money of 91,616,000 marks (the value of the new material used in the arts and industries in the year 1907) is $21,804,608. As this bureau has not received any information relative to the estimated amount of silver used, the estimate for 1905, the latest received, is repeated, viz, 6,500,000 ounces fine.

Great Britain.—Dr. T. K. Rose, chemist and assayer of the royal mint in London, reports that the gold and silver wares presented for assay and stamping from July 1, 1908, to June 30, 1909, at Birmingham, Sheffield, and Chester amounted to 470,259 ounces for gold, and 5,996,657 ounces for silver. Heretofore this bureau has accepted this material at British standard; the report for this year states that "the amount of fine gold contained in these wares was 245,158 ounces;" assuming that 25 per cent of this amount was from old material, the value of the new material is $3,800,889. Deducting 25 per cent for old material of the silver and assuming that it is 0.925 fine (British standard), gives 4,160,181 ounces fine.

These are the actual figures showing the amounts contained in wares presented to Government institutions for assaying and stamping, but must not be considered as the total amounts consumed in the arts during the calendar year 1909.

No information has been received regarding the 1909 consumption.

Dr. T. K. Rose, in a paper read by him before the Chemical, Metallurgical, and Mining Society of South Africa, Feburary 20, 1909, states that "the amount of English gold coin melted annually for use in the industrial arts is estimated at £500,000 at least, its only known use being for the manufacture of wedding rings."

He also states that "judging from returns of the manufacture of jewelry to which I have had access, the annual consumption in 1906 and 1907 was certainly higher than from 1903 to 1905." He further states, in explaining a discrepancy of nearly £4,000,000 in British gold coin "which is mostly readily accounted for by assuming that the amount of British gold melted for use in the arts was underestimated in 1903 and that it really amounts to £1,500,000 per annum. The disappearance of immense quantities of British gold coin has certainly never been fully and satisfactorily explained."

In accordance with the statements of Dr. Rose, and takinginto consideration the increases in the amounts of gold and silver used in the arts and industries of France, Germany, and the United States in recent years, this bureau estimates as a corresponding increase for Great Britain that the amount of gold so used was valued at $20,000,000 and for silver 10,000,000 fine ounces.

Honduras.—"Gold, 4,000 ounces, silver 36,000 ounces (estimated)."

The value of this gold, $82,687, and the fine ounces of silver are included in the table under "Other European and American countries."

India.—(British.) No estimate has been received regarding the uses in the arts and industries of the precious metals during 1909, but it is understood that the uncoined gold imported into India is all used for this purpose. This amounted in 1909 to $27,251,634.

Italy.—"The working of precious materials not being governed by provisions of law, and the free régime being in existence, there are no reliable elements for giving answer."

In the absence of any official figures for 1909 the figures for 1907, the latest received, viz, $3,000,000 for gold and 2,000,000 fine ounces for silver, are repeated.

Kongo.—"Boma: Gold (foreign coin), 10 kilograms (English). Silver, without basis."

This weight equals 294.719 ounces fine, valued at $6,092. The amount is included in the table under "Other countries."

Madagascar:

Materials used.	Gold.
	Fine ounces.
New bullion	232.919
Old plate, jewelry, etc	168.062
Foreign coin	325.799
Total	726.780

Eliminating the old material in the above table the fine ounces, 558.718, are equivalent to $11,550, which amount is included in "Other countries" in the table.

Netherlands.—"Gold, 31,734 fine ounces; silver, 472,228 fine ounces. (Can not be specified)." The fine ounces of gold are valued at $656,000.

Russia:

Materials used.	Gold.	Silver.
	Kilograms.	*Kilograms.*
New bullion, old plate, etc	4,101.80	132,956.59

(Further there were produced for testing and stamping, 56,949 gold and 139,525 silver watches.)

This weight represents 131,872.870 ounces fine gold. Deducting 25 per cent for old material there remains for new material used 98,905 ounces, valued at $2,044,548, and deducting 25 per cent from the silver for old material leaves 3,205,916 ounces for new material used.

Sweden.—Gold, 24,000 fine ounces; silver, 225,000 fine ounces. (Material can not be specified).

The weight of gold is equivalent to $496,124.

Switzerland.—"Gold, 10,700 kilograms fine; silver, 80,500 kilograms fine. (It is impossible to specify, even approximately, the amount, referring to each article stamped.)"

The weight in fine ounces of the above kilograms is 344,005 for the gold, valued at $7,111,214, and 2,588,075 for the silver.

Other European and American countries.—This bureau estimates that for the other European and American countries not mentioned

in the above text which are entitled to some estimate, the gold used was valued at $2,317,700 and the silver at 3,309,200 fine ounces.

Asiatic countries.—It is estimated that there were consumed in the arts and industries in the Asiatic countries $30,000,000 worth of gold and 44,000,000 fine ounces of silver. This estimate is based upon their net absorption of the metals, less the amounts known to have been used for coinage.

The world.—Although the data for an estimate upon the world's consumption of the precious metals in the arts and industries are confessedly incomplete and unsatisfactory, we venture upon the strength of the foregoing information to submit the following estimate:

Countries.	Gold (value).	Silver.
		Fine ounces.
United States	$30,248,200	20,959,200
Germany	21,804,600	6,500,000
Great Britain	20,000,000	10,000,000
France	17,944,200	9,236,700
Switzerland	7,111,200	2,588,100
Italy	3,000,000	2,000,000
Austria-Hungary	2,833,200	703,800
Russia	2,044,500	3,205,900
Belgium	1,500,000	1,000,000
Canada	1,450,000	563,000
Australasia	932,400	.....
Netherlands	656,000	472,200
Sweden	496,100	225,000
Finland	168,000	75,100
Other European and American countries	2,317,700	3,309,200
Asiatic countries	30,000,000	44,000,000
Total	142,506,100	104,838,200

THE WORLD'S PRODUCTION OF GOLD AND SILVER IN 1909.

GOLD.

The world's production of gold for 1909 was 21,982,713 ounces fine, valued at $454,422,900, while the production for 1908 was 21,430,438 ounces fine, valued at $443,006,200, showing an increased product in 1909 of 552,275 fine ounces of the value of $11,416,700.

SILVER.

The silver product for 1909 was 211,215,633 ounces fine, while that of 1908 was 203,236,861 ounces fine, an increase in 1909 of 7,978,772 fine ounces.

The table following shows the increase and decrease in production for each country in 1909 compared with 1908:

INCREASE AND DECREASE DURING 1909 AS COMPARED WITH 1908.

Countries.	Gold.		Silver.	
	Increase in 1909.	Decrease in 1909.	Increase in 1909.	Decrease in 1909.
	Fine ounces.	*Fine ounces.*	*Fine ounces.*	*Fine ounces.*
United States	247,361		2,280,700	
Canada		2,521	5,772,357	
Mexico	71,190		278,405	
Africa	216,145			196,018
Australasia		112,203		815,815
Russia	209,416			
Austria-Hungary		25,508		771,273
Germany	214		361,357	
Norway				13,053
Sweden		211		6,355
Italy		1,083	111,772	
Spain	140		591,417	
Great Britain	2,091		324,492	
Servia	4,380		11,226	
Argentina	1,385		137,998	
Bolivia and Chile	7,067			257,963
Colombia		11,971		943,835
Ecuador		3,672		
Brazil	2,724			
Venezuela	12,392		100,332	
Guiana, British		10,419		
Guiana, Dutch		2,030		
Guiana, French	401			
Central America		18,805	833,463	
Japan	14,310		285,538	
China	34,094			
Korea		50,983		
India, British		11,605		
East Indies (British)	1,740			
East Indies (Dutch)		21,764		105,973
Total	825,050	272,775	11,089,057	3,110,285
Net increase	552,275		7,978,772	

The following table shows, by calendar years, the production and value of gold and silver in the world since 1860:

PRODUCTION OF GOLD AND SILVER IN THE WORLD SINCE 1860.

[The annual production of 1860 to 1872 is obtained from 5-year period estimates, compiled by Dr. Adolph Soetbeer. Since 1872 the estimates are those of the Bureau of the Mint.]

Calendar years.	Gold.		Silver.	
	Fine ounces.	Value.	Fine ounces.	Commercial value.
1860	6,486,262	$134,083,000	29,095,428	$39,337,000
1861	5,949,582	122,989,000	35,401,972	46,191,000
1862	5,949,582	122,989,000	35,401,972	47,651,000
1863	5,949,582	122,989,000	35,401,972	47,616,000
1864	5,949,582	122,989,000	35,401,972	47,616,000
1865	5,949,582	122,989,000	35,401,972	47,368,000
1866	6,270,086	129,614,000	43,051,583	57,646,000
1867	6,270,086	129,614,000	43,051,583	57,173,000
1868	6,270,086	129,614,000	43,051,583	57,086,000
1869	6,270,086	129,614,000	43,051,583	57,043,000
1870	6,270,086	129,614,000	43,051,583	57,173,000
1871	5,591,014	115,577,000	63,317,014	83,958,000
1872	5,591,014	115,577,000	63,317,014	83,705,000
Total	78,766,630	1,628,252,000	547,997,231	729,563,000
1873	4,653,675	96,200,000	63,267,187	82,120,800
1874	4,390,031	90,750,000	55,300,781	70,674,400
1875	4,716,563	97,500,000	62,261,719	77,578,100
1876	5,016,488	103,700,000	67,753,125	78,322,600
1877	5,512,196	113,947,200	62,679,916	75,278,600
1878	5,761,114	119,092,800	73,385,451	84,540,000
1879	5,262,174	108,778,800	74,383,495	83,532,700
1880	5,148,880	106,436,800	74,795,273	85,640,600
1881	4,983,742	103,023,100	79,020,872	89,925,700
1882	4,934,086	101,996,600	86,472,091	98,232,300
1883	4,614,588	95,392,000	89,175,023	98,984,300
1884	4,921,169	101,729,600	81,567,801	90,785,000
1885	5,245,572	108,435,600	91,609,959	97,518,800
1886	5,135,679	106,163,900	93,297,290	92,793,500
1887	5,116,861	105,774,900	96,123,586	94,031,000
1888	5,330,775	110,196,900	108,827,606	102,185,900
1889	5,973,790	123,489,200	120,213,611	112,414,100
1890	5,749,306	118,848,700	126,095,062	131,937,000
1891	6,320,194	130,650,000	137,170,919	135,500,200
1892	7,094,266	146,651,500	153,151,762	133,404,400
1893	7,618,811	157,494,800	165,472,621	129,119,900
1894	8,764,362	181,175,600	164,610,394	104,493,000
1895	9,615,190	198,763,600	167,500,960	109,545,600
1896	9,783,914	202,251,600	157,061,370	105,859,300
1897	11,420,068	236,073,700	160,421,082	96,252,700
1898	13,877,806	286,879,700	169,055,253	99,742,600
1899	14,837,775	306,724,100	168,337,453	101,002,600
1900	12,315,135	254,576,300	173,591,364	107,626,400
1901	12,625,527	260,992,900	173,011,283	103,806,700
1902	14,354,680	296,737,600	162,763,483	86,264,700
1903	15,852,620	327,702,700	167,689,322	90,552,200
1904	16,804,372	347,377,200	164,195,266	95,233,300
1905	18,396,451	380,288,700	172,317,688	105,113,700
1906	19,471,080	402,503,000	165,054,497	111,721,100
1907	19,977,260	412,966,600	184,206,984	121,577,100
1908	21,430,438	443,006,200	203,236,861	108,711,500
1909	21,982,713	454,422,900	211,215,633	109,832,200
Total	355,009,351	7,338,694,800	4,726,294,043	3,701,854,600
Grand total	433,775,981	8,966,946,800	5,274,291,274	4,431,417,600

WORLD'S COINAGE.

In the Appendix will be found a table, revised from the latest information received, exhibiting the coinages of the various countries of the world during the calendar years 1907, 1908, and 1909.

While the figures in the following table represent, as accurately as the bureau has been able to ascertain, the total value of and the fine ounces consumed in the gold and silver coinage of the world since 1873, they do not accurately represent the value of the coinage from new material alone, but include the value of the recoinage of foreign and domestic coins and that derived from old material, plate, jewelry, etc., melted and used in coinage. Many foreign Governments in their reports to the bureau failed to separate the values of the coinage derived from these various sources.

COINAGE OF GOLD AND SILVER OF THE MINTS OF THE WORLD FOR THE CALENDAR YEARS SINCE 1873.

Calendar years.	Gold.		Silver.	
	Fine ounces.	Value.	Fine ounces.	Coining value.
1873	12,462,890	$257,630,802	101,741,421	$131,544,464
1874	6,568,279	135,778,387	79,610,875	102,931,232
1875	9,480,892	195,987,428	92,747,118	119,915,467
1876	10,309,645	213,119,278	97,899,525	126,577,164
1877	9,753,196	201,616,466	88,449,796	114,359,332
1878	9,113,202	188,386,611	124,671,870	161,191,913
1879	4,390,167	90,752,811	81,124,555	104,888,313
1880	7,242,951	149,725,081	65,442,074	84,611,974
1881	7,111,864	147,015,275	83,539,051	108,010,086
1882	4,822,851	99,697,170	85,685,996	110,785,934
1883	5,071,882	104,845,114	84,541,904	109,306,705
1884	4,810,061	99,432,795	74,120,127	95,832,084
1885	4,632,273	95,757,582	98,044,475	126,764,574
1886	4,578,310	94,642,070	96,566,844	124,854,101
1887	6,046,510	124,992,465	126,388,502	163,411,397
1888	6,522,346	134,828,855	104,354,000	134,922,344
1889	8,170,611	168,901,519	107,788,256	139,362,595
1890	7,219,725	149,244,965	117,789,228	152,293,144
1891	5,782,463	119,534,122	106,962,049	138,294,367
1892	8,343,387	172,473,124	120,282,947	155,517,347
1893	11,243,342	232,420,517	106,697,783	137,952,690
1894	11,025,680	227,921,032	87,472,523	113,095,788
1895	11,178,855	231,087,438	98,128,832	126,873,642
1896	9,476,639	195,899,517	123,394,239	159,540,027
1897	21,174,850	437,722,992	129,775,082	167,790,006
1898	19,131,244	395,477,905	115,461,020	149,282,936
1899	22,548,101	466,110,614	128,566,167	166,226,964
1900	17,170,053	354,936,497	143,362,948	185,358,156
1901	12,001,537	248,093,787	107,439,666	138,911,891
1902	10,662,098	220,405,125	149,826,725	193,715,362
1903	11,634,166	240,499,547	161,159,508	211,795,829
1904	22,031,285	455,427,085	136,518,406	176,508,646
1905	11,898,037	245,954,257	134,062,314	173,333,093
1906	17,721,058	366,326,788	120,339,501	155,590,466
1907	19,921,014	411,803,902	171,561,490	221,816,876
1908	15,828,573	327,205,649	151,352,824	195,688,499
1909	15,153,116	313,242,714	87,728,951	113,427,331
Total	402,233,153	8,314,897,286	4,090,598,592	5,292,282,739

PART II.

THE COLLECTION OF THE STATISTICS OF THE PRODUCTION OF GOLD AND SILVER IN THE UNITED STATES IS NOW MADE BY THE BUREAU OF THE MINT IN CONJUNCTION WITH THE GEOLOGICAL SURVEY. THE FOLLOWING REVIEW OF THE MINING OF GOLD AND SILVER IN THE DIFFERENT PRODUCING STATES AND TERRITORIES HAS BEEN PREPARED BY THE AGENTS OF THE GEOLOGICAL SURVEY LOCATED IN THE RESPECTIVE STATES AND TERRITORIES.

REVIEW OF THE MINING OF GOLD AND SILVER.

ALASKA.

As in previous years, the gold production of Alaska in 1909 was chiefly from three regions, which, ranged in order of their importance, are as follows: Fairbanks, Seward Peninsula, and southeastern Alaska. Nearly half of the gold came from Fairbanks placers, while the Seward Peninsula placers and the lode mines of southeastern Alaska each should be credited with a little over one-fifth. The balance came from the smaller districts, which are widely distributed in the Territory.

Among the most important features of the mining industry was the great activity in prospecting auriferous lodes. In the Juneau district there was much accomplished in developing ore bodies which are not yet productive. Important lode discoveries were also made in the Port Valdez region, on the Kenai Peninsula, and in the Fairbanks district.

The time is rapidly approaching when the output from the gold placers will decrease unless means are devised for exploiting the extensive bodies of auriferous gravels which can not be mined by the present crude methods. Considerable progress was made in the installing of dredges. To a limited extent this is also true of the Fortymile district. In the other Yukon camps there was little progress in the matter of large installations.

A new movement of prospectors was started into the Innoko region by the discovery of gold in the Iditarod Basin. This district promises to become a gold producer, but the extent and richness of the deposits have not yet been determined.

ARIZONA.

The figures of metal output in Arizona for 1909 suggest that the mining industry was, in general, in a progressive condition. The totals indicate that there were increases in all metals except silver, and that unusually large increases were recorded in copper and zinc. Although the copper output increased more than 6 per cent, Arizona, which was first in production in the United States in 1908, was second to Montana in 1909. The gold production was decidedly greater than in 1908, and may be credited to siliceous ores, as that from copper ores decreased. Most of the gold came from Cochise, Mohave, Yavapai, and Yuma Counties. The greatest difference was in the production of Yuma County, while other increases were made in Mohave, Pinal, and Maricopa Counties. Yavapai County fell short of the usual gold output. Silver decreased for the State and in every county except Yuma, Mohave, and Pinal Counties. Copper increased generally, the only important decrease being in Graham County. There was a slight increase in output of lead, the production being small except in Cochise County. Zinc ore was marketed from Cochise and Mohave Counties. The large increase was due to shipments from

the Golconda mine at Cerbat. In spite of decreases in Graham and Yavapai Counties, the State increased the value of the total output by more than $2,000,000.

Only 1 per cent of the gold output was the result of placer operations, and although there was much written concerning dredge operation and equipment, no production was recorded from that source. In Mohave County a dredge was constructed to operate on the Colorado River, but was a failure. Dredges were also reported to be in course of construction for the Speck Mining Co. and Prescott Dredge Co., on Lynx Creek and the Arizona Gold Dredge Co. on Cherry Creek.

With the exception of the Humboldt plant, the smelting establishments of the State were not only active, but adding equipment to increase production and successfully working toward a reduction of costs.

Mining in Cochise County was in a progressive condition, particularly in the Warren district around Bisbee, and the output of copper was greatly increased. The Denn-Arizona and Wolverine & Arizona became producers. The Tombstone mines suffered from an excessive influx of water, resulting in a diminished output of gold and silver. A great amount of work was done in the camp of Courtland in the Turquoise district. Railroad connections were completed during the latter part of the year and shipments made to Douglas and El Paso. The largest shippers were the Great Western mine and the Germania mine, belonging to the Calumet & Arizona Co. At Johnson, in Cochise district, the Arizona United Mines Co. operated a new 125-ton matting plant.

In Gila County more copper was produced than in 1908, but the output of other metals decreased. There were no new large producers added to the list, but an unusual amount of activity was expended on the development of large deposits of low-grade copper ore. This was particularly true at the Miami property, 10 miles from Globe. A three-compartment shaft was being sunk, railroad being constructed to Globe, and preparations made for the construction of a concentrator. Similar development was pursued at the Inspiration property. A few miles northeast of Globe, the Arizona Commercial Copper Co. completed a 500-ton matting plant in October and shipped the product to Globe. In Gold Gulch, 15 miles west of Globe, a concentrator was being erected by the Duquesne Mining Co.

Graham County diminished the copper output by over 7 per cent, but the gold production was somewhat more than in the preceding year. Figures of production from the Detroit differed little from the past, but those from the Arizona Copper Co. and Shannon were less. Other producers of note were the Clifton Copper mines, Standard Copper mines, Standard Consolidated, and New England & Clifton Cos. A 10-stamp mill was erected at the Gold Belt property, near Clifton.

Work was resumed at the Vulture mine in Maricopa County, where a 10-stamp mill was in operation.

Mohave County produced more gold and zinc than in 1908, but less silver, copper, and lead. At the Gold Roads mine a 40-stamp mill was in course of construction. The plant, which is driven by electricity, began operations in October. The Tom Reed was the largest gold producer in the county, the old 10-stamp mill being run, while a new 20-stamp amalgamation and cyanide plant was being

built. The Bi-Metal mine, south of Kingman, also operated a 10-stamp mill and shipped bullion. The Golconda mine became a large producer of rich zinc ore, shipping as much as 80 tons per week to Kansas smelters. The Treasure Hill Mining Co. shipped some ore rich in gold and silver and containing lead.

In Pima County, which had many shippers, the largest mines were the Imperial, Twin Butte, Helvetia, and El Tiro. The Sasco smelter was treating 750 tons of copper ore per day from its Imperial mine principally, but did a custom business, buying siliceous ores from its allied companies, the Congress, Poland, and Tombstone.

There were increases in production in Pinal County except in lead. The largest producers were the Mohawk mine, a gold producer, and the Ray Consolidated Copper Co., which made initial shipments of copper concentrate. Interesting work was done by churn drills on the copper deposits at Ray. Many million tons of low-grade ore were thus assured. The foundation for a large concentrator was being built in September.

Santa Cruz County recorded small increases except in silver and lead. The Augusta group, in the Patagonia district, became an important shipper.

Yavapai County slightly increased the output of copper and lead, but decidedly decreased the gold output. The largest producers were the United Verde, Poland, Tiger, Ideal, Congress, and Monica. New mills were erected at the Etta, Sunnyside, Mammoth, and the Arizona Copper-Gold Mining Co.'s mine in Cherry Creek district. The cost of operation in some of the large mines of the county has been greatly reduced by the use of electricity generated by the Arizona Power Co. on Fossil Creek.

Yuma County made a good showing in the production of all metals, and especially increased its gold output. The Castle Dome district supplied the lead ore, Ellsworth, Planet, and Plomosa districts the copper ore, and Kofa the increased gold and silver output. The Little Butte, at Bouse, shipped much copper ore, and the King of Arizona and the Golden Star mines supplied the greater part of the gold. A 450-ton plant, with 2 convertor stands, was constructed for the Clara mine at Swansea, 20 miles from Bouse.

CALIFORNIA.

For the past few years the gold production of California has shown some annual increase, which has been mainly due to the enlarged number of gold dredges in operation, but to some extent, also, by reason of augmented output of the quartz mines. Both these factors form the most important feature; but an increase is also apparent in the yield of the combined hydraulic, drift, and surface placers. In 1909 the entire gold output of the State was over $1,700,000 more than in 1908 and was considerably past the twenty-million mark. Moreover, it is evident that interest in the gold-mining industry in the State is increasing and that more capital is being invested than has been the case in some years. In 1909 the increase of gold output over that of 1908 was 9 per cent. Fifty-three per cent of the gold yield for 1909 was derived from quartz-mining operations and 47 per cent from placer mining. The placer gold yield of the State in 1909 was over $1,250,000 more than it was in 1908, and 75 per cent of the placer yield was derived from dredging operations. The dredges produced 35 per cent of the total gold output from all sources, and their yield shows an

increase of 10 per cent over the gold obtained from the same source in 1908. The drift, hydraulic, and surface placers combined produced 25 per cent of the placer gold and 12 per cent of the total gold yield of the State in 1909.

These percentages show the progress of a very marked change in the conditions of gold mining in California during the past few years. As late as the year 1907 the deep mines were producing 59 per cent of the total gold yield, and the combined placers were yielding 41 per cent. In that year the proportion of gold obtained by the dredges to the total gold from all sources was 30 per cent. Moreover, the dredges in 1907 obtained 71 per cent of the gold derived from all placers. It will be noted by comparing these percentages that not only are the combined placers, including dredges, increasing their proportion of gold output as compared with the deep-mine yield and the total gold yield, but that the dredges are also increasing their importance as a factor in output of placer gold, as well as in the total gold yield of the State from all sources.

The total amount of gold derived from dredging operations in California in 1909 was $7,194,907, which is $658,718 more than was obtained from the same source in 1908. Dredges are being worked in the various fields in the counties of Butte, Calaveras, Merced, Sacramento, Stanislaus, Shasta, Siskiyou, and Yuba. The most important fields, where the largest numbers of machines are at work and where they are of the largest capacity, are the Feather River, at Oroville, Butte County; the Yuba River, near Marysville, Yuba County; and the American River, at Folsom, Sacramento County. The most productive of these fields is that in Butte County, followed in order by those in Yuba and Sacramento Counties. The Butte County field is showing some diminution in annual yield, while the fields in Yuba and Sacramento Counties are both showing a material increase. It seems probable that in a few years the Yuba County dredging field will be the most productive in the State.

There are now 31 counties in California which are producing more or less gold annually. Seven of these counties are producing yearly over $1,000,000 in gold each, and four of them over $2,000,000. Butte is the leading county of the State in gold production and is that in which the largest number of dredges is in operation. Next in rank is Nevada County, where quartz mining is the principal industry. Yuba County, also the seat of extensive gold-dredging operations, is third in order, followed by Amador County, where deep-mining operations are carried on upon the mother lode. Shasta County is fifth in rank of gold production. In that county are extensive copper mines where the quartz ores are in demand for fluxing purposes and where there are also several extensive deep mines with their own reduction works. Sacramento County, with its extensive dredging field at Folsom, ranks sixth in gold production, and Calaveras, one of the mother-lode counties, is seventh in rank.

The increase in silver production in California in 1909 was 11.6 per cent above the output of 1908. The leading silver producer among the counties is Shasta County, where the copper ores predominate and smelters are in operation. Following in order of silver production are the counties of Kern, Calaveras, Mono, Nevada, Amador, and Inyo, the others producing lesser amounts.

The quartz-mining industry of the State is in a generally prosperous condition, with no material changes to be noted. Deeper mining is being carried on than ever before, especially in the mother-lode counties. The increase in gold output in 1909 over that of 1908 from the quartz mines was but 3 per cent; but even that shows some progress. Some very rich veins have been discovered in the old reopened mines in Sierra County, and there is considerable activity in that section. In Nevada County the long-worked deep mines continue productive and are even making better yields than formerly. In the mother-lode counties quartz mining continues its regular course, with indications of improvement in the advent of new capital provided by men who have of late been making fortunes in the oil fields of the State. In the northwestern counties of Sierra and Trinity more attention is being paid to deep mining than ever before, though these counties are usually best known for their auriferous gravel deposits.

Some increase is shown in the output of the drift mines, though this is mainly due to the phenomenal yield of one property. Hydraulic mining shows little advance; but there is a larger yield apparent from the surface placers.

Gold Dredging in California.

By Louis E. Aubury, State Mineralogist.

The construction of the first practical gold dredge in California, 1898, marked the beginning of a new era in gold mining, and which branch of the industry has probably, since its inception, assumed greater proportions in this State than elsewhere. With the rapid advances made in gold dredging and the gradual increase of gold output, have likewise come the improvements and enlarged construction, which make the California gold dredge to-day the model after which other countries pattern.

The gold industry of this State has received a new impetus, and the production has advanced approximately three and a half million dollars above the average output of two years ago. Should other forms of gold mining maintain their average two years from now, California will probably again recover its rank as the leading gold-producing State in the Union, and will undoubtedly maintain its lead for many years to come. Sufficient area has already been proven in the gold-dredging fields to warrant this conclusion. While it has been contended in some quarters that the limits of the dredging areas have already been fairly well defined, and that the large interests and consolidations have a large portion of the fields controlled, new companies are continually being organized for the purpose of exploiting tracts which have been passed over, or others which were prospected a few years ago and "turned down" as being too low grade to operate profitably. With the advent of the modern dredge handling 250,000 to 300,000 cubic yards of gravel per month, at a cost of from 2¼ to 3 cents per cubic yard, conditions have changed materially. The same evolution with dredge mining has occurred as with gold-quartz mining in this State, and the question has resolved itself into one of capacity. The present dredge, large as it is, has apparently not yet reached its limits.

A new factor has entered into dredging in California which adds largely to the profits of some of the companies; that is, utilizing the tailings from the dredges. The tailings are broken in immense crushers and the product utilized for macadam for roads and rubble for concrete. What has been termed by some as "the unsightly piles of gravel" have been made to serve various good purposes, and, at the same time, furnish the best class of material at a minimum cost to the consumer.

Several protests have been made in the past against permitting dredge mining. These protests have been made without an adequate knowledge of actual conditions, it being claimed that the débris from the dredges was allowed to flow into the river channels to their deteriment, and the whole industry was consequently condemned. Investigation showed that in a few instances dredging was being carried on in the streams and some damage was undoubtedly done. Outside of these instances, however, the balance of the dredges have either operated in landlocked sections, away from the streams, or were depositing the tailings on the banks of the streams, deepening the channels and improving them.

Some complaint has also been made of the total destruction of the soil where dredges operate. Regarding this matter, and as will afterwards be shown in this report, but a comparatively small amount of arable land is included in that which has been or will be dredged.

On the other hand, reclamation projects are now under way which are being carried on by some of the dredging companies, which will restore to cultivation hundreds of acres of swamp or overflowed lands, and which, were it not for the enterprise of these companies, would remain waste or unproductive for years to come. These reclaimed lands will far more than offset those which some claim will be irreparably ruined. The so-called "destroyed lands," which at one time were productive, had, to a large extent, been made worthless for agriculture, viticulture, or horticulture by their former owners before a bucket had turned them over. The mineral ingredient necessary to plant life had been exhausted from the surface soil, and it was practically impossible for the farmers to raise a profitable crop from them. To a certain extent dredging these lands has reclaimed them. Trees or vines planted since the lands were dredged give ample evidence of the fertility of the ground, and serve to illustrate the improved nature of the same.

In the dredging sections lands were purchased by dredging companies for $25 per acre, and the same land after dredging, with its cobble piles, was sold for $100 per acre for the gravel contents. After the gravel has been removed or the lands leveled, they can again be utilized, if necessary, for farming lands.

The dredging industry in California, while adding annually millions of dollars' worth of gold to our State's products, at the same time dispenses immense sums through the various channels of trade, and adds materially to our prosperity. It will continue to do so for at least the next decade, and as actual conditions affecting the industry become more generally known and proper restrictions are maintained it will be more appreciated and the objections which have been raised will disappear.

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California Gold Dredging.

By Charles Janin and W. B. Winston.

In California dredging companies determine yardage handled by bank measurement ahead of the dredge. When dredges are working in swift-running rivers, as in some foreign countries, it is difficult to determine the yardage handled with the same degree of accuracy that can be computed from careful bank measurement. The method generally employed in such cases is to count the number of buckets dumping within a stated time, making some allowance for buckets only partly filled. Should too large a yardage be figured, it is obvious that the estimated cost per cubic yard will be proportionately too low. Working cost can not be fairly used in comparison unless uniform methods of determining them are employed, and also unless operating conditions are somewhat similar. Ground in the same locality often varies to such an extent that dredges similar in construction, design, and bucket capacity and operated under the same management show at times considerable difference in cost per cubic yard. Nearly all dredging companies operating in California keep careful daily records, though on the dredges owned by individuals the practice of keeping exhaustive records of yardage handled and the segregating of items of working cost is not always followed. It may also be said that in some cases working cost is in a great measure a matter of bookkeeping.

The accompanying table showing the operating cost per cubic yard for dredges of different capacity working in California has been compiled from records of various dredging companies, with the endeavor to arrive at the total operating cost per cubic yard with some degree of accuracy. The buckets in use in California vary in capacity from 3 to 13½ cubic feet, and will probably soon be made 15 cubic feet. Dredge operators in California prefer the close-connected bucket line to the open-connected type, and the use of digging spuds to headlines. In practice the close-connected bucket line dumps at the rate of from 18 to 22 buckets per minute, while the open-connected line averages from 12 to 14 buckets per minute. On some of the older boats, where the bucket line has been changed from open to close connected buckets, it is claimed that the yardage handled has been nearly doubled and the expenses per cubic yard decreased.

Capacity of buckets.	Time in commission.	Working period for figures given.	Actual working time during working period.[1]	Yardage handled.	Average depth of gravel.	Operating expenses, in cents, per cubic yard.							Remarks.
						Labor and material.	Electric power.	Water.	Repairs.	General.	Taxes and insurance.	Total expense.	
Cu. ft.			*Hours.*		*Feet.*								
3	.....	1 year.....	2,809	173,655	27.0	2.77	0.90	0.14	4.15	0.78	0.49	9.23	Difficult digging.[2]
3	5 years 9 months...	.....do.....	7,216	458,882	26.9	2.03	.69	.....	3.28	.63	.37	7.00	Working under favorable conditions.
3½	7 years.....	.....do.....	.....	395,316	35.0	2.83	1.53	.228	1.74	1.32	.....	7.67	
3½	6 years 6 months...	.....do.....	7,344	461,882	35.0	2.85	1.48	.195	1.71	1.07	.....	7.32	Compact gravel land subject to overflow.
4	9 years.....	.....do.....	7,057	484,387	20.6	1.83	.89	.31	2.58	.65	.26	6.52	Remodeled dredge, uneven bedrock, in places shallow.
5	6 years.....	.....do.....	.....	481,184	25.0	3.28	1.46	.39	2.97	1.52	.....	9.55	Difficult ground, in places cemented gravel.
5	2 years 5 months...	.....do.....	.....	635,146	27.0	3.14	1.45	.....	2.40	1.28	.41	8.70	Difficult ground.
5	2 years.....	.....do.....	.....	582,891	30.0	3.28	2.02	.32	2.59	1.37	1.00	9.60	Difficult digging.
5	5 years 6 months...	.....do.....	7,344	615,009	25.0	3.06	1.42	.29	3.06	1.14	.....	8.98	Do.
5	4 years 6 months...	.....do.....	.....	812,355	36.0	[3] 2.30	1.08	.....	2.95	.....	.35	6.65	Medium gravel with considerable clay, much brush on topsoil.
5	3 years 5 months...	.....do.....	6,798	1,148,480	25.5	.88	.52	.05	1.77	.25	.35	3.80	Loose gravel, heavy overburden of sandy loam.
5	2 years 5 months...	.....do.....	6,790	1,148,802	29.9	.82	.49	.03	1.89	.25	.16	3.64	Do.
5	4 years 7 months...	.....do.....	6,644	599,614	38.5	1.77	.92	.25	[4] 4.03	.47	.23	7.67	Difficult digging, working against 20-foot bank.
7	9 months 10 days..	.....do.....	5,088	838,885	35.0	1.19	.69	.....	1.22	.26	.17	3.53	Difficult digging, gravel coarse, partly cemented.[7]
7	1 year.....	.....do.....	6,313	1,114,605	27.6	1.21	.62	.03	1.81	.29	.11	4.07	Compact gravel.
7	3 years 9 months...	.....do.....	6,390	1,033,694	26.5	1.08	.64	.14	[5] 2.69	.34	.20	5.09	Compact gravel, heavy digging.
7	2 years 9 months...	.....do.....	6,917	1,017,167	28.1	1.10	.65	.15	[6] 2.19	.28	.14	4.51	Do.
7	3 years.....	.....do.....	6,352	935,322	33.4	1.26	.85	.06	3.06	.31	.34	5.88	Compact gravel.
7	.....do.....	.....do.....	6,700	1,194,146	27.5	1.05	.58	.....	2.78	.32	.37	5.10	Do.
7½	2 years 11 months..	2 years 11 months .	13,464	3,458,229	27.9	.27	.41	.....	1.50	.24	.24	[8] 4.42	Medium compact bench gravel.

[1] Total possible time in year's work, 8,784 hours.
[2] A 7-foot dredge is now working this ground at a profit.
[3] Including general expense, management, etc.
[4] Heavy repair cost due to new tumbler, conveyor belt, repairs to digging ladder, screens, etc.
[5] Replacing tumbler shafts, conveyor belt, and new screen included in repairs.
[6] New steel spud and screen in repairs.
[7] This dredge successfully replaced an open-connected bucket dredge which could not handle ground at a profit.
[8] Depreciation charges included in total expense.

WORKING COSTS OF GOLD DREDGING IN CALIFORNIA—Continued.

Capacity of buckets.	Time in commission.	Working period for figures given.	Actual working time during working period.[1]	Yardage handled.	Average depth of gravel.	Operating expenses, in cents, per cubic yard.							Remarks.
						Labor and material.	Electric power.	Water.	Repairs.	General.	Taxes and insurance.	Total expense.	
Cu. ft.			*Hours.*		*Feet.*								
7½	9 months 6 days...	9 months 6 days...	5,582	944,879	28.9	.95	.58	.....	1.30	.27	.39	3.55	Medium compact gravel with heavy overburden.
7½	2 years 6 months...	1 year.....	6,402	1,369,844	70.2	.99	.77	.....	1.95	.45	.....	4.16	Medium gravel overlain with hydraulic tailing.
7½	.....do.....	.....do.....	6,900	1,281,351	67.8	1.09	.98	.....	2.01	.45	.....	4.53	Do.
8	6 months.....	6 months.....	3,162	583,927	42.5	1.69	.59	.....	1.14	.28	.22	3.92	Light gravel, dredge working against 10-foot bank.
8	4 months 8 days...	4 months 8 days...	2,369	626,624	24.0	(2)	(2)	(2)	(2)	(2)	(2)	2.47	
9	5 months.....	5 months.....	.....	580,310	51.0	(2)	(2)	(2)	(2)	(2)	(2)	4.98	Cemented gravel, difficult digging, 20-foot bank above water level.
13½	8 months.....	8 months.....	4,478	1,803,201	19.0	1.02	.47	.....	.60	.12	.09	2.30	Fine gravel, easy digging.

[1] Total possible time in year's work, 8,784 hours.

[2] Segregated costs not given.

COLORADO.

A comparison of the production of precious metals in Colorado in 1909 with the yield in 1908 shows in the output of gold a material decrease; of silver, a slight decrease; of lead, a slight increase; of copper, a slight decrease; and of zinc a considerable increase.

A review of the sources of the metals shows that there was less gold bullion produced in 1909 and that there was a decrease in the tonnage of gold-bearing siliceous ore, lead-silver ores, and concentrates smelted. There was a marked increase in tonnage of zinc and lead-zinc ores treated at mills and smelters, with a resultant increased output of spelter and also a yield of silver and lead, which helped to maintain the output in these metals.

In reviewing the various metallurgical processes of extracting the metals from the ores at the close of the year 1909 it was clearly emphasized that the smelting industry in Colorado was still on the decline. Of the 15 smelters that have been in operation in Colorado within the last 10 years, 5 were in operation in 1909, and these at about one-half capacity. A new pyritic smelter started toward the close of 1909 and ran for a few months during 1910. During the year the Eilers plant, at Pueblo, was torn down and the Philadelphia plant, in the same city, has been dismantled for some time. The Boston & Colorado Smelting Co. at the close of 1909 informed shippers that their Argo plant would be closed sometime during the first three months of 1910. This plant had been established in Black Hawk, Gilpin County, about 1872, and had been moved to Denver in 1873. The tonnage in ore and concentrates treated at the smelters in Colorado was about one-third the total tonnage sold or treated in the State.

As regards the metallurgical processes used in the mills of the State, the chlorination process began to give way to the cyanide process. The large mills at Colorado City treated about 93 per cent of all the ore from the Cripple Creek district; the smelters treating 7 per cent. Of the ore treated in the mills, about 60 per cent was treated by cyanidation at the Golden Cycle plant, and 40 per cent by a combined process of chlorination and cyanidation at the Portland, Standard, and Union plants. The Portland Co. also was building in 1909 a new mill at the mine, near Victor, which is to use some modification of the cyanide process, and it is rumored that this company may change its Colorado City plant so that it will be entirely a cyanide plant. The mills operating in the Cripple Creek district are all cyanide plants, the most important of which is the Stratton's Independence mill. The process used in this mill is said to depend on a most careful concentration to remove as completely as possible the sulpho-tellurides, followed by cyanidation of the tailing. It is said that a successful method of cyaniding the Gilpin County ores has been discovered.

There has been little prospecting in Colorado in years. The leasing system in mining is in vogue in every district in the State. It is estimated that 65 per cent of the precious metal output in 1909 was from the operations of lessees. Unfortunately, in most cases the leasing system results in the abandonment of continued and systematic development work and the blocking out of ore reserves. In the case of some Cripple Creek mines, however, the leasing system has resulted in maintaining shipments from the upper levels of mines,

whose management has been waiting for the completion of the Roosevelt drainage tunnel rather than operate with the heavy expense of pumping. In some other camps former miners have maintained desultory shipments from mines abandoned by the company. In these cases the miners make little more than wages and continue work mainly because they own homes in the camp.

Cripple Creek district showed a decrease measured by over $1,000,000 from the output of the prosperous year of 1908. Several of the large companies of the district curtailed their product and waited for their mines to be unwatered by the drainage tunnel. The smaller local cyanide plants made a reduced yield in 1909. The Roosevelt drainage tunnel was advanced steadily during the year, and by January 1, 1910, was in over 12,000 feet, with 3,500 feet yet to be completed. The contractors expect to complete the work by January, 1911. As yet no heavy flow of water has been encountered, one small water course giving off about 100 gallons a minute. In December, the United States Reduction & Refining Co. reduced charges for freight and treatment on $10 ore to $4 a ton, with the result that more low-grade ore is being marketed. "High grading" was less prevalent in 1909 than in former years.

Leadville made an increased production in 1909 in gold and zinc. Silver, lead, and copper from this district showed small decreases. There was some mining in the "Downtown district," principally on Fryer and Carbonate Hills, but the bulk of the ore came from the mines on Iron and Breece Hills, and was either siliceous ore or mixed sulphide ores. Of the total tonnage smelted annually in Leadville, only about 6 per cent is true lead oxide ore, about 6 per cent is siliceous ore, about 28 per cent is iron-manganese fluxing ore (carrying a little lead and silver), and 60 per cent is mixed sulphide ores. The advance in the price of spelter during the year was sufficient to increase greatly the shipments of zinc ores. The Yak tunnel had passed the Resurrection No. 2 shaft at the close of the year, and is headed for the Diamond property. The length of the main drive is now 3.32 miles. At the 3-mile mark a lateral was driven for 1,000 feet to the New Monarch mine.

Ouray County made an increased yield in gold and lead as the result of the operations of the Camp Bird mine. This increase in gold in that county was sufficient to cover the decrease in that metal for the State from San Juan and San Miguel Counties. Silver, lead, copper, and zinc yields from the "San Juan" counties showed decreases. The "San Juan" district was heavily handicapped by a very severe spring, and by washouts on the railroad in the summer and fall. Active shipping from Ouray, and more particularly from Silverton and Telluride, was not possible until after March, and Silverton was cut off from railroad transportation by washouts for 46 days in July and August, and again for nearly 40 days in September and October. On September 5 the railroad between Telluride and Placerville was washed out by the bursting of the Trout Lake reservoir, which supplies the Telluride Power Co.'s electric plant. Several companies suspended operations for a short time because of shortage of coal and supplies. Transportation by railroad to Durango (to which point ore and concentrates are shipped) was resumed on October 25, and to the north on December 7, 1909.

Lower Clear Creek County and Gilpin County showed decreased production for 1909. Upper Clear Creek districts increased their yield over those of 1908. The breast of the Newhouse tunnel (which is being driven from Idaho Springs, Clear Creek County, toward the Gunnell mines in Central City, Gilpin County), at the close of the year crossed the line of Nevada Gulch, in Gilpin County, and the tunnel should reach completion before the end of 1910.

The yield from Mineral County (Creede) was slightly increased. In November, 1909, the Humphreys custom mill was started and additional men were put at work on several properties to maintain a supply of ore to keep the mill running. Operators of several other properties, however, have stopped work on company account and have left the mines in charge of lessees.

Boulder County mines were somewhat more active than for several years past, and the output showed an increase over that of 1908. Chaffee County increased its yield in all the metals except gold, despite an increase in placer gold yield. Dolores County production fell off because of lessened operations at Rico. Eagle County mines were active under lease. Park County showed an increased production for all the metals. The yield from Pitkin County (Aspen) again fell off heavily. Both dredges and lode mines increased very considerably the yield of Summit County.

DREDGING IN COLORADO.

The dredges near Breckenridge, Summit County, produced roughly 20,000 fine ounces of gold in 1909, an increase over the production of 1908 of 14,000 fine ounces. There were four dredges in operation in 1909; the Colorado Gold Dredging Co. had one dredge in Blue River and one in Swan River; the French Gulch Dredging Co. operated in French Gulch on the Mecca placer, and the Reliance Gold Dredging Co. also operated in French Gulch.

The Reliance dredge is of the double lift, open-connected type. The buckets are of 9 cubic feet capacity. The Colorado Gold Dredging Co.'s dredges are of the Bucyrus, single-lift, open-connected type. The buckets are of 9½ cubic feet capacity. All the dredges are run by electricity. Heating of the dredges in winter is necessary in case it is desired to operate, as the cold from November to February is very severe. The Reliance dredge was operated throughout the winter of 1908–9. This was the first time in this district that a dredge has been operated during the winter months.

IDAHO.

The total value of the metal production of the State of Idaho in 1909 remained close to that of 1908. Decreases in production of silver and copper were more than offset by a small increase in that of gold and important increases in that of lead and zinc. In most of the counties the ore tonnage increased slightly. Owing to idleness of the Lost Packer smelter the gold output in Custer County was decreased materially, but larger outputs in Blaine, Elmore, Lemhi, and Owyhee Counties brought the State total up to the usual figure. Silver production fell below that of the preceding year, greatly in Owyhee and Shoshone Counties and slightly in Blaine, Custer, and

Lemhi Counties. The decreased copper output resulted almost entirely from reduced yield in Custer County, but partly from decreased production in Shoshone and Washington Counties. The greater part of the increase in lead was found in Shoshone County. This should be considered a gradual return to normal output, since the production of 1908 was unusually low.

There were only two smelters operated in the State during the year. These were run for a short time only. One at Ponderay treated lead ores in January, February, and March, and another at Hahn, in Lemhi County, had merely an initial run. The copper plant at Mackay, in Custer County, remained inactive, and the Lost Packer copper furnace at Ivers was not operated.

The Chicago, Milwaukee & Puget Sound Railroad completed road building in September. Eventually this railroad will be of benefit to properties in Hunter and St. Joe districts.

Ada County's production is not generally large, and that of 1909 was less than the 1908 output, but there was activity in development, and a modern 20-stamp concentration mill was constructed at the Ironsides mine. Bannock County produced a small amount of copper ore from near Pocatello. Fine gold is taken from Snake River in Bingham, Canyon, Cassia, Lincoln, Oneida, and Twin Falls Counties. This output was less in 1909 than in 1908. Blaine County produced more gold, lead, and zinc than in 1908, the production being insignificant compared with that of the years when the Minnie Moore mine produced heavily. The Muldoon Mining Co. shipped concentrate from the new mill in Little Wood River district. The largest producers were the Idaho Consolidated Mines Co., the Croesus mine, the Wood River Zinc Co., and the Eureka mine. The first company shipped lead and zinc concentrates from old tailings while unwatering the Minnie Moore mine. The Arkoosh mine, near Hailey, was a new shipper of rich galena. The Independence mine in Warm Springs district, which gave promise of becoming an important producer, was closed by litigation. A 10-stamp mill was erected at the Cannon Ball mine near Soldier.

Boise County improved its production of all metals. Placers supplied two-thirds of the gold production, part of which was due to the new dredge of the Boston & Idaho Co. The Golden Age mine and the Confederate mine were the most important gold producers in Boise Basin. Noteworthy preparations for production were made at the Gold Hill & Iowa property and at the Last Chance mine, where a 50-ton Chilian mill was installed. Little was done at the Lincoln mine near Pearl, but considerable concentrate was marketed from the Whitman property.

Shipments from Bonner County were reduced by the closing of the Ponderay smelter, which went into the hands of a receiver in March. The Katherine, Little Joe, and Wisconsin mines furnished ore to this plant or to Tacoma.

Custer County production was decreased, not only on account of the idleness of the Lost Packer smelter, but also through the decreased production at the Golden Sunbeam mine and comparatively small output from the Empire Copper property. The only other deep-mine producer of note was the Fort Pitt mine in Stanley Basin.

Elmore County produced more gold and silver than usual, chiefly due to the Bagdad-Chase and Minerva mines. The mill of the Atlanta

mines was not successfully operated. The C. H. Gold Mines Co. erected a new 25-ton amalgamation and cyanide mill to replace the old mill destroyed by fire in 1908. From the Homestake mine, near Neal, rich concentrates continued to be shipped.

In Fremont County a silver-lead ore was shipped by the Birch Creek Co.

Gold production from placer mines decreased, while that from deep mines increased, in Idaho County. The Buster mine at Elk City, by far the largest producer, continued to produce bullion and concentrate until November 30, when the mine was closed. There were many other producers in the county whose outputs were small. At the Cracker Jack mine, in the Robbins district, much work was done in building a tramway and repairing a 60-ton mill. The South Fork mine, near Elk City, was productive of bullion through the operation of a 5-stamp mill.

Of the deep mines, the three important gold producers in Lemhi County were the Kittie Burton, Copper Queen, and American D. M. & R. Co. Bullion was shipped from the Copper Queen's new mill, which was constructed in 1908. Lead ore was shipped from the Latest Out and Lemhi Union mines, but the Gilmore mine was idle. Placer gold production decreased, but outputs of all metals except lead were greater. The Pittsburg & Gilmore Railroad was in course of construction between Junction, Idaho, and Armstead, Mont.

The gold output remained practically the same at Pierce in Nez Perce County. A new dredge was added, and the Wild Rose Co. did much development work.

In Owyhee County, the Trade Dollar and De Lamar Cos. decreased the silver output. Both mines suffered from a shortage of developed ore. At the Banner mine development was pushed and some bullion and crude ore were shipped, but the Potosi mine was idle the greater part of the year.

Conditions improved somewhat in Shoshone County in 1909, although there was less silver produced than in 1908. In the Hunter district the Alice Mining Co. acquired a mill and shipped concentrate toward the end of the year. The mill at the Hercules mine was destroyed by fire in September. The Tiger mill was subsequently used. The Success Mining Co., in Placer Center district, was again actively marketing zinc concentrate. At Murray the mines had the opportunity of using the new railroad. The Bear Top and Coeur d'Alene North Fork were the principal shippers. In Yreka district the progress in mill construction at the Bunker Hill and Sullivan and the initial shipments of rich ore from the Caledonia property were the important events.

In Washington County copper ore was smelted from the Arkansas and Peacock mines, but they were not yet relieved by railroad facilities.

An improvement in the condition of dredging operations was not only shown in the increased production of gold, but in the installation of three new machines. Although there were eight dredges in operation, only half that number produced gold in considerable quantity. Foremost among these is the Risdon dredge of the Moline Mining Co. at Placerville, in Boise Basin district, which has been in operation since 1905. The plant has 5-foot buckets and treats 1,400 cubic yards per day. The company owns 80 acres of ground, which is said to yield

about 30 cents per cubic yard. The Idaho Co. (Ltd.), has been operating a dredge at Pierce for the past four years. It is of the Risdon type and has a capacity of 1,000 cubic yards per day with 3¼-cubic-foot buckets. The material is said to sample 21 cents per cubic yard. Since these operations were successful, and the company has about 250 acres of ground suitable for dredging, another plant, rated at 2,000 yards, was constructed and completed at the end of 1909, and this should materially change the figures of production for the district in 1910. In Stanley Basin of Custer County experiments were carried on with a small bucket dredge and an old dry-land dredge. At Elk City two new Hammond dredges were constructed, one belonging to the Elk City Dredging Co. and the other to the Jennings Dredge Co. The latter was operated a short time before being interrupted by cold weather. The State output from dredges amounted to over $100,000, or an increase of about 32 per cent.

MONTANA.

With a production of copper in 1909 considerably in excess of that of any previous year, even passing the extraordinary totals of 1905, Montana again ranks first among copper producing States. In consequence of the increase in copper, silver production in Montana regained its former rank. The gold and zinc totals in 1909 increased over those of former years, but lead production was a fourth less in quantity compared with the production made in 1908. The bulk of gold and silver yield is from copper ore mined at Butte. The larger part, or about 88 per cent, of the ore was concentrated and the concentrate was smelted at Great Falls and Anaconda. Eighty-three per cent of the gold produced in 1909 is credited to Silver Bow, Fergus, Madison, Chouteau, and Broadwater Counties, in which the most important operations are carried on, and which are named according to importance of yield. Forty per cent of the gold was extracted from siliceous ores treated at mills using principally the cyanide process. About 45 per cent of the gold came from smelting concentrates and crude ores, which provided, respectively, about 19 per cent and 26 per cent of the gold ultimately contained in lead and copper bullion shipped to eastern refineries from the one lead and four copper smelteries in Montana. Some of the ore mined in the State was shipped to Utah establishments and a small amount went to the Tacoma and Ponderay lead plants.

In total output the placer product of 1909 shows no change over that of 1908. The placers, distributed through 16 counties, contributed over 14 per cent of the total gold, the bulk of which was the yield of dredges in Madison County, with lesser quantities by the same method of mining in Missoula and Silver Bow Counties. In fact, dredge mining in Montana was responsible for the yield of over 78 per cent of the placer gold shipped to the offices of the mint in 1909, an increase of about 3 per cent over the output of 1908. The remainder of the placer gold came from smaller operations by hydraulic and drift mining. Mill bullion is received in the form of bars and retorts at the Bureau of the Mint offices. The shipments in 1909 totaled in quantity a third more gold than in 1908 and nearly twice the silver output of 1908.

Silver was produced principally from the argentiferous copper ores mined at Butte, the output from that source representing about 70

per cent of the total; the remainder was largely contained in siliceous ores mined in the same camp, at Elkhorn, in Jefferson County, and at Philipsburg, in Granite County. Bar bullion and cyanide precipitates, containing largely silver and small quantities of gold, were shipped to refineries in other States in 1909. The silver bullion came principally from Madison and Granite Counties.

Railroad building of importance to mining districts was continued during the year by the Chicago, Milwaukee & Puget Sound Railway. In September the road was open for traffic, affecting principally properties in Missoula County. Grading was completed by the Pittsburg & Gilmore line from Armstead, Mont., to Gilmore, Idaho. The line will help to develop mining properties in Beaverhead County.

Mining at Butte was active throughout the year, except in December, when ore production was retarded, due to labor trouble and strike of switchmen on the Northern Pacific and Great Northern Railways, which shut off a number of mines. The deepest working shaft at Butte is the Diamond, of the Anaconda Co. It is 2,960 feet deep, 600 feet of which were sunk during the year. A great amount of development work was done by all the companies. The properties attracting the greatest attention were some of the mines of the Anaconda Co., which opened at depth new ore bodies of importance. The Butte-Ballaklava was the most important new company to enter the field and begin shipments. It is the owner of a mine east of the Speculator and Edith May mines. Arrangements were made for consolidating several properties, and the most important transaction was the absorption by the East Butte Copper Co. of the Pittsmont smelter and mines of the Pittsburg & Montana Co. The Elm Orlu mine is a new shipper, yielding an ore which is making a marketable zinc concentrate at the Butte reduction works. It is expected that the Black Rock mine will also be regular in its shipments of zinc concentrate as soon as arrangements are made for a mill. Considerable zinc concentrate was shipped to Colorado and to works in Oklahoma and Kansas, setting a new record in Montana zinc output.

Outside of Silver Bow County, in which Butte is situated, much development work was also done in other camps, and shipments of ore and bullion were made in their usual quantities. The old mines at Marysville, in Lewis and Clark County, were operated by lessees; and tailings from the old mills, which worked the ores of the Penobscot and Gloster mines, produced cyanide precipitates and bullion. In the old silver mines in Granite County some leasing was done, and lately there has been renewed activity by several of the old companies. In Deer Lodge County excitement was caused over the success of lessees opening up fine bodies of gold ore in the Oro Fino and Cable mines near Georgetown. In Chouteau County the Ruby mine was operated the entire year and the August mine began producing in March. Both properties are in the Little Rockies district and each has a mill in which the cyanide process is used. Sulphide iron ore was shipped in greater quantity than ever before from the Keating, Ohio, and Black Friday mines near Radersburg, in Broadwater County. The ore from the three mines, carrying about $18 per ton in gold, about 54 per cent of iron, and 35 per cent of silica, with traces of silver and copper, is in demand by the copper smelteries for fluxing purposes. Some attention is being given to the silver-lead

mining south of Libby and to the mines near Sylvanite, in Lincoln County.

The first successful gold dredging operations in Montana are now carried on at Ruby, in Madison County. Three bucket dredges are installed in Alder Gulch, on which Virginia City is situated. This gulch was the most productive of placer diggings in Montana from 1864 to 1875. In 1896 the first steps were taken to prove the value of the area below Alder Gulch for machine mining. Explorations were made by test-shafts and drilling with Keystone drills. After various early attempts at dredging, first with orange-peel excavators, then with various types of steam dredges, one starting in 1899 and the other in 1902, and after remodeling these several times, the third dredge, built and starting in 1906, was electrically equipped and proved so successful that it was decided to equip the other dredges so that all three are operated by electric power from the plant of the Madison River Power Co., in Madison Canyon, 50 miles east. The three dredges have a combined capacity of 350,000 cubic yards per month, based on actual operations. No. 3 is a sluice-box dredge designed by the engineers of the Conrey Placer Co., the owner of all three dredges, and is reported to be working in ground 34 to 40 feet deep, the buckets cutting 1 to 4 feet into the bedrock. The gold in this ground will average about 20 cents per cubic yard, and is described as being fine, flaky, and floury and is said to be quite uniform from surface to bedrock. This dredge worked 34 acres in 20 months to an average depth of 34 feet. Dredges No. 1 and No. 2 are of the Marion-Stacker type. Since 1902 the placers have yielded upward of $2,000,000 in gold, the gold ranging from 0.835 to 0.858 in fineness. The history of this enterprise, particularly from an engineering point of view, is highly interesting to those engaged in auriferous gravel mining.

In Missoula County a bucket dredge of the Marion-Stacker type, 3,000 yards capacity and electrically operated, was installed on Cedar Creek, 18 miles from Iron Mountain, by the Kansas City Commercial Co., and began operating late in November, 1909. It is the property formerly known as the La Casse placers. The dredge part of the ground has been tested, sampling about 25 cents per cubic yard, and the first clean-up was reported as satisfactory; therefore the outlook for 1910 seems favorable. The gold ranges in fineness from 0.938 to 0.955.

The gold dredge at Rocker, about 4 miles west of Butte, was completely installed and placed in operation early in 1909. It is of the bucket type and was built by the Risdon Iron Works from the designs made by Col. M. H. de Hora, and is different in most respects from the usual plants constructed. There are 20 tables, 10 on each side of a revolving screen; each is 2 feet 6 inches wide, and the shortest is 8 feet 6 inches long. They are divided in the middle by a cast-iron mercury trough. The tables are covered with cocoa mats. Water for use on the dredge is pumped from a shaft on the property. The dredge is electrically operated; its motors, 9 in number, are all of the induction type. The British-Butte Mining Co., owner of the dredge, operated it at intervals during the year and made several small clean-ups. It is questionable whether it will be operated again by the present company.

NEVADA.

The production from the mines of Nevada in 1909 shows a substantial increase in the output of each of the five metals, gold, silver, copper, lead, and zinc, the value of the total production aggregating approximately $30,000,000, a gain in value of 60 per cent, or nearly $11,500,000, as compared with 1908.

Increases of almost five and one-half millions in copper values and over $5,000,000 in gold accounts for most of the gain, but the mines also produced nearly 11,000,000 fine ounces of silver, about 1,400,000 ounces more than in 1908, and the values of lead and zinc each show an increase of over $100,000.

Esmeralda, Eureka, Clark, Humboldt, Lander, Lyon, Washoe, and Whitepine Counties contributed to the increased gold yield, as decreases were reported from all other counties. The Goldfield Consolidated Mines Co., at Goldfield, Esmeralda County, is the prime factor in the State's gold production. This company placed its new 100-stamp mill in operation during the last week of 1908, and during 1909 made an average production of more than $500,000 per month. In addition some very high-grade ore was extracted and shipped to the smelters.

In the Silver Peak district, about 20 miles west of Goldfield, the Pittsburg Silverpeak Gold Mining Co. continued to be a heavy gold producer, and the mines at Rawhide, in the northwest corner of the county, made an increased output in 1909 through the activity of the various leasing concerns.

The great increase in the State's copper product from 15,598,788 pounds, valued at $2,059,040 in 1908, to 57,976,478 pounds, valued at $7,536,942 in 1909, results from years of development work in the big copper district at Ely, Whitepine County, where the erection of large concentrating mills and smelter has made the once famous old silver-lead camp into one of the big copper-producing units of the United States.

Whitepine County ranks first in tonnage of ore mined, is the source of over 99 per cent of Nevada's copper product, and ranks second to Esmeralda County in total value of mineral output, surpassing Nye County, which ranked first in 1908. The nearly fourfold increase of gold mined in this county resulted from the increased tonnage of gold-bearing copper ore reduced in the Ely district. This district also produced half of the county's total yield of lead in 1909.

The mines in the Cherry Creek district report an increased tonnage and output of gold, silver, and lead. The Granite section shipped more lead ores, but a reduced production was made from the lead-producing districts at Hamilton and at Ward.

Mining in Churchill County in 1909 was confined almost entirely to the Fairview district, where considerable development work was in progress. A reduced gold and silver yield was reported, but some copper was shipped from the district.

Clark County increased its output of gold, silver, and zinc, but smaller quantities of copper and lead were reported. The mines of Yellowpine district in this county furnished the entire zinc product of the State, totaling 3,013,359 pounds, valued at $162,721 in 1909, an increase in quantity of more than 170 per cent. The Searchlight district was the source of the county's increase of precious metal

values, but less copper and lead were shipped from that section than in 1908.

Both deep mine and placers made reduced gold and silver returns in Douglas County.

In Elko County an increased placer yield was reported, but the deep mines furnished a diminished gold product, owing to the closing down of the Lucky Girl mine at Edgemont pending the settlement of a suit. The new Gold Circle district (Midas post office) doubled its production of gold and silver, but decreases are noted from Aura and Railroad districts. About the same returns were received as in 1908 from the Tecoma district and from the deep mines at Tuscarora, but increased savings were made by the placer operators in the latter district. Renewed activity in the Spruce Mountain section resulted in a larger copper and lead output.

Esmeralda County, in addition to furnishing 65 per cent of the gold output in 1909, was the source of 60 per cent of the State's silver increase, trebled its copper production, and sent nearly three times as much lead to the smelters as in 1908, thus furnishing over 1,000,000 pounds of Nevada's increase in this metal. The new Lucky Boy district, 7 miles west of Hawthorne on the old Bodie stage road, supplied the increased shipments of silver and lead.

Larger clean-ups were made from the placers of Eureka County than in 1908, and at the deep mines more than double the tonnage was mined, resulting in increased production of precious metals, lead, and copper, and raising the total values recovered to $732,377, as compared with $355,308 in 1908. The most notable feature of the year's work was the gold production at the Eureka-Windfall mine. A cyanide plant was installed, and the first gold bar was shipped to the mint from Eureka County in 1909. The famous old Richmond and Eureka property made large shipments of lead ores carrying gold, silver, and copper values to the smelters at Salt Lake.

Humboldt County's metal production was largely derived from the Chafey, Seven Troughs, and National districts. The latter is a new camp, producing for the first time in 1909, located about 60 miles north of Winnemucca. Some extremely high-grade ore has been mined at National during the last year. The Chafey Mines Co., operating the Mayflower mine, was the principal producer in Humboldt County in 1909. Increased milling facilities resulted in a greater output from the mines of the Seven Troughs district. The principal producers included the Nevada Hercules, Therian-Wihuja, Fairview, Kindergarten, and Florence mines.

Lander County mines yielded more gold and silver but less copper and lead than in 1908. Production was reported from the Reese River, Kingston, Bannock, Galena, Cortez, Lander, Dean, and Hilltop districts. The new Bannock district, 14 miles south of Battle Mountain, and the Hilltop district, about 18 miles southeast of Battle Mountain, near Dean, each passed through a boom stage during 1909.

The value of the mineral production of Lincoln County in 1909 was less than two-thirds as large as in 1908, owing to the closing down of the old Bamberger-Delamar mine at Delamar, in the Ferguson district. In the Pioche district an increased tonnage yielded more gold and lead and less copper. The chief producing mines were the Bristol, Nevada-Utah, Prince, and the Mendha Group.

Nearly the entire mineral production of Lyon County was won from the Silver City section in 1909, the values being mostly gold. Ramsey, Wellington, and Yerington districts report small productions. Development work was in progress in the Yerington district in anticipation of the completion of the promised railroad and smelter to serve this section.

Nye County produced 75 per cent of the silver yield in Nevada in 1909, ranked second to Esmeralda County as a gold producer, and ranked third in the total value of all metals. Gold values were less by $178,000 than in 1908, but the silver values were greater by $242,000. Fifteen districts reported a production in 1909, but the Tonopah, Bullfrog, Round Mountain, Manhattan, and Johnnie districts furnished more than 98 per cent of the county's gold product. More than 95 per cent of the county total and nearly 72 per cent of the State total of silver in 1909 was extracted from the mines at Tonopah. The Manhattan and Round Mountain districts were the source of three-fourths of the total placer yield of Nevada in 1909.

In Storey County (Comstock district) the metallic production was about nine-tenths as large as in 1908, and averaged about $2 in gold to $1 in silver. The larger producers include the Savage, Chollar & Potosi, Yellow Jacket, Crown Point, and Con-Virginia mines.

The output from the mines of Washoe County was chiefly in gold values, and amounted to about twice as much as in 1908. The Jumbo district mines reported an increased production, but a slightly diminished output was mined in the Olinghouse district.

NEW MEXICO.

In the production of precious metals the mines of New Mexico in 1909 made a decreased output as compared with that of the year 1908. The decrease in gold was chiefly in the output from deep mines, but the placer gold yield also decreased. Of the baser metals, copper, which has been the chief metal of the Territory in point of value, showed a decreased output, and gave way to zinc in total value of metal marketed. Both lead and zinc yields showed substantial increases.

Gold was produced in all of the counties making a mineral production in 1909. Socorro County ranked first in the yield of gold from the siliceous ore mines of the Mogollon (or Cooney) and the Rosedale districts. Grant County ranked second, chiefly from the siliceous and copper ores of the Lordsburg and Pinos Altos districts. Lincoln County ranked third from the yield of the amalgamating mills at White Oakes. Colfax County, from which county comes 75 per cent of the placer yield of the Territory, stood fourth. Sierra County was an important producer of gold, chiefly from the Hillsboro or Las Animas district. Bullion from mills supplied 58 per cent of the gold yield in 1909; smelters recovered 33 per cent; and 9 per cent came from placers.

The yield of silver in the counties of New Mexico does not follow in the same general order as the gold output. Socorro County ranked first, with two-thirds of the total silver yield, chiefly from siliceous ore from Mogollon district. Grant County ranked second from all classes of ores. These two counties together produced 87 per cent of all the silver. Sierra, Dona Ana, and Luna Counties, in the order

named, produced substantial quantities of silver from the Hermosa, Las Cruces, and Cooks Peak districts, respectively. Sante Fe County produced considerable silver from the Los Cerrillos district. Smelters recovered 58 per cent of the silver yield, from concentrates and crude ore (about equally divided); bullion from mills contained 42 per cent; the silver from placers was negligible.

The Ernestine mine, in the Mogollon district, Socorro County, has been for several years the largest producer of gold and silver in the Territory. The Socorro Mines Co. built a 30-stamp mill near Mogollon and commenced operations in August, 1909. The Rosedale Gold Mining Co. operated a 20-stamp mill and cyanide plant at Rosedale. In the central-western part of Socorro County is the Magdalena district, a lead-zinc camp. The chief producers in this district were the Tri-Bullion Smelting & Development Co., operating the Kelly mine, and the Ozark Smelting and Refining Co., operating the Graphic mine.

In Grant County there was considerable prospecting for copper. The Chino Co., which took over the Santa Rita mines, in the Central district, did much prospecting by churn drills, and also maintained a large production. The Philadelphia Copper Co. did considerable development work. The Burro Mountain Copper Co. was the chief operator in the Burro Mountain district. The Mangas Copper Co., in the same district, started active prospecting with churn drills in October. The Bonnie, the Dundee, the Eighty-Five, and the Superior mines, in the Lordsburg district, were operated in 1909. Eureka district (including Sylvanite) showed a reduced yield. Other producing districts were the Apache, Chloride Flat, Fleming, Pinos Altos, Red Hill, Steeple Rock, Steins, White Signal, and Whitewater.

Dona Ana County ranked third in value of total output, lead being the main product. The Bennett-Stephenson Mining Co. was the most important producer in the county.

Considering the other producing counties in order of value of total output, Luna County ranked fourth, the chief metal produced being lead. Active operations in this county were in the Cooks Peak, the Victorio (or Gage), and the Tres Hermanas districts. Sierra County showed a small increase in total value, with an increase in silver, copper, and lead, but a decrease in gold. There were 18 producing deep mines in this county, the heaviest yield coming from the Hillsboro (or Las Animas) and the Hermosa districts. Development work was active in the Black Range district at Chloride, Kingston, and Fluorine. The production of Lincoln County was from placers in Jicarilla district and from deep mines in the Cedar Creek, Gallinas, Nogal, and White Oakes districts. The Colfax County placers, near Elizabethtown, had a larger yield than in 1908. Sante Fe County made an increased production in all the metals over the nominal output of 1908. The yield was chiefly from the Los Cerrillos and the New Placers districts. The Sante Fe Gold-Copper Mining Co.'s smelter at San Pedro, Sante Fe County, was closed in 1909, as it was in 1908. Due to the idleness of the smelter and mines at Oro Grande, the yield of Otero County decreased very heavily in gold, silver, and copper. Bernalillo County made a small yield in gold, silver, and lead from the Soda Springs district.

There were no smelters in operation in New Mexico in 1909, the ore being shipped to El Paso, Tex., and to Douglas and Clifton, Ariz., and to Pueblo, Colo.

OREGON.

In Oregon in 1909 there was some decrease in both gold and silver output as compared with that of the year 1908, the combined reduction being somewhat less than $100,000. The number of productive quartz mines was about the same in both years, but 77 less placers reported product in 1909 than in 1908. The falling off in gold yield from the placers was shown not only in hydraulic mines, but in drift, dredge, and surface placer claims. The largest proportion of placer gold was derived from hydraulic mining operations. The tonnage of the deep mines was increased in 1909 over that of 1908, but the average value per ton of ore treated was less, so there was a reduced output from the quartz mines, as well as from the placers.

With the exception of Baker and Union Counties, all the counties of the State showed increased tonnage in 1909 over that of 1908. Of the total gold yield, 71.4 per cent was derived from quartz mining operations in 1909, and 28.6 per cent from placer mining work. Nearly all the siliceous ore was reduced at quartz mills, a very small proportion having been sent to smelters. The most productive quartz mine in the State is in Baker County, and the most productive placer mine, worked by a gold dredge, is in Jackson County. The largest values in gold came from Baker County.

The amount of silver produced in Oregon is comparatively small, and was even less in 1909 than it was in 1908. The quartz mines of the State yielded 92.6 per cent of the silver and the placers 7.4 per cent. Ten times as much silver came from Baker County as from any other county of the State. The next in importance to Baker in silver yield was Jackson County.

In 1909 there were 12 counties in Oregon which yielded more or less gold and silver, which is three less than was the case in 1908. In considering all metals derived from all sources, including copper and lead, Baker County yielded 52 per cent of the entire metallic output of the State in 1909; and in considering gold and silver alone, it yielded 54 per cent. The next in importance in point of total yield of gold and silver was Josephine County, followed in the order named by Jackson, Malheur, Grant, and Lane Counties.

The productive counties in northeastern Oregon, including Baker, Grant, Harney, Malheur, and Wheeler Counties, made a combined yield of 65.3 per cent of the total gold output of the State in 1909; and the mines of southwestern Oregon, including Coos, Curry, Douglas, Jackson, Josephine, and Lane Counties, yielded 34.7 per cent.

SOUTH DAKOTA.

The shutdown of the Homestake mines on November 23, 1909, to avoid a strike, and a lessened activity on the part of the other mills during the year, resulted in a decrease of over $1,000,000 in the yield of South Dakota for the year as compared with that of 1908. Had the Homestake mines continued operations throughout the year, the production would have been very close to the record output of 1908. As it was, the production was about the average for the last decade.

The cause of the closing of the Homestake mines and mills was due to the demand on October 10 of the branch of the Western Federation of Miners that all eligible men join the union at once and

the company's decision on November 17 to employ none but nonunion men.

Men were brought in from outside districts at the close of the year, and in January, 1910, the Homestake and 12 other companies declared for nonunion labor conditions and the establishment of the card system. The Homestake employees, opposed to the policy of the union, formed the Homestake Loyal Legion, unaffiliated with any union, and the company started part of the plant during January using nonunion men.

During these labor agitations the Homestake Co. continued work on its hydro-electric plant on Spearfish Creek. The chief problem of this work is in constructing a series of eight tunnels through the mountains. These tunnels will have an aggregate length of about 5 miles. It is hoped to complete the entire power plant by the close of the year 1910. The estimated cost of the plant is $1,000,000 and it will develop from 3,000 to 4,000 horsepower.

All the mills in the Maitland, Whitewood, and Portland districts, Lawrence County, except the Golden Reward mill, were run below full capacity during the year. The Imperial Co. continued prospecting for ore in the lower contact in the Portland district. The Wasp No. 2 Co. purchased the adjoining property, which assures renewed activity for this company. The Mogul, Golden Reward, and Lundberg, Dorr & Wilson mills all grind their ore with Chile mills and are using the Moore process for treating the slimes, whereas several years ago stamping and decantation were in general use.

In the Galena district, the Golden Crest Co. completed its 200-ton mill, but did not start it, as the shaft was being enlarged and deepened. The Branch Mint mill was run for a time. The Gilt Edge-Maid mine and mill were shut down, but negotiations are under way to start operations in 1910.

The Black Hills Development and Financial Corporation, a London company, bought and took options on several mines and claims in various districts in the Black Hills and purpose developing and working those properties which seem to show the best possibilities for ore production.

Custer County made about the same yield as in 1908 from the Saginaw Gold Mining Co.

Pennington County's output for 1909 showed a marked increase. At Hill City the Continental Copper Mining & Smelting Co. operated its mines and smelter during the year. The Gold Medal mine and mill were also in operation part of the year. At Rochford producing mines were the North Star and the Stanby. The Columbia, Krupp, and Keystone-Holy Terror mines at Keystone were producers. At Oreville the Forest City Mining Co. operated the Clara Belle mine.

Placer mining in Lawrence and Pennington Counties showed an appreciable decrease.

TEXAS.

The yearly production of silver from Texas mines during the last 28 years have averaged in value $221,755.[1] The yield in this metal for the year 1909 was about 408,000 fine ounces. There was also

[1] Phillips, W. B. The Mineral Resources of Texas: Bull. No. 14, Texas department of agriculture, 1910.

produced in 1909 a small quantity of gold and copper and about 90,000 pounds of lead.

Nearly all the silver production has come from the Shafter mine of the Presidio Mining Co., at Shafter, which has been operated almost steadily since 1884. The lead yield in 1909 also came chiefly from the Shafter district. There was a small output of lead and copper ores from the Sierra Blanca district, El Paso County, during that year.

UTAH.

According to a summary of figures compiled from reports made by mine operators for 1909, the tonnage of ore and the quantity of gold, silver, copper, lead, and zinc recovered showed substantial increases, so that the output compares favorably with the totals established previous to 1908. Lead, which has always been the chief metal in quantity of output, made another increase over the yield of previous years, keeping well in advance of copper, which is rapidly increasing. Utah ranks third in the list of lead-producing States and fourth among the copper-producing States. Over eight-tenths of the total ore tonnage was from mines in the Bingham or West Mountain district, and smaller but important tonnages were from mines in Tintic, Park City, and Camp Floyd districts. Over 5 per cent of the ore was treated at plants using the cyanide process, of which there were four in operation, the chief operations being in Tooele County. Mills treating ore by amalgamation in 1909 are situated in Box Elder, Grand, and Iron Counties. The ore concentrated at mills in Utah forms the largest part of the total, or about 73 per cent, nearly all of which was Bingham copper ore, making the largest tonnage of concentrates. Also making concentrates were 2 mills in Beaver County, 4 mills and a number of small tailing plants in the Park City region, 2 in Tooele, and 1 in Utah County. Crude ore directly smelted represented about one-fifth of the total tonnage and came principally from Bingham Camp and Tintic district. Lesser quantities came from Park City, Lucin district in Box Elder County, Rush Valley, Ophir, and Silver Islet districts in Tooele County, and from Beaver County mines.

Gold in 1909 is over a tenth greater in output than in 1908, and over a fifth less than in 1907. Ninety per cent of the gold production was credited to Salt Lake, Juab, and Tooele Counties, named according to importance of yield. About 65 per cent of the gold came from crude ores smelted, while 15 per cent was the yield of concentrate smelted. The Tintic district ores, which are practically all of smelting grade, yielded 40 per cent of the gold, and though Bingham camp shipped a larger tonnage to be smelted, the yield of gold was but 22 per cent of the total. In siliceous or dry ores gold averaged $2.83 per ton, which is greater than in any other kind of ore; its tonnage is not quite 1 per cent of the State total, but it continues to be the source of most of the gold bullion recovered principally by the use of the cyanide process. The method is used in the Camp Floyd district of Tooele County, which, for a number of years, was the principal producing gold district. In 1909 the district produced 14 per cent of the total gold.

Lead ores yielded in gold an average of $1.55 per ton; copper ores, 58 cents per ton, but, though the average from copper was small, the total yield of gold from this source was considerably over one-half

the gold produced in 1909 by reason of the large tonnage of copper ore mined, the greater part of it mined by steam shovels. The copper-lead ore and the lead-zinc ore mined was small in quantity compared to the other kinds, and yielded the average value per ton, respectively, of 47 cents and 41 cents in gold. Six mines produced 70 per cent of the gold. The Centennial Eureka in Juab County heads the list, followed by the Mercur in Tooele County, Highland Boy, Utah Copper, and Yampa in Salt Lake County, and the Mammoth mine in Juab County. Each of these properties yields over 10,000 ounces of gold.

Silver, in 1909, increased nearly a fourth in quantity over the 1908 total, and is only one-tenth greater in quantity than in 1907. The important silver districts in 1909 were Tintic, Park City, and West Mountain. Over half of the total silver was produced from ores mined in Tintic district, three-fourths of it from lead ores, and the remainder from copper ores. Mines in the Park City region yielded a fifth of the total silver, nearly all of it from lead ores; and the West Mountain district less than a tenth of the total, principally from copper ores. Siliceous or dry ore yielded but a small part of the total silver in 1909, averaging 1.12 ounces per ton; copper ore yielded over a fifth of the total silver and averaged 0.59 ounce per ton, which is less per ton than for any other kind. Copper-lead ore contained the greatest quantity, 22.41 ounces of silver per ton, but its yield was from a comparatively small tonnage. Lead-zinc ore, including some old tailings which were reconcentrated, averaged 6.63 ounces per ton. Five mines produced about 58 per cent of the silver, each yielding from its ores over 1,000,000 ounces of silver in 1909. Named in order of output they are the Colorado mine in Utah County, Silver King Coalition mine in Summit County, Centennial Eureka mine in Juab County, Sioux mine in Utah County, and Iron Blossom mine in Juab County.

The smelteries in active operation during 1909 were the copper plants at Garfield and Bingham and the lead plants at Murray, Midvale, and Silver City. All but the Tintic smeltery at Silver City operated the entire year, this plant closing in October. In daily capacity, these establishments now aggregate nearly 10,000 tons. When the new 1,500-ton smeltery of the International Co. is placed in operation in 1910, together with the increased equipment of the Garfield and Yampa, the total capacity of the Utah smelteries will be nearly equal to those of either Montana or Arizona. During the last six months of the year the large lead works were treating increased tonnages of lead ore, but still not at full capacity. The ore milling plants at Garfield were completed to concentrate an average of 8,500 tons of ore per day, though that quantity was often exceeded. New mills operated were the Ohio Copper and the Bingham New Haven, and additions were made to the Utah-Apex mill. All these plants are near Bingham. In 1910 when all the milling plants are in full operation 14,250 tons of ore may be concentrated daily.

In all the mining districts in Utah more or less development work was in progress and from most of them shipments of ore or bullion were reported. The Gold Mountain district, Piute County, was about the only exception. Very little work was performed on the larger properties in that district, though preparations have been made for

opening the Sevier mine in 1910 and also for putting the Annie Laurie mine in operation again. Gold bullion was shipped from the Camp Floyd district in Tooele County, but not in the usual quantities. The Mercur and Sunshine mines and companies leasing some old tailing dumps were the only producers. At Gold Springs, Iron County, the Jennie mine output of gold bullion was reduced, awaiting new electrical equipment for the mine and mill. The operators of the Susannah mine in Park Valley district, Box Elder County, erected a new mill and the mine became a producer of gold bullion.

The placer gold output in 1909 was less than in 1908. Small productions from operations by sluicing and the use of burlap tables were reported along the Colorado, Green, and San Juan Rivers and from surface deposits near Mesa, in Grand County. The dredge on Green River, in Uinta County, was operated a very short time in 1909. From the same region, however, it is expected the gold production will be increased from the use of a new placering device. The year 1909 yielded nothing, as the work was all preparatory, but the first results in 1910 were rather encouraging, as the new methods employed saved the fine gold.

WASHINGTON.

The gold production of Washington in 1909 shows an increase of about 49 per cent over that of 1908, while the output of silver is 12 per cent less. There are 47 mines making more or less production, of which 11 are placers and 36 are deep mines. The number of deep productive mines was slightly more in 1909 than in 1908, but the number of placer mines which were productive has decreased by one-half in the same period. The tonnage of ore treated or sold in 1909 in Washington was 36,308, which is a material increase over the figures in 1908 and accounts for the augmented gold yield. Most of this was siliceous or dry ore. Some gold and silver was obtained through the reduction of copper ores, and some silver was derived from lead ores. In the year 1908 Stevens was the most productive county in both gold and silver, but in 1909 Ferry County more than doubled the yield of Stevens in both metals. There are more productive mines in number in both Kittitas and Stevens than in Ferry County, but those in the latter county made a much larger output in value than those in Stevens County, yet the tonnage of Stevens County ores in 1909 was nearly double the quantity derived from Ferry County. It is noteworthy that the tonnage of ores from Ferry County increased by nearly 11,000 tons in 1909 over that of 1908, while the tonnage in Stevens County decreased by nearly 9,000 tons for the same period.

In 1908 the average recovered value per ton in gold and silver from all kinds of ores was $7.16, while in 1909 it was $10.94, an increase of $3.78 per ton. With the exception of Clallam, Ferry, and Kittitas, which increased their output of ores, all the other counties of the State show a reduced tonnage in 1909 as compared with that of 1908. The county of Kittitas has the most placer mines, and Ferry, Okanogan, and Stevens have the largest proportion of deep mines which were productive.

The most notable feature in the mining industry in Washington in 1909 was the marked advance shown in Republic district, Ferry

County, now the most productive section of the State. Indeed, of the total gold yield of the State in 1909 Republic district produced 58 per cent, and of the total silver yield this district produced 67 per cent. The mines are all deep ones, and none of the ore was treated at gold and silver mills, but was all shipped to smelters.

Kittitas County has 9 out of 12 productive placers of the State, and only two deep ones. The few mines in Chelan County are deep ones, and in King County there is only one deep mine of importance now producing. Okanogan County has 7 deep productive mines and one placer. Snohomish and Whatcom Counties have very few productive properties. Stevens County obtained the largest proportion of its gold output from one property at Pierre Lake.

WYOMING.

The production of precious metals in Wyoming in 1909 showed a considerable decrease as compared with that in 1908. Aside from the comparatively small placer output of the State, the output of gold and silver has formerly depended greatly upon the recovery of these metals from the smelting of copper ores, and in 1909 the idleness of the copper mines of Encampment district, Carbon County, caused much of the decrease. However, in 1909 there was an increase in the output of gold and silver bullion from the treatment of siliceous ore in amalgamating mills in the Atlantic, or South Pass, district, Fremont County, and the tonnage of this ore reported as blocked out and ready for the mill promises a larger output from this source in the future. The entering into the list of producers of the American Gold Placer Co., on Douglas Creek, near Holmes, Carbon County, in 1909, and the contemplated completion of the ditches and reservoirs of the X. L. Dredging Co., at Atlantic City, Fremont County, also promises a larger placer output in 1910 and in future years. Tests of placer ground near Shoshoni and Riverton, Fremont County, and the placement of the order for a dredge for one of the properties near Riverton also indicates a placer output from that region.

Copper again represented over 90 per cent of the total value of gold, silver, and associated metals produced in Wyoming. Albany County ranked first in the output of copper, from the Rambler Copper & Platinum Co.'s mines at Holmes. The ore is reported to carry also platinum, palladium, iridium, osmium, and nickel, as well as gold and silver. Tests have been made toward recovering the rare metals.

There were 50 nonproducing mines in Wyoming, upon which more or less development work was done. The aggregate footage driven in development work, taking the reports of the principal nonproducing properties, was 8,467 feet.

The completion of the Gulf to Coast link of the Chicago, Burlington & Quincy Railroad, between Shoshoni and Thermopolis, grading for which was commenced in 1909, will give an outlet to the Copper Mountain mines near Shoshoni and De Pass. There has been considerable development work done on these mines, and in 1908 trial shipments demonstrated the value of the ore.

EASTERN AND SOUTHERN APPALACHIAN STATES.

There were 95 producing mines from which gold, silver, copper, and zinc were obtained in the Eastern and Southern Appalachian States in 1909. Of these 48 were gold placer mines, 9 were copper mines, 4 were zinc mines, and the remainder were gold-quartz mines. The zinc mines of these States do not contribute to the production of the precious metals, but the copper mines produce the bulk of the small silver output from this part of the country. No silver nor silver-lead mines have been worked in these States for many years.

The production of gold in the Appalachian States showed a considerable decrease in 1909 as compared with the output for 1908. This was principally due to decreased activity in three mines, the Haile of South Carolina, the Iola of North Carolina, and the Franklin of Georgia, which ranked in the above order as the most important producers in 1907 and 1908. These mines were all surpassed in importance of output in 1909 by the Hog Mountain mine of Alabama, which has maintained an even and continuous production for several years. Gold placer mining in the Southern States showed little change from that of previous years.

The silver production of 1909 was slightly above that of 1908, due to increased copper production. The value of the silver output, however, was below that of the preceding year, owing to a lower average commercial price for this metal in 1909.

The average precious-metal extraction from 25,531 short tons of siliceous ore mined in these States in 1909 was $4.33 per ton treated, and that from 787,146 tons of copper ore was $0.06 per ton. There was a small production of silver and gold, included under copper ores, from cupriferous pyrite and from the magnetic dressing of the Cornwall (Pennsylvania) iron ores.

Of the gold production for 1909 the placers yielded 20 per cent, the gold-quartz mines 71 per cent, and the copper mines 9 per cent. Decreased output of gold in 1909, as compared with that of 1908, was reported from Alabama, North Carolina, and South Carolina. Georgia led the remaining gold-producing States with increased output in 1909.

ALABAMA.

In Alabama there was in 1909, as in other recent years, an insignificant silver production. There was a decreased gold output, as compared with that of 1908. The precious metals were produced entirely from small placers and two deep gold mines. The Warwick mine, near Talladega, made a small production, but the bulk of the output came from the Hog Mountain mine, which was the largest gold producer east of the Black Hills in 1909.

GEORGIA.

There was a slightly increased gold production in Georgia in 1909 and an insignificant increase in silver output. The precious metals came entirely from gold placer and quartz mines, from the latter of which 8,549 short tons of ore yielded an average extraction value of $7.09 per ton. Of 29 gold mines operated in Georgia in 1909, 15 were placers, and surface mining showed increased activity over that of the preceding year.

The principal placer mining in Georgia during 1909 was in Carroll, Dawson, Hall, Lumpkin, Union, and White Counties, and the chief production of gold from quartz ores was from Cherokee, Lumpkin, and McDuffie Counties.

In Cherokee County the famous old Franklin mine continued production to the middle of the year, and in Lumpkin County the Dahlonega deep and placer mines furnished a relatively important output of gold. In McDuffie County the Parks mine produced gold-quartz ore which was treated in a 10-stamp mill, and in White County the Loud placers continued active.

NEW HAMPSHIRE.

Small amounts of silver and gold were recovered in 1909, as in 1908, from copper ores of the Milan mine in New Hampshire, whose crude and concentrated pyritic copper ores were shipped to smelters.

NORTH CAROLINA.

There was a considerably decreased gold production in North Carolina in 1909 and this State lost first place in output of this metal to Georgia for that year. There were 18 gold placer mines in operation in 1909, or 8 less than in 1908, and the number of producing deep mines decreased from 16 to 15. Of the total gold production over two-thirds came from quartz ores, about one-third was from placers, and a very small amount was derived from copper ores. The small silver production was also chiefly from gold-quartz and copper ores. The average extraction value of precious metals in North Carolina decreased from $8.90 in 1908 to $5.07 in 1909.

The placer production of gold in North Carolina in 1909 was chiefly from Burke County, but Cabarrus, Cleveland, Franklin, McDowell, Mecklenburg, Rowan, Rutherford, Stanley, and other counties furnished minor amounts. The production of gold from deep mines was mainly by the Catawba Gold Mining Co., of Catawba County, and the mines at Gold Hill, in Rowan County; and smaller outputs came from the Iola mine in Montgomery County and other mines in Cabbarrus, Gaston, Jackson, Nash, Randolph, and Yadkin Counties.

PENNSYLVANIA.

A small production of gold resulted from the magnetic dressing of the iron ores of the Cornwall mine in Lebanon County, Pa., in 1909.

SOUTH CAROLINA.

In South Carolina, chiefly owing to continued misfortune at the famous Haile mine in Lancaster County, there was a decreased output of gold in 1909. There were 11 producers of gold in the State, more than in either 1907 or 1908, but 6 of these were placer mines, and not only did the total tonnage output decrease from the deep mines, but the average value of extraction of precious metals also decreased $0.09 per ton treated.

Placer production in South Carolina, the total value of which in 1909 was less than $1,500, was reported from small operations in

Cherokee, Chesterfield, Greenville, Lancaster, and Spartansburg Counties. The main output from deep mines was as usual, from the Haile mine of Lancaster County, but there were also small outputs from Abbeville, Cherokee, and York Counties.

TENNESSEE.

The gold production of Tennessee, always small, was slightly higher in 1909 than in 1908. The output was chiefly from refining of the Ducktown copper ores of Polk County, but there was also a nominal production of placer gold, as usual, from the Coker Creek gravels in Monroe County. The silver production of 1909, always more important than that of gold in Tennessee, and entirely from Ducktown copper ores, was about the same as in 1908.

VIRGINIA.

The production of gold in Virginia in 1909 was small, but slightly above that of the preceding year, and owing to an increased copper output, the silver production was also above that of 1908. There were 4 placers and 3 deep mines contributing to the output of precious metals in 1909; and the latter produced 14,075 tons of ore of which 250 tons were siliceous gold ore yielding an average precious metal recovery of $2.09 per ton, and 13,825 tons were copper ore and pyritic cinder yielding $0.35 in gold and silver per ton.

The gold placer production in Virginia in 1909 was mainly from small operations in Goochland County and the deep mine output of gold and silver was chiefly from recovery of these metals from cupriferous pyrite of the Dumfries mine of Prince William County.

THE PHILIPPINE ISLANDS.

PRODUCT OF GOLD AND SILVER IN 1907, 1908, AND 1909.

Year.	Gold.	Silver.
	Pesos.[1]	*Pesos.*[1]
1907	141,194	95.53
1908	434,500	2,750.00
1909	495,194	(2)

[1] One peso Philippine currency is equal to 50 cents United States currency.
[2] Gold and silver not estimated separately.

SILVER AND LEAD.

All the gold won in the Philippines is alloyed to some extent with silver; the proportion varying from less than 5 per cent in the placer gold of Paracale to 30 per cent in some of the gold mined in Benguet.

The principal occurrences of silver-bearing galena are: The vicinity of Paracale, Ambos, Camarines; the Catarman peninsula in the same province; the Island of Marinduque, near Torrijos; Masbate, near Milagros; and Cebu, near Mount Acsubing. All of these deposits have been prospected to some extent, but at present work is being carried on only in the Marinduque field.

The Gold District of Paracale-Mambulao, Ambos Camarines.

By Warren D. Smith.

The Paracale-Mambulao gold field has for centuries been known to the natives as rich in gold, and it was exploited in a crude way by the Spaniards by means of arrastras.

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There was only one dredge in operation in this district at the time the last annual bulletin was published, and all the lodes remained practically as the natives and the former Spanish and English operators (the Philippine Mineral Syndicate) had left them.

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The present operations in the Paracale district are confined almost entirely to placers.

Since our last report, two more dredges have begun operations on the Paracale River above the Paracale dredge. The Stanley dredge, farthest up the river, is a New Zealand model, operated by New Zealanders. The Philippines dredge is a Risdon make, and was operated by an American company. The hull for the fourth dredge is almost completed and plans for the fifth are under way. Of the three, the two New Zealand dredges are running steadily, but I regret to say that the third, up to the present time, has failed to secure results and has temporarily shut down. The Paracale Extension is a new company, which proposes to work ground farther up the Paracale River above the Stanley. (As this bulletin goes to press it is learned that the Philippines dredge is being moved to the Malaguit River.)

The ground being worked by the dredges now in operation is unusually rich, yielding 2 pesos per yard, according to the dredge master's sworn statement, and there are several spots where values as high as 14 pesos per cubic yard have been reported. It is not likely that such values will be found in all parts of the district, the richness of certain spots being due to the fact that the river cuts across the veins in these places. This can easily and clearly be seen by an examination of the field relations and of the fresh, crystalized gold as it comes up on the dredge. There is not much doubt but that there is much profitable ground and the district can support several more dredges.

Many may not be familiar with New Zealand dredging practice, so that a few of its essential features, as I have observed them in this district, are here given:

"Both the Paracale and Stanley dredges use the open-connected buckets and have no stacking ladder, but differ entirely in the gold-saving appliances.

"The Paracale dredge has a revolving screen, side tables, and table sluices, expanded metal and coco matting being used.

"The Stanley has no revolving screen and no side tables. It has two sluices copied from pattern of the old tail sluices, one being placed above the other. The dimensions of the first are 75 feet by 4.5 feet, those of the second 65 feet by 3 feet and 8 inches, with a fall of 1.5 inches to the foot. The riffles in the two sluices are about the same, and beginning at the top are as follows:

"First Hungarian riffles; then California riffles with a few T-shaped riffles; next undercurrent riffles for the fine gold with coco matting beneath; and finally plates with $\frac{3}{8}$-inch holes with 1.5-inch pitch with coco matting and expanded metal under all riffles. A 12-inch pump supplies water for the upper and a 10-inch for the lower one.

"An 8-ton, semimarine boiler provides the steam for four 7-horsepower Marshall engine, which runs the buckets and the 12-inch pump.

"The essential differences between the New Zealand and the American (Risdon) dredge on the river are:

"1. Absence of the stacking ladder.

"2. Absence of a screen and side tables in the Stanley dredge."

The dredges have not been working under similar conditions, and hence it is at present impossible to make any comparison regarding the relative efficiency of the two systems. The persons in charge are well aware that changes will need to be instituted to adapt the process of dredging to the ground. Mr. Jones stated that some of the values are being lost, particularly the fine float gold and that which adheres to the black sand.

The cost of operation per yard is still high, being close to 30 centavos, but the new dredges will embody several improvements as a result of the past experience with the ground, and a diminution may be looked for. One noteworthy feature at present is the difficulty experienced in amalgamating the gold secured by these dredges. The Paracale Co. is installing a Huntington mill to treat the large, rich, quartz bowlders which are constantly being encountered.

PART III.

PRODUCTION OF GOLD AND SILVER IN FOREIGN COUNTRIES.

PRODUCTION OF GOLD AND SILVER IN FOREIGN COUNTRIES IN 1909.

NORTH AMERICA.

British North America.

According to the report of the statistician, department of mines, Ottawa, Canada, the product of gold and silver in British North America in 1909 was, gold, $9,790,000; silver, 27,878,590 fine ounces. The report does not give the product by provinces because of incomplete returns:

Gold and Silver Product of Canada in 1909.

By John McLeish, B. A.

GOLD.

A preliminary estimate shows a slight decrease in gold production in 1909. The total production in 1908 was $9,842,105, to which the Yukon district contributed $3,600,000; British Columbia, $5,929,880; Nova Scotia, $244,799. In 1909 the Yukon shows a further increase, the value of the gold being estimated at $3,960,000. The total gold exports on which royalty was paid were, according to the records of the interior department, during the calendar year, 239,766 ounces. Complete statistics are not yet available as to the gold production in British Columbia, but the returns received appear to indicate a reduced output. The production in Nova Scotia will not differ much from that of the previous year.[1]

SILVER.

The rapid growth of Canada's silver production which has taken place during the past few years continued during 1909. Increased production is reported from both British Columbia and Ontario. In Ontario, where the production is practically all from the Cobalt district, a portion of the ores (8,384 tons in 1909) is treated in Canadian metallurgical works producing silver bullion, white arsenic, and a speiss containing silver, cobalt, nickel, etc., the balance of the ore being exported for treatment abroad.

The total production of recoverable silver in Canada is estimated at 27,878,590 ounces, valued at $14,358,310. The production from the Cobalt district again shows a considerable increase over the previous year, but not so large an advance as was made in 1908 over 1907.

* * * * * * *

Gold and Silver Product of Canada.

Metals.	1908		1909	
	Ounces.	Value.	Ounces.	Value.
Gold	476,112	$9,842,105	473,633	$9,790,000
Silver	22,106,233	[2] 11,686,239	27,878,590	[3] 14,358,310

[1] According to the Halifax Industrial Advocate the production of gold in Nova Scotia in 1909 was 12,500 ounces, a slight increase over 1908.

[2] Silver contents of ore, etc., at 52.864 cents per pound.

[3] Estimated recoverable silver at 51.503 cents per ounce.

CANADA.

Ore Deposits of Hedley Mining District, British Columbia.

[From Report of the Department of Mines, Geological Survey Branch, Ottawa, 1910.]

Up to the present time gold has been the only product of the mines of the Hedley district, and only two mines, namely, the Sunnyside and the Nickel Plate, are producing. The ore deposits were first discovered in the year 1896, but in the years immediately following their development was slow, on account of the distance from established lines of communication and the lack of any road better than a mere pack trail. After the entrance of the Yale Mining Co., however, in the year 1899, progress was more rapid, and this company, after spending a great deal of time and money in demonstrating the value of their properties, building wagon roads and tramways, and opening up the country, delivered the first ton of ore to be treated in the stamp mill in the spring of 1904. Since then operations have been continuous, save in exceptional years when the severity of the winter necessitated the closing down of the mill for a short time. The total tonnage of ore treated since 1904, up to the close of 1908, was 153,013 tons. From this, over $2,250,000 worth of gold has been obtained, at approximately $15 to the ton.

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GENERAL CHARACTER OF THE ORE DEPOSITS.

All of the ore deposits of the district that have up to the present been worked contain gold as the principal valuable metal, and only gold has been extracted from them. In one or two isolated places ores of copper—which are as a rule sparingly disseminated through all the deposits—are concentrated to such an extent that a small output of this ore might be brought about, but it is not likely that within the limits of this area the mining of copper ores will ever become an important industry. Up to the present no extraction of copper or shipment of its ores has taken place. These two metals occur in the same deposits or the same kind of deposits. There is also a genetic connection between the origin of the gold and that of the copper—that is to say, both of these metals occur in deposits of contact metamorphic origin, so that the discussion of one must include the other.

At the close of the year 1908 reduction of the Hedley ores had been carried on for about four and a half years, and the annual production of gold has been each year in the neighborhood of $500,000 in value. No copper has yet been recovered, except perhaps as a by-product of the smelting of the gold ores. At and near the surface much of the gold occurred free and was visible in the native form; but with increasing depth its recovery became more difficult on account of a more intimate association with the sulph-arsenide arsenopyrite. This is economically the most important mineral with which the gold is associated.

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BRITISH COLUMBIA.

Gold and Silver Products in 1908 and 1909.

[From the Mining Journal, London, January 8, 1910.]

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Classification.	1908		1909	
	Ounces.	Value.	Ounces.	Value.
Gold (placer)	32,350	$647,000	30,000	$600,000
Gold (lode)	255,582	5,282,180	250,000	5,167,500
Total	287,932	5,929,180	280,000	5,767,500
Silver	2,631,389	1,321,483	3,000,000	1,470,000

* * * * * * *

Gold.—It has to be admitted that the production of gold from placer (alluvial) fields has steadily declined until the estimated value for 1909 is smaller than for any other other year since 1897. There is, though, good reason to expect improvement next

season as a result of placer mining, for additional hydraulicking facilities are being provided in the two most productive placer gold districts, Cariboo and Atlin.

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Silver.—The outlook for a larger production of silver is distinctly favorable. The greater part of this metal produced in this Province is obtained from ores in which it occurs in association with lead, and in much smaller degree with copper. The proportion is more than 2,000,000 ounces in the former case and about 700,000 ounces in the latter.

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British Columbia Mines and Minerals.

By E. Jacobs.

The report of William Fleet Robertson, provincial mineralogist, for the year 1909, gives the later and corrected reports of production.

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GOLD.

Production of placer gold was $477,000, as against $647,000 in 1908, and this was the smallest amount of any year since 1894. The decreased output was attributable partly to the short water supply last season. The value of lode gold was $4,924,090, a decrease of $358,790 as compared with 1908. Nelson, Boundary, and Coast districts each produced more lode gold, but the decrease in Rossland camp was large. About 86.5 per cent of the lode gold was recovered from smelting ores also copper-bearing; the remaining 13.5 per cent was from stamp milling, etc. The stamp mills operated last year were those of the Hedley Gold Mining Company, at Hedley, Similkameen, 40 stamps; Granite-Poorman mill, 20 stamps, near Nelson; Queen mill, 20 stamps, at Sheep Creek, Nelson division, and one or two very small mills also in the last-named camp.

SILVER.

The silver produced totaled 2,432,742 ounces, a decrease in quantity of 98,647 ounces and in value of $82,213 as compared with 1908. About 98 per cent was from silver-lead ores and the remainder from copper-silver ores. The Slocan district, including Ainsworth, Slocan, Slocan City, and Trout Lake divisions, produced about 50 per cent of the total, and Fort Steele division of East Kootenay, 23 per cent, all from argentiferous galena ores.

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PROVINCE OF NOVA SCOTIA.

[From report of the Department of Mines, 1909.]

GOLD.

Year.	Material crushed.	Total gold extracted.		
	Tons.	*Oz.*	*Dwt.*	*Gr.*
1905	71,725	15,549	14	6
1906	64,495	13,048	0	12
1907	64,657	13,687	6	20
1908	59,664	11,811	15	0
1909	59,058	12,597	12	13

MEXICO.

The American ambassador at Mexico City has forwarded the following figures for the gold and silver product of Mexico for 1909—

	Kilograms, fine.
Gold	35,875.599
Silver	2,299,920.133

which, for the gold, represents 1,153,400 ounces, fine, valued at $23,842,900, and for the silver, 73,942,432 ounces, fine, of the commercial value of $38,450,065.

Mexico's New Mining Code.

By Frederick F. Barker, of Mexico City.

[From Bulletin of the Internationl Bureau of the American Republics, January, 1910.]

On the morning of November 25, 1909, President set his signature to the new mining code of Mexico as passed by the two legislative camaras (chambers), to become effective after the 1st day of January, 1910. The new code supersedes the code of 1892. It contains, however, comparatively little that is new. The cardinal features of the old Mexican mining law are in nowise changed. The main purpose of the new codification was to fuse into one homogeneous and coordinated whole the provisions of the old code and the related heterogeneous mass of executive decrees and departmental rulings and circulars which had accumulated during some 20 years, and which made the search and application of the Mexico mining laws a matter of no little difficulty. The general consensus of opinion in the mining and legal professions here is that the new law is a masterpiece of conservative effort and that it will stand as a monument to the wisdom and energy of the present Secretary of the Department of Fomento, Señor Licenciado Olegario Molina.

The fundamental principles to-day underlying the mining laws of Mexico are borrowed from the Spanish legislation, modified in certain respects to meet the different political and economical conditions existing here. Under the Mexican law all mineral deposits are divided sharply into two classes. Those falling in the first class belong to the owner of the soil, whereas those falling in the second class lie in the grant of the nation and may be acquired only by denouncement and the issue of a federal patent. The substances belonging to the owner of the soil embrace deposits of mineral combustibles, such as coal and oil, of bituminous substances, and of surface salts; also quarries of marble, slate, building stone, etc. These do not come under the mining laws for any purpose whatsoever, except that coal mines are subject to federal police inspection. The substances which lie in the grant of the federal power are all deposits of inorganic substances found in veins or masses, the formation of which is separate and distinct from that of the country rock. Such substances include the minerals, such as gold, silver, lead, copper, etc., the precious stones, sulphur, arsenic, tellurium, and rock salt. To these deposits must be added placers of gold and of platinum. All these fall under the provisions of the mining code, and, until granted, are owned by the Federal Government, representing the nation, wherever they may be found, whether in private ground or in the public domain.

As a consequence of this, the mineral ownership is different from the ownership of the soil, and the freehold in the mineral deposits is for all legal purposes distinct and permanently separated from the freehold of the soil. Even when the two estates are united in the same person, no legal fusion takes place; each estate is held under and by virtue of a distinct title.

Mines are acquired from the Government under an administrative proceeding had before a local representative of the Department of Fomento, called a mining agent. The proceeding is termed a denouncement. Any person, whether foreign or native, except as indicated below, may denounce a mining property and secure a patent to the same. The title is issued to the first applicant. The Mexican law gives no preference to the discoverer of the mine, nor to the first occupant, nor to the owner of the soil. Priority of application, with issue of title and due registration thereof, alone gives priority of right.

The unit of grant is what is called a "pertenencia," being a solid of unlimited depth, the upper or projected extremity of which is a square measuring 100 meters on each side. The law sets no limit to the size of the mineral grant, and the applicant's enthusiasm will be restrained only by the fact that on every "pertenencia" he must pay an initial tax of 5 pesos (a peso being the equivalent of 50 cents in United States currency), and an annual tax thereafter of 6 pesos a "pertenencia" on the first 25 "pertenencias" and 3 pesos a "pertenencia" on the excess, provided they are contiguous.

Although the owner of a mining grant does not own or control the surface ground, the law, regarding the mining industry as a public utility compels the surface owner to permit whatever easements or expropriation of ground may be found necessary for the conduct of the mining operations. The law grants the miner the use and enjoyment of the waters discovered in the mine.

It will be of special interest to the American reader that the Mexican law knows nothing of the "apex rule." A miner may not pass the vertical planes of his grant; his mining operations must be confined strictly within his boundary lines drawn downward perpendicularly.

Once the miner has denounced, secured title to, and recorded his mine, all of which takes only a few months, he becomes the real owner thereof and may commence his

mining operations. His property is subject to forfeiture only for nonpayment of the annual mining tax referred to above. No yearly assessment or presentation work is required of him. Subject to the police regulations governing mines, a miner may work his mineral deposit as he sees fit or may defer work indefinitely. Punctual payment of the mining tax is his sole condition of tenure.

These, in a few words, have been the basic principles of the Mexican mining laws for many years. The new code does not modify them in any way, but removes some of the old restrictions which hampered their application. In the first place the new code completely federalizes the law applicable to mining property. The mining laws have always been federal in origin and sanction, but where no provision of the mining law was found to cover a given point the local law was applied. Under the new code in such cases the provisions of the civil code of the Federal district become applicable. Furthermore, the Federal courts are given a wider jurisdiction than formerly over mining cases, and certain criminal offenses committed against mining enterprises, such as the robbery of minerals, are made of Federal sanction.

To the commerical world perhaps the most important innovation contained in the new mining code is that to be found in the provisions relative to mine options. Under the new law a mine option covering a period of two years may be recorded and the holder of the option thereby acquires a property right in the mine. In other words, his right to exercise the option under the terms of the agreement will not be affected by any attempt on the part of the owner of the mine to sell to some other party. Up to the present time it has been well-nigh impossible to secure to the holder of an option full legal protection.

The new code has diminished somewhat the prospector's rights and privileges as accorded under the old law. It has been found that the too liberal provisions of the former code have led to abuse. Under the law as it now stands, any person may secure a permit to explore either in public or in private lands, but the area of exploration is limited to the area of a circle the diameter of which does not exceed 1,000 meters. The term of exploration permitted is limited to 60 days, and is not renewable except after the lapse of six months. The holder of an exploration permit has a preferential right to denounce mines found in the exploration zone, but only during the life of the permit, of course. No exploration permits are procurable in ground where mining operations have already been conducted, nor within 200 meters of a mining property, nor in inhabited districts.

A provision of the new mining code which will appeal to all miners is to the effect that no title or patent will be issued until the proper boundary monuments have been set up. Present holders of mining properties lacking these monuments are allowed one year within which to construct them.

Under the old mining law and related jurisprudence certain forms of mining partnership had come to be regarded as unlawful. The new code sweeps away all such restrictions and prohibitions and makes the Federal commercial code applicable in such matters. The commercial code is very liberal in respect of partnership and corporate associations.

The scope of this article prohibits a detailed statement of the various reforms introduced by the new code. It may be added, however, that the system of registration of mining titles has been perfected; that the administrative powers of the Department of Fomento have been somewhat increased, especially in the matter of the creation of provisional easements and the provisional expropriation of ground for mining uses, as also in the inspection of mines with a view to enforcing the mining law and its regulations and to the securing of statistical data; and, finally, that the new law permits the expropriation of ground for the construction of metallurgical works and railroads to be operated in connection with the mining property.

A word in conclusion in regard to the status of foreign miners in the Republic of Mexico. Except in a zone of 80 kilometers along the border, the mining laws of Mexico do not discriminate against the foreigner. A foreign company, partnership, or individual may conduct explorations, denounce mines, and obtain mineral grants, under the same terms and conditions as a Mexican citizen. To enjoy these privileges, not even residence in the Republic is necessary, since both the denouncement may be made and the title secured through a representative. Within the aforesaid zone of approximately 50 miles, an individual may indeed denounce mines, but in order to obtain a title under which to work them or to acquire permanent property rights in mines so located, or mortgages thereon, he must first secure a permit from the President of the Republic. In the case of foreign companies, these may neither denounce nor permanently acquire by any means whatever, mining lands or mortgages thereon within the zone indicated. Where such property is acquired under a judgment for debt, or upon succession at death, a year is allowed for the disposal of the mines. Under the Mexican laws, however, a Mexican corporation may consist partly or entirely of nonresident foreigners. There is nothing, therefore, either in the spirit or in the letter of

the law, to prevent a foreigner from denouncing a mine in the border zone and subsequently forming a Mexican corporation, in which he may hold practically all the stock, to take over and operate his mining interests so acquired.

CENTRAL AMERICAN STATES.

The production of gold and silver in the Central American States is usually arrived at by assuming that their export figures represent their product. The following table is compiled, for the most part, from United States imports figures:

States.	Gold.		Silver.	
	Weight.	Value.	Weight.	Commercial value.
	Fine ounces.		*Fine ounces.*	
Costa Rica	27,292	$564,187	439,730	$228,660
Guatemala	698	14,429	.....	.....
Honduras	16,315	337,258	867,748	451,229
Nicaragua	39,774	822,201	1,538	800
Panama	1,850	38,240	2,009	1,045
Salvador	41,300	853,752	983,247	511,289
Total	127,229	2,630,067	2,294,272	1,193,023

COSTA RICA.

The American minister at San Jose, Costa Rica, reports the figures of the gold and silver product of that State for 1909 to be as follows:

	Colons.
Gold	1,213,306
Silver	491,742

which is equivalent to $564,187 in United States currency for the gold and $228,660 for the silver, representing, for gold 27,292 fine ounces, and for silver 439,730 fine ounces.

GUATEMALA.

The American minister at Guatemala reports that: "There is gold produced, but it is impossible to obtain correct information as to output;" therefore, in the absence of any official estimate, the figures given in the statement of gold imports by that State, furnished this bureau by the Bureau of Statistics, Department of Commerce and Labor, are taken as the product of gold in Guatemala during 1909, viz:

Gold in ore and base bullion, $14,429, representing 698 ounces of fine gold.

HONDURAS.

The American minister at Tegucigalpa, Honduras, reports on the subject of the product of gold and silver in that State: "No data," consequently, the figures of the imports by that State from the United States Bureau of Statistics are accepted for the production, viz:

Classification.	Gold.	Silver.
In ore and base bullion	$259,434	$446,550
In refined bullion	77,824	4,679
Total	337,258	451,229

This valuation represents 16,315 fine ounces of gold and 867,748 fine ounces of silver.

LIMITED DEVELOPMENT OF THE COUNTRY'S MINERALS.

[From Monthly Consular and Trade Reports, February, 1910.

Consul Samuel MacClintock, of Tegucigalpa, in stating that Honduras has long enjoyed a reputation for being highly mineralized, gives some particulars of the development of the resources:

Surface indications are met with everywhere that seem to indicate rich deposits of ore of many kinds, both in placer and quartz formation. The old Spanish mines, long since abandoned, show that at one time considerable quantities of ore, especially silver, were taken out. One writer makes the statement that "under the Crown as much as $3,000,000 was annually exported from the northern part of the Province." Again, we are told that in the 15 years ended with 1810, ore to the value of $2,193,832 was taken out, and $3,810,383 in the 15 years ended in 1825. Also, that in 1853, $129,600 was taken out of Juticalpa alone, the capital of Olancho Department.

These figures should be taken as only the roughest indication of the amount of ore actually extracted. They are enough to indicate, however, that considerable ore values have been found here. The abandoned mines and discarded tools would also seem to indicate that for some reason mining here has not been found to be generally profitable. Various explanations are offered for this, such as lack of transportation, but chiefly the lack of capital and experience on the part of those who have undertaken to work here.

The mining laws of Honduras are based on the famous "Ordenanzas de Mineria" of Spain, and give the alien the same rights as the native. Under this law anyone can denounce up to 1,000 hectares (about 2,400 acres) for mining purposes and pay a yearly tax of 50 cents silver (20 cents gold) per hectare.

An examination of the records shows that some 700 mines in all have been denounced. While the country is undoubtedly richest in silver, denouncements have also been made of gold, lead, copper, kaolin, crystal, iron, opals, marble, saltpeter, aluminum, chalk, coal, antimony, zinc, nickel, and asphalt. Petroleum is also found, and an exclusive privilege to extract and export it has been granted.

ORE CONTENTS—OPERATIONS OF AMERICAN CONCERN.

The iron found here is said to be highly magnetic, and the copper found in the mines of Guanacostre, in the Department of Olancho, are reported to run as high as 80 per cent pure copper and 20 per cent pure silver. A recent discovery of copper in the Department of Yoro has been reported, in which the veins are said to run as much as 10, 12, and 14 feet in width. An estimate has been made that the entire body will average 50 per cent pure copper.

At the present time only two or three companies are in successful operation in Honduras. That of the New York & Honduras Rosario Co., operating in San Juancinto, in the Department of Tegucigalpa, is the only one doing work upon an extensive scale. It employs about 1,800 men, of whom 30 or 40 are foreigners, mostly Americans. During 1908 it mined and milled 29,516 tons of ore which yielded 976,450 ounces of silver and 16,664 ounces of gold. The ore is shipped to New York for smelting and refining in the form of bars, concentrates, and cyanide precipitates.

The mineral exports of Honduras during the year 1907–8 were as follows: Ore, $167,360; cyanide products, $204,862; copper, $165; gold, $18,360; coined silver, $98,280; silver in bars, $85,902; gold and silver, $4,000. Total, $578,939.

In conclusion, it would seem that mining prospects here are excellent, but that very little scientific prospecting has been done, and therefore the real condition of the country is as yet largely unknown. It would also seem that experience here clearly shows that no one ought to undertake mining without capital enough to prospect thoroughly, and if the property is found to be worth developing, to do it along modern lines. Labor can be had for 50 cents to $1 a day. Tools and supplies ought to be brought from the States. Pack mules can be bought for $30 to $40, and riding animals for twice that.

GOVERNMENT CANCELLATION OF A GREAT MANY CONCESSIONS.

Consul MacClintock states that the Government of Honduras has recently published a list of 97 mining concessions which have been canceled, concerning which he says: This is in accordance with the provisions of the mining code for nonfulfillment of the obligation to prosecute the work in accordance with the terms of the concession. These claims were to several different kinds of property, but chiefly gold and silver. They were widely scattered over the country, though most of them are in the Departments of Olancho, Yoro, and Tegucigalpa. These concessions embraced something like 50,000 hectares (123,500 acres). Quite a number of them were held by one party. These are now again open to exploitation, though it may be added that several of them have already been taken up.

NICARAGUA.

As no returns have been received from the American minister at Nicaragua regarding the product of gold and silver in that State for 1909, the United States imports figures are taken to represent the product, as follows:

Classification.	Gold.	Silver.
In ore and base bullion	$746,117	.....
In refined bullion	76,084	$800
Total	822,201	800

the equivalent of which, in fine ounces, is as follows: For gold, 39,774, and for silver, 1,538.

PANAMA.

The imports of gold and silver from Panama during 1909 were as follows:

Classification.	Gold.	Silver.
In ore and base bullion	.....	$550
In refined bullion	$38,240	495
Total	38,240	1,045

representing 1,850 fine ounces of gold and 2,009 fine ounces of silver.

SALVADOR.

The American minister at San Salvador reports that the value of the exports of bullion from that State were as follows in Salvadorian colones:

Gold	1,836,025.45
Silver	1,099,545.30

Assuming that the Salvadorian colon is equal to the value of the Costa Rican colon ($0.465), this gives the value of the gold in United States currency as $853,752, equivalent to 41,300 fine ounces, and of the silver, $511,289, representing 983,247 fine ounces.

SOUTH AMERICA.

ARGENTINA.

The imports by other countries from Argentina of bullion and ore, containing gold and silver are accepted by this bureau as the yearly production of that country during 1909, as follows:

Country importing.	Value of gold.	Commercial value of silver.
United States	$171,780	$76,820
Great Britain	18,127	61,035
Total	189,907	137,855

The above values represent 9,186 fine ounces for the gold, and 265,106 fine ounces for the silver.

BOLIVIA AND CHILE.

Heretofore, in estimating the product of gold and silver in Bolivia and Chile in this bureau it has been the custom to accept the figures of the imports from those countries by other countries plus their coinages as the probable production.

Bolivia is compelled to export through some port of Peru or Chile and consequently does not get credit for her exports, at least we have been unable to find where any other country has received any gold or silver from Bolivia either in 1907, 1908, or 1909, thus making it almost impossible to separate Bolivia's product from Chile's.

The value of the imports of gold and silver bullion and ores from Bolivia and Chile by other countries during 1909 was as follows:

Classification and country.	Gold.	Silver (commercial value).
Great Britain	$315,301	$1,385,973
United States	177,091	1,365,387
Total	492,392	2,751,360

The value of the gold bullion and coin imported into Great Britain from Chile during 1909 was $45,886; deducting from this the value of the coin imported—$2,861—leaves $43,025 for the gold bullion imported.

The value of gold in ore imported was $272,276, thus making the value of gold in bullion and ore imported into Great Britain $315,301.

The value of silver bullion and coin imported into Great Britain from Chile was $258,723; deducting the value of coin imported—$83,287—leaves the value of the bullion imported $175,436.

The value of the silver in ore imported from Chile and Bolivia was $1,210,537, thus making the value of importations of silver in bullion and ore into Great Britain $1,385,973.

Germany reports having received from Bolivia and Chile in silver ore 544,600 kilograms of silver. As there is no means of determining the fineness of these kilograms, nor the value thereof, no estimate can be made. The value of the United States importations of bullion and ore were as given in the above table.

The coinage executed in Chile during the year was 571,154.55 pesos in subsidiary silver coins, consuming 257,077 fine ounces of silver, of the commercial value of $133,680. There was no coinage for Bolivia made in that country during 1909.

Adding the importations into other countries from Bolivia and Chile to the coinage of Chile, gives the following values in United States currency, which are assumed to be the production of those countries, viz: Gold, $492,392, representing 23,819 fine ounces, and silver, $2,885,040 (commercial value), representing 5,548,154 fine ounces.

GOLD AND SILVER PRODUCT OF CHILE IN 1908 AND 1909.

[From The Mining Journal, London, Nov. 5, 1910.]

The gold and silver production of Chile in 1908 and 1909 is given in the following table, and compared with that of 1906 and 1907:

Year.	Gold.	Silver.
	Grams (fine).	*Grams (fine).*
1906	754,141	12,210,700
1907	1,495,714	18,736,188
1908	618,055	43,568,726
1909	680,995	35,907,227

Gold.—There was a slight increase in the output of gold from vein mining in 1908 as compared with 1907, but in 1909 the production amounted only to 49,958 fine grams, the lowest record yet reached. In Anconcagua there was a small production in 1909 from the mining district of Las Vacas. The Rosario and Mercedes mines of El Bronco continue to be opened up, but are still without a reduction plant. In Santiago the production diminished in the Albué mines, but some new workings have been started in other properties. The gold from placers amounted to 187,687 fine grams in 1908, and 179,523 fine grams in 1909, a further diminution on the two previous years. Less alluvial gold was won from the territory of Magellan; the dredges there have not yet proved a success.

Silver.—There is a further drop in the amount of silver produced from silver ores proper, the increase being due to silver contained in metallurgical products and other ores. In Tarapaca the lower grade silver ores from Santa Rosa, Huantajaya, and Pabellon de Pica are treated in the plant owned by the Sociedad Minera Beneficiadora de Huantajaya. In Antofagasta the production of the famous old Caracoles district is still insignificant. In Taltal the smelting plant of the Compañia de Minas i Beneficiadora de Taltal is supplied by ores from the Justicia and Esperanza mines of Cachinal. The Esperanza is a new mine, the main shaft being 90 meters deep on a vein which is 1.10 meters thick and dips east 70°. In Atacama the Elica de Borda mines were shut down in 1908, the production in 1909 being nil. The principal exports were from the Chanarcillo and Bandarrios districts in the department of Copiapo. In Coquimbo, Condoriaco furnishes the principal production. In Santiago there was a notable drop in the output from Las Condes.

Gold and silver.—The exports from Coquimbo amounted in 1908 to 1,147,535 kilograms of ore containing 26.34 D. M. of silver and 3.03 C. M. of gold, and in 1909, to 1,093,337 kilograms of ore with 32.16 D. M. of silver and 3.50 C. M. of gold—a 10 per cent increase on the two previous years.

BRAZIL.

The American ambassador at Petropolis states that the gold product of Brazil in 1909 was 4,320 kilograms, valued at $2,252,896, representing 108,983 fine ounces. The kilograms are reported as fine gold, but are, by computation, about 0.795, which is the fineness of Brazilian gold as formerly estimated by this Bureau, when compiling their product.

COLOMBIA.

The gold and silver product of Colombia is ascertained by taking the imports of bullion and ore into other countries from Colombia plus their coinage. The amount of the importations and names of the countries importing during 1909, were as follows:

Countries importing.	Value of gold.	Commercial value of silver.
United States	$1,834,573	$31,438
Great Britain	1,298,767	192,788
Germany	46,522	.....
Total	3,179,862	224,226

There was no coinage reported for Colombia during 1909. The above gold valuation represents 153,826 fine ounces, and the silver 431,204 fine ounces.

[From Bulletin of the International Bureau of the American Republics, July, 1910.]

INDUSTRIES.

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The great gold-bearing region is found in the lofty cordilleras of the Choco and Antioquia Provinces and in the mountain ranges that separate the Cauca and Magdalena Rivers. In this large area of many thousands of square miles, wherever there is gravel there is gold, and back in the mountains, where the rock has been laid bare, veins are found everywhere. These veins contain treasures of gold that can be extracted by the systematic use of modern machinery and methods. Many hundreds of miles of this rich territory have never been explored except by the Indian hunter.

Recent gold discoveries near Neiva, on the upper Magdalena River, have opened up a new section of the gold belt. It is known that the Department of Narino, bordering on the Ecuador line, is rich in gold. Gold nuggets are found in the gravel beds of all rivers of this section flowing into the Pacific Ocean.

The development of the quartz mining depends almost entirely upon transportation. The extension of the Dorado Railroad and the Tolima Railroad will facilitate transport to some of the mines of the eastern slopes of the gold belt of the Republic.

Discoveries have been made of rich gold-bearing quartz on the headwaters of the Andagueda and Chirvigo Rivers, distant about 125 miles from Quibdo.

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Russia is the only country whose platinum output exceeds that of Colombia. This metal, which is always found mixed with gold, comes from the gravels of the Choco, its main source being the Platina and Condoto Rivers, which are tributary to the San Juan River. It is also obtained from some of the streams that flow into the Atrato River.

Government returns covering platinum exploitation have not been published for a more recent period than 1905, but from records in the Bureau of Statistics of Bogota the total yield during 1907 amounted to about 245 ounces. There is undoubtedly a great future for this branch of mining industry in the Republic, and concessions recently granted foreshadow the intention to exploit it as a source of national wealth.

ECUADOR.

The Bulletin of the International Bureau of the American Republics of July, 1910, states that the gold exports (bullion and ore), during 1909, were valued at $274,368, which figures are accepted as Ecuador's product for that year. This valuation represents 13,273 fine ounces.

The figures of the silver product for 1908, viz, 22,642 fine ounces, of the commercial value of $11,774, are repeated for 1909.

[From Bulletin of the International Bureau of the American Republics, July, 1910.]

COMMERCE.

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During the year 1909 gold coin was imported as follows:

From Great Britain	$675,000
From Peru	28,000
From United States	150,000
Total	853,000

Gold (metal and ore) was exported as follows:

1908	$374,981
1909	274,368

THE GUIANAS.

BRITISH GUIANA.

The American consul at Georgetown gives the value of the gold production of British Guiana for 1909 as $1,192,715, which represents 57,697 fine ounces.

The mining industry of British Guiana last year followed the course of the last 16 years, and again showed a decline in the gold yield. Nothing could better illustrate the decadence of mining in the colony than this almost constant yearly fall in an industry which at no time has been of very considerable dimensions, but which is worked sporadically all over the colony, and the limits of which are—thanks to the failure of the administration to attempt anything in the way of a mineral survey—even at the present time quite unknown. The output to the end of December last was 67,850 ounces, which compares with the past 16 years as follows:

	Crude ounces.
1893–94	138,528
1894–95	132,995
1895–96	121,285
1896–97	127,479
1897–98	121,491
1898–99	113,114
1899–1900	112,790
1900–1901	114,102
1901–2	101,332
1902–3	104,527
1903–4	90,336
1904–5	95,864
1905–6	94,363
1906–7	85,505
1907–8	68,813
1908–9	73,273

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DUTCH GUIANA.

The American consul at Georgetown, British Guiana, reports the product of gold in Dutch Guiana for 1909 as valued at $621,008, which value represents 30,041 fine ounces.

GOLD IN SURINAM.

According to information in "Onze West," a revival of the interest shown in the Surinam gold industry is noticeable, in which, no doubt, the building of railways has contributed considerably. The following are the figures of the gold production during the last 10 years:

	Kilograms.
1900	876
1901	753
1902	588
1903	682
1904	801
1905	1,071
1906	1,188
1907	1,105
1908	1,209
1909	1,130

It is to be expected that mining for gold on a large scale will be successful, but not mining on a small scale, i. e., by private individuals. The extension of this industry, however, will only come about if the problem of mechanical gold exploitation is solved in our colony. Lately, however, efforts in this direction have been maintained.

The industry on a large scale will probably have a favorable opportunity of extending itself in Surinam as soon as the Government decides to grant permits fo the grounds in the Gran Creek territory.

Although the Government mine exploitation in the Lawas territory met with but little success, the engineers have made very important discoveries in the Gran Creek district. In this district very rich gold deposits have been found, and even the exploitation by the Government itself has been in contemplation. As this, however, has now been abandoned, it appears desirable that the grounds should be opened as soon as possible to private enterprise.

RESULTS OF EXPLORATION OF GOLD MINES.

[From Jaarcijfers voor het Koninkrijk der Nederlanden Koloniën, 1908.]

Years.	Production.		Exportation.		
	Quantity.	Value.	To the Netherlands.	Total exportation.	Value.
	Grams.	*Florins.*	*Grams.*	*Grams.*	*Florins.*
1899	893,197	1,223,680	823,831	872,373	1,195,151
1900	876,277	1,200,499	844,420	873,096	1,196,141
1901	752,843	1,031,394	705,043	723,768	991,562
1902	587,604	805,017	570,251	583,423	799,290
1903	682,489	935,010	679,577	681,223	933,275
1904	801,879	1,098,574	801,440	805,309	1,103,273
1905	1,071,316	1,467,702	1,018,677	1,023,486	1,402,176
1906	1,188,204	1,627,829	1,115,616	1,176,639	1,611,996
1907	1,104,396	1,513,023	878,134	1,041,911	1,427,418
1908	1,209,780	1,657,399	966,910	1,221,913	1,674,021

Total from 1876–1907, 35,143,358 florins.

FRENCH GUIANA.

From the same source the value of the gold product of French Guiana for 1909 is reported as 11,107,986 francs, which is equivalent to $2,143,841, representing 103,708 fine ounces.

The American ambassador at Paris gives the gold product of French Guiana for 1908 as 4,098 kilograms, valued at 11,065,000 francs, equivalent to $2,135,545, and representing 103,307 fine ounces.

PERU.

In the absence of any official information relative to the production of gold and silver in Peru during 1909 the figures for 1907 (being the latest reported) are repeated, viz, gold, 24,890 fine ounces, valued at $514,522, and silver, 9,566,118 fine ounces, of the commercial value of $4,974,381.

PRODUCT OF SILVER IN PERU.

[From L'Economiste Européen, Paris, June 10, 1910.]

Silver ores are abundant in Peru, principally in the form of silver sulphuret ores. Following is the information contained in a recent report from the chargé d'affaires of France at Lima, which has been the product of silver in Peru during the last year known (1907):

PRODUCTION OF SILVER IN PERU IN 1907.

Classification.	Fine silver.	Value.
	Kilograms.	*Peruvian pounds.*
Silver in bars	7,842	33,673
Silver in argentiferous sulphurets	29,722	118,822
Silver in argentiferous matte	42,517	179,681
Silver in argentiferous lead bars	3,207	13,737
Silver in argentiferous copper bars	40,315	172,655
Silver in ore	82,917	350,407
Total	206,520	868,975

The Department of Junin takes the lead in the production with 108,000 kilograms, the largest portion of this amount having been attributed to the Cerro de Pasco.

URUGUAY.

In the absence of any information whatsoever relative to the product of gold for Uruguay in 1909, the figures for 1908 are repeated as follows: Four thousand four hundred and thirty-three fine ounces, valued at $91,642.

VENEZUELA.

The importations of gold and silver into Great Britain and the United States from Venezuela during 1909 were as follows:

Countries importing.	Gold, value.	Silver, commercial value.
Great Britain	$215,654	$105,603
United States	64,985	975
Total	280,639	106,578

The above values represent 13,576 fine ounces for gold and 204,958 fine ounces for silver, which figures are accepted as the production of Venezuela for 1909.

EUROPE.

AUSTRIA-HUNGARY.

The report from the embassy of the United States at Vienna states that the product of gold in Austria during 1909 was valued at 641,346 crowns, equivalent to $130,193 in United States currency, representing 6,298 fine ounces, or 196 kilograms fine; and the silver product was valued at 1,640,416 crowns, equivalent to $333,004, representing 640,392 fine ounces, or 19,919 kilograms fine.

Report from the same source gives the amount of the gold produced from Hungarian mines at 2,726.20962 kilograms, valued at 8,941,967.55 crowns; and the silver product at 11,159.95161 kilograms, valued at 1,004,356.45 crowns. Assuming the kilograms to be fine metal, they would represent 87,648 fine ounces of gold with the value of $1,811,845; and 358,792 fine ounces of silver of the commercial value of $186,572.

The combined products of Austria and Hungary may be represented as follows:

GOLD.

Countries.	Kilograms fine.	Fine ounces.	Value.
Austria	196	6,298	$130,193
Hungary	2,726	87,648	1,811,845
Total	2,922	93,946	1,942,038

SILVER.

Countries.	Kilograms fine.	Fine ounces.	Commercial value.
Austria	19,919	640,392	$333,004
Hungary	11,160	358,792	186,572
Total	31,079	999,184	519,576

AUSTRIA'S MINERAL INDUSTRY, 1909.

[From The Mining Journal, London, Nov. 12, 1910.]

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The production of silver ore amounted to 21,102 tonnes, having a value of 3,385,723 kronen, or 160.4 kronen per tonne, against 22,241 tonnes for 1908. This (with the exception of 6 quintals from St. Joachimstal) was exclusively obtained from the Caroli-Borromaei mines at Pribram (Bohemia), which, however, showed a decreased output against the production for 1908. The output of metal amounted to 39,002,175 kilograms, against 39,866,781 kilograms for 1908. Of this, 38,690 kilograms were produced at the Caroli-Borromaei works, 71.98 kilograms as a by-product from the gold ore of the Roudny mine (Borkowitz, Bohemia), referred to below, and 240,195 kilograms (containing 4.026 kilograms gold) from the copper ores smelted at the Brixlegg State furnaces in the Tyrol. In addition, 3.495 kilograms of a silver slime containing 0.409 kilogram of fine gold and 78.84 kilograms of fine silver, were obtained as a by-product in the copper extraction installation of the Witkowitz Ironworks (Bohemia).

With regard to gold ore, the production amounted to 29,709 tonnes, having a value of 593,980 kronen, or 20 kronen per tonne, against 28,906 tonnes for 1908. From this quantity of ore, which is entirely credited to the Roudny mine near Borkowitz, were

obtained 519 tonnes of an auriferous pyrites which ultimately yielded 55.982 kilograms of fine gold; and, in addition, an amalgam yielding 139.394 kilograms fine gold, and a slime from which 7.911 kilograms fine gold were extracted by the cyanide process. The pyrites, however, were worked up at Freiberg, in Saxony, so that the metal actually produced in the Empire, including 1.1338 kilograms obtained at the Caroli-Borromaei works, amounted to 148.439 kilograms, having a value of 484,311 kronen. Four other gold mines were actually being worked, but none of them appears to have been productive.

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FRANCE.

The American minister at Paris gives the value of the product of gold in France for 1908 at 5,945,000 francs, equivalent to $1,147,385 in United States currency, representing 55,505 fine ounces, or 1,726 kilograms of fine gold; and the silver product is given as 18,415 kilograms, or 592,042 ounces fine, at the commercial value of $307,862.

In the absence of any official information regarding the product of the precious metals in France for 1909, the figures for 1908 are repeated.

GOLD MINES IN FRANCE.

[From the Economist, London, Apr. 23, 1910.]

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Gold mines in France are no longer a myth, and at least two companies are now quoted on the market. Their production is not yet very considerable, but is still sufficient for the mines to be worked at a profit. They are all seated in the same region known as the central plateau. Gold has long been known by geologists to exist in France, but in combination with antimony and arsenic. The principal of these undertakings are known as the Lucette, in the department of the Mayenne, and the Bellière, in the Maine et Loire, both of which companies' shares are now quoted on the local bourses. It is only of late years that chemists have succeeded in separating the gold from the other mineral substances. The deposit of the Lucette was at first worked for the antimony, and it is due to chemists in Australia that a method of extracting the gold was discovered. The seam is at a depth of 600 feet, the yield being about 20 grams, or two-thirds of an ounce to the ton. The value of the production in 1909 was 2,700,000 francs, including the antimony. The capital of the Lucette company is 3,150,000 francs, and the net profits in 1908 were 2,167,725 francs, representing 70 per cent of the nominal capital. The Bellière mine has been worked since 1905. The company has a nominal capital of 4,000,000 francs in shares of 100 francs, one-half of which were allotted to the vendor. The seam is of over half a mile in length at a depth of 100 meters, and the yield is almost as much as the Lucette. The gold is found in combination with arsenic. The production for 1909 is expected to amount to about 1,400,000 francs in value. There are some other mines in the same region, one, the Châtelet, in the department of the Creuse, of which five of the eight veins are already worked. The company was formed with a capital of 8,000,000 francs, the yield of gold being estimated at 25 grams per ton. Another is the Bonnac, for which a company has been formed, and two, the Vilanières and Salsegne, belong to individual owners.

GERMANY.

The United States ambassador at Berlin reports that the production of gold and silver from domestic ores in Germany for 1909 was as follows: Gold, 104.14 kilograms fine, and silver, 165,875.63 kilograms fine, which weights represent 3,348 fine ounces for gold, and 5,332,901 fine ounces for silver, of the respective value of $69,209 and $2,773,108.

The Mineral Industry of Saxony in 1909.

[From the Mining Journal, London, Dec. 10, 1910.]

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Mining in the kingdom of Saxony—which does not, of course, include the Prussian Province of that name—appears, in fact, to be carried on with greater profit to the actual miners than to the holders or owners of the concessions.

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The production of rich silver ore and argentiferous lead, copper, arsenic, zinc, and sulphur ores amounted, in 1909, to 7,617 tons, valued at 699,281 marks, as compared with 7,827 tons in 1908.

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The production of the two State furnaces in Freiberg—the Muldner Hütte with mint and shot works and the Halsbrucker Hütte—and that of the two smalt works in Schneeberg (Oberschlema and Pfannenstiel) is not exactly stated; but a table is given showing the products sold from the State furnaces and smalt works in 1909. It includes:

Products.	1908		1909	
	Weight.	Value.	Weight.	Value.
	Kilograms.	*Marks.*	*Kilograms.*	*Marks.*
Fine gold [1]	3,424	9,565,066	3,824	10,682,735
Fine silver [1]	82,828	6,005,331	85,325	6,033,710

[1] Including gold and silver in the alloys sent in for separation.

The deliveries of the Freiberg mixed silver, lead, copper, sulphur, and arsenic ores at the Freiberg State furnaces amounted in 1909 to 11,365 tons, as compared with 13,669 tons in 1908. From these ores, which formed, as a fact, only 18 per cent by weight and 6 per cent by value of the total ore deliveries, there were obtained, in addition to copper, sulphur, and arsenic, 7,899 kilograms of silver and 1,487 tons of lead, which compares with 8,609 kilograms of silver and 1,493 tons of lead extracted in 1908. The average silver content of the ores increased, therefore, from 0.063 per cent in 1908 to 0.069 per cent in 1909. A large increase, moreover, may be observed in the average lead yield.

Great Britain.

In the absence of any official information from the American ambassador in London relative to the production of gold and silver in that country for 1909, we quote returns from the Mining Journal. London, viz, 2,863 ounces of gold and 459,747 ounces of silver, Assuming that these are fine ounces, the value of the gold would be $59,183 and of the silver, $239,068.

[British Mineral Statistics, 1909.]

[From The Mining Journal, London, Dec. 3, 1910.]

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Mining for gold ores continued a moribund existence. The recovery was 1,210 ounces of bar gold, worth £4,400, and "estimated" to contain 1,041 fine ounces, as against 780 estimated fine ounces in 1908. From cupriferous iron pyrites it is estimated that 1,822 ounces of gold were recovered. No estimate is offered of the gold obtained from the various ores and concentrates reduced in this country.

Of silver 142,146 ounces were obtainable from domestic ores and 140 ounces from gold ores, while 317,461 ounces were estimated to have been extracted from cupriferous iron pyrites. Other sources of production are not considered.

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Greece.

This bureau has received no official information relative to the product of silver in Greece since 1905, consequently the product for that year is repeated for 1909, viz, 829,025 ounces fine, of the commercial value of $431,093.

ITALY.

The following figures for the production of gold and silver in Italy for 1909 are taken from the Revista del Servizio Minerario, Rome, 1910:

Gold produced from mines of the country, 2,890 tons, valued at 91,150 lire, and from metallurgical works, 15.136 kilograms, of the value of 34,000 lire; making a total valuation of 125,150 lire, equivalent to $24,154 in United States currency, representing 1,168 fine ounces or 36 kilograms fine.

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In gold mining only 4 out of 16 concessions were worked, and of these 2 only—the Valbianca and the Creas—were productive. At the former 890 tons and at the latter 2,000 tons of ore were treated. The production of metal was 15.136 kilos and some gold in pyrites.[1]

The amount of silver produced from the mines was 44 tons, valued at 67,800 lire; extracted from argentiferous lead, 93 tons, valued at 17,364 lire; extracted at metallurgical works, in the environment of the city of Genoa, from argentiferous lead, 18,000 kilograms, valued at 1,566,000 lire; extracted by cupellation, 2,534 kilograms, valued at 219,875 lire; extracted from argentiferous zinc, 229 tons, valued at 248,353 lire; making the total value of the product of silver in Italy during 1909, 2,119,392 lire, equivalent to $409,043, representing 786,620 fine ounces, or 24,467 kilograms fine.

NORWAY.

The American minister at Christiania reports that the Kongsberg silver mines produced during the period April, 1908, to June 30, 1909 (15 months), 8,287 kilograms of fine silver, which was sold for 542,611.29 crowns; consequently the estimated product for the fiscal year ended March 31, 1909 (12 months), would be 6,629 kilograms fine, equivalent to 213,122 fine ounces, of the commercial value of $110,823.

KONGSBERG SILVER MINES, NORWAY.

By H. L. LAWRENCE, M. I. M. M.

[From the Mining Journal, London, Mar. 5, 1910.]

The Kongsberg district in southern Norway is one of the oldest mining centers in Europe. It is one of the few spots where native silver is found in regular and persistent quantities.

The occurrence of the ore was first discovered in 1623, and like most mining finds, was due to chance. It is said that two children herding cattle came across the unusual looking mineral, which they brought home. Their parents recognized the value and established a considerable traffic, until they were arrested and made to disclose the source of their produce. The mines were then annexed to the Crown. From that date to the present day mining has been continued, either by Government or private company, without any serious interruption.

The town of Kongsberg was founded in 1624, and was for some time the seat of government. It lies picturesquely situated on the Laagen River, about 90 kilometers west of Christiania, from where it can be reached by rail.

The mines have been worked on both sides of the river. Those which have been most extensively in operation lie immediately west of the central part of the town.

The Government has kept close hold of the whole of the silver-bearing area until a few years ago, when certain portions were thrown open for public selection.

Concessions may be taken up of 100,000 square meters for a rental of 100 kroner a year (about £5 12s. 6d.)[2] and at least four men must be employed all the year round on each area granted.

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[1] From the Mining Journal, London, Oct. 29, 1910.

[2] 1 kroner=1s. 1½d.

The geological formation of this interesting district is well known, and has been described in many important works. A belt of crystalline schists runs approximately north and south, tilted at high angle; through this flows the River Laagen. The side hills of the valley rise to a height of some 700 feet, and are covered with excellent timber. The veins strike across the bedding planes of the schists at about right angles and have a slight dip to the south.

A great number of mines have been taken in hand from time to time, according to the enterprise of various rulers. The most persistent work has been done in the Armen and Kongens grube, Gottes Hulfe grube, Gabe Gottes grube, in the southern end of the field, and in the Samuel grube on the northern part. The workings in many places now approach 3,000 feet in depth, and so far show no indication of falling off in either quantity or quality of the ore; on the contrary, some of the deepest workings are as rich as any that have been exhausted. The Samuel and Kongens mine at their deepest level now carry an extraordinary rich vein of native silver, besides large quantities of high-grade impregnated ore.

The character of the ore may be described as being of two kinds, i. e., (1) a network of small veins from one-half inch to 3 inches in width, containing a high percentage of massive native silver, forming in places crystalline and jagged, sometimes laminated and stringy masses of several pounds, up to even hundredweights in weight; (2) between these veins the gangue is more or less impregnated with native silver, constituting an ore of varying grade. Sulphurets of silver occur, but play a very subordinate role.

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The economic reduction of the ore, owing to the absence of fluxing metal, has always been difficult. For may years the silver was run down in an iron matt, obtained by roasting pyrites and refined by the Pattison process and cupel. (The method is described in detail in Percy's "Metallurgy of silver.") Of late years this process has been in a great measure suspended, as owing to the great reduction in the value of silver, it has become too costly. Formerly ores containing as low as one-fourth per cent of silver were treated in this way. Large reserves have now accumulated underground, on surface, and in the tailings at the concentrating works.

At present only the rich concentrates containing 30 per cent and over are smelted. The practice is, after very careful handpicking underground, at the shaft head, and in the picking house, to crush and concentrate on jig and buddle. The products from the former are smelted, the latter are treated at the cyanide works.

Sweden.

The American minister at Stockholm reports that the product of gold and silver in Sweden during the calendar year 1909 was as follows: Gold, 15.265 kilograms fine, of the value of 37,608 crowns, and silver, 913.612 kilograms fine, valued at 55,687 crowns.

The weight of the gold is equivalent to 491 ounces fine, of the value of $10,150, and the silver, 29,373 ounces fine, of the commercial value of $15,274.

Russia.

The American ambassador to St. Petersburg gives the figures of the gold product of Russia in 1909 as 48,720.7896 kilograms fine, valued at 62,927,701 rubles. This weight is equivalent to 1,566,373 ounces fine, of the value of $32,379,804.

No official information relative to the product of silver has been received at this bureau since 1907, therefore the figures for that year—132,122 fine ounces—are repeated for 1909, with the commercial value of $68,703.

For some time private gold industry in Altai had been very inactive. Out of 304 mines now in private ownership only 40 are being exploited, and these produce from 10 to 15 poods of gold in the year (5,260 to 7,890 ounces), whilst in time past the annual production would reach as much as 200 poods (105,200 ounces.)

Gold Mining in Russia.

[From The Engineering and Mining Journal, New York, Jan. 29, 1910.]

The gold production of Russia, as reported to the Imperial Mint, to which the law requires all gold to be delivered, is reported by our special correspondent for six years past as follows:

	Poods.[1]
1903	2,302.175
1904	2,281.825
1905	2,016.900
1906	2,262.475
1907	2,314.450
1908	2,584.750
First half of 1909	[2] 1,141.625

For a series of years the returns for the second half of the year have been much larger than for the first half, the average being 40 and 60 per cent, respectively, on the year's total. Moreover, it is usual in estimating the production to allow 10 per cent for gold concealed or not delivered to the mint. Many engineers who have had experience in that country think that the allowance is too small. Estimating on that basis, however, the gold production of Russia for the year 1909 may be put at $34,160,000, a substantial increase ($3,215,000) over the preceding year. The gain was chiefly from the operations of a few companies, notably the Lena Gold Mining Co., Limited, which reported in the first half of 1909 a total of 674 poods.

According to our correspondent's analysis, in the first half of 1909 the Ural district reported 312.600 poods of gold, or 24 per cent of the total; the Tomsk district, or West Siberia, 140.300 poods, or 12.3 per cent; the Irkutsk and Amur districts, West Siberia, 688 poods, or 60.3 per cent. A further analysis shows that 74 per cent of the yield was from placers worked in the ordinary way; 4 per cent from dredges; 0.4 per cent from hydraulic operations; a total of 78.4 per cent from placers. The remaining 21.6 per cent was from quartz mines, chiefly in the Ural district; 18. 9 per cent being obtained by milling and 2.7 per cent by cyanide and other chemical processes.

Our correspondent, in further comment, says that the increase of production does not necessarily involve an improvement in the Russian gold-mining position at the end of 1909. The gain was due chiefly to the large increase in production of three or four companies which have adopted improved methods, or which are working new districts. In fact, considering the area of ground worked, the average production has rather decreased.

The adverse conditions are most marked in the Ural district. In the southern Ural the Kochkar system, from which brilliant results were expected in former times, has now partially failed and is making very poor returns. Some of the workings show a loss and the remainder have been supported chiefly by the lixiviation of the old tailings, which had accumulated at the mines. Some of the older mines in the Ural Mountains have been worked nearly 100 years, a few 150 years, and can no longer be exploited profitably, at least by the present system. There have not been new mines enough opened to take the place of these old operations.

The most promising region in Russia is found in the basins of the Vitim and Olekma Rivers in the Irkutsk Province and extending over into the Yakutsk Province. These gold fields are notable for their extent and for the high content of gold in the gravels. This is not only the most favored district in Russia, but it will not be far from the truth if it is claimed that the deeper placers of the region are the richest in the world. This district in West Siberia gives about one-third of the total yield of gold in Russia.

In East Siberia, in the Amur and the seacoast districts, the gold placers already show signs of exhaustion. This is especially the case in the Amur, where Blagoviestchenk, formerly the center of an important field, is now almost deserted, and other places are in the same condition. New methods of working are being tried, especially excavators and dredges, in the placers of these Provinces. Besides the exhaustion of some mining districts East Siberia has suffered very much from the lack of labor. The Chinese and Koreans, who formerly worked there in large numbers, are now excluded by the Government and are not allowed in the mines.

Gold dredging in Russia develops slowly, notwithstanding the number of low-grade placers where it is believed that dredges could be profitably employed. One reason for this is the lack of the capital necessary to install the machinery; another is the failure of a number of dredges, which were set at work without proper preliminary investigation of the ground, and which were not adapted to the local conditions. There are now about 60 dredges at work in the gold fields, but a number of them are operated at a loss.

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[1] 1 pood=36.112 pounds avoirdupois.

[2] As shown by the mint returns.

We may add to our correspondent's remarks the known fact that many operators in East Siberia have been disappointed because they were unable, owing to political conditions, to extend their operations into the placers of Manchuria, south of the Amur, which are known to be richer than those on the Russian side of the boundary.

FINLAND.

The Industri-Statistik of Finland, for 1908, gives the gold product of that country for 1908 as 2,502 grams, valued at 7,506 Finnish marks, equivalent to $1,449 in United States currency, representing 70 fine ounces.

GOLD PRODUCED IN FINLAND DURING THE LAST TEN YEARS.

[From Finland's Industrial Statistics for the year 1908, Helsingfors, 1910.]

Years.	Weight.	Value.
	Grams.	*Finnish marks.*
1899	2,620	8,384
1900	2,174	6,956
1901	1,974	6,316
1902	3,256	10,420
1903	2,995	9,586
1904	1,950	6,241
1905	925	2,960
1906	2,867	9,176
1907	3,559	10,750
1908	2,502	7,506

SERVIA.

The American minister at Bucharest, Roumania, reports that the gold and silver product of Servia for 1909 was $150,346 for gold, and $5,838 for silver. This value would represent, for the gold, 7,273 fine ounces, or 226 kilograms fine, and for silver, 11,226 fine ounces, or 349 kilograms of fine silver.

SPAIN.

The American minister at Madrid reports that the value of the gold product of Spain for 1909 was 15,048 pesetas, and that of the silver product, 12,843,976 pesetas. This valuation is equivalent to $2,904 in United States currency for the gold, and $2,478,887 (commercial value) for the silver, which represents 140 fine ounces or 4 kilograms of fine gold, and 4,767,091 fine ounces, or 148,276 kilograms of fine silver.

TURKEY.

As no official information has been received at this bureau from the American ambassador at Constantinople relative to the product of gold and silver in Turkey for 1909, the figures for 1908 are repeated for 1909, viz, 108 fine ounces of gold and 7,971 fine ounces of silver, of the respective values of $2,233 gold and $4,145 silver (commercial value).

ASIA.

British India.

The American consul at Bombay reports that the gold product of British India for 1909 was 17,400 kilograms, valued at £2,128,554, which is equivalent to $10,358,608 in United States currency, representing 501,097 fine ounces.

China.

As China publishes no statistics of her production of gold and silver, recourse is had to the figures of the imports of gold bullion from China by other countries.

The American ambassador at Berlin reports that there were imported into Germany from China during 1909, 6,551 kilograms of fine gold bullion, representing 210,615 fine ounces, valued at $4,353,798.

The American ambassador at Tokyo states that the value of the gold bullion imported into Japan from China during 1909 was 4,098,844 yen, equivalent to $2,042,864 in United States currency, representing 98,823 fine ounces. These figures are confirmed by our valued correspondent, Mr. A. Sauerbeck, London.

The Seaborne Trade and Navigation Accounts of British India, 1909, gives the value of imports of gold into that country from China during 1909 as £574,248 ($2,794,578 in United States currency), representing 135,188 fine ounces.

The Annual Statement of the Trade of the United Kingdom with Foreign Countries for 1909 gives the imports of gold from China into that country as £33,048 ($160,828 in United States currency), representing 7,780 fine ounces.

The following table is compiled from the above amounts:

Importing countries.	Fine ounces.	Value.
Great Britain	7,780	$160,828
British India	135,188	2,794,578
Germany	210,615	4,353,798
Japan	98,823	2,042,864
Total	452,406	9,352,068

3 and 4 Moorgate Street Buildings, E. C.,
London, August 15, 1910.

G. E. Roberts,
Director of the Mint, Washington.

Dear Sir: I give you overleaf the usual figures with regard to imports of gold into England from China and West Africa (British possessions), and into Germany from China.

Yours, faithfully, A. Sauerbeck.

Imports of Gold into United Kingdom from China and Hongkong.

Description.	1908.		1909.	
	Ounces.	Value.	Ounces.	Value.
British coin	[1] 51,593	[1] £201,219	15,092	.....
Bullion, unrefined	.....	.....	3,301	.....
Bullion, refined	.....	.....	4,951	.....
Total	51,593	201,219	23,344	£91,816

[1] New classification introduced for 1908 and 1909.

IMPORTS OF GOLD FROM BRITISH WEST AFRICA.

Description.	1908.		1909.	
	Ounces.	Value.	Ounces.	Value.
British coin	617			
Bullion, unrefined	291,546		251,061	£971,904
Total	292,163	£1,135,339	251,061	971,904

IMPORTS OF GOLD INTO GERMANY FROM CHINA.

Description.	1908.		1909.	
	Kilograms, fine.	Value.	Kilograms, fine.	Value.
Gold bullion	7,211	*Marks.* 19,830,000	6,551	*Marks.* 18,303,000

INDO-CHINA.

The American ambassador at Paris reports that the production in Indo-China for 1908 was valued at 340,000 francs, equivalent to $65,620, representing 3,174 fine ounces.

As no product has been reported for 1909, the figures of 1908 are repeated.

JAPAN.

The American ambassador at Tokyo gives the following corrected figures for the product of gold and silver in Japan and Formosa for 1908, and the estimated product for 1909, as follows:

1908.

Countries.	Gold.			Silver.		
	Momme.[1]	Fine ounces.	Value in United States currency.	Momme.[1]	Fine ounces.	Commercial value in United States currency.[2]
Japan proper	959,441			32,846,707		
Formosa	441,271			271,839		
Total	1,400,712	168,874	$3,490,935	33,118,546	3,992,854	$2,135,777

1909.

Countries.	Gold.			Silver.		
	Momme.[1]	Fine ounces.	Value in United States currency.	Momme.[1]	Fine ounces.	Commercial value in United States currency.[3]
Japan proper	1,078,141			35,215,084		
Formosa [4]	441,271			271,839		
Total	1,519,412	183,184	$3,786,749	35,486,923	4,278,392	$2,224,764

[1] The momme is equivalent to 57.87 grains.
[2] Commercial value for 1908, $0.5349.
[3] Commercial value for 1909, $0.52.
[4] Actual figures for 1908 repeated.

KOREA.

The Tenth Financial Economic Annual of Japan, 1910, states that the gold from deep mines and placer mining in Korea produces over 10,000,000 momme per year, which is valued at 4,000,000 yen, the equivalent of which in United States currency is $1,993,600, representing 96,440 fine ounces.

SIAM.

As there is no information relative to the gold produced in Siam during 1909, the figures for 1908 are repeated, viz, 493 kilograms, or 15,850 fine ounces of the value of $327,649.

EAST INDIES.

BRITISH EAST INDIES.

The Report of the Department of Mines of Western Australia, 1909, gives the product of the Territory of Papua (British New Guinea) for 1909 as 12,941 fine ounces, valued at £54,969, which is equivalent to $267,514 in United States currency.

BRITISH NEW GUIANA.

[From the Mining World and Engineering Journal, London, Apr. 9, 1910.]

SYDNEY, *March 1, 1910.*

* * * * * * *

The real productiveness of the Papuan or British New Guiana gold fields is but little known, save to the initiated few. With due attention to hygiene, for which most miners have a profound contempt, the fields are as healthy as any in northern Queensland or the northern territory, and, according to official figures, 102 miners, working with the assistance of native labor, on six fields obtained from June, 1907, to June, 1908, gold to the value of over £52,000. But it is not a poor man's field. No one can go out with a dish and a pannikin—a camp outfit—and a sack of provisions and hope to return laden with nuggets. "The gold," says an official publication, "is nearly all in the far interior and must be reached by many days of travel, through thick forests and over high mountains. Carriers have to be engaged and something like a small expedition fitted out even to reach the fields. Native workers are required to dig and wash the gold, since it has nowhere been found in such paying quantities as to enable a single white man to gather enough by his own efforts. In fact, a miner must have £200 at least to start on when he arrives in the country, and even then he will probably need credit from the stores, if any, on the fields."

Since 1895 gold to the value of nearly £1,000,000, probably much more, has been obtained from the fields, mostly by primitive and wasteful methods, which leave untouched the main sources of supply. Only one field has machinery for extracting gold from the stone, all the rest being worked by a mere scratching of the soil. Valuable reefs have not been found so far, but of their existence there can be no question. The difficulties of prospecting in a mountainous country covered with dense bush and forests explains why the coveted discoveries have yet to be made. Several of the rivers are richly auriferous, and from two—the Gira and the Mambare—gold dust to the value of £500,000 has been obtained within the last few years. In addition to gold, silver, lead, copper, cinnabar, iron, oemiridium, gypsum, manganese, sulphur, graphite, and mica have been found, and the existence of coal is reported. Papua is, in fact, a country rich in minerals, and is apparently destined to become one of the great mining fields of the future, but at present its resources are locked up from want of population and capital.

[From the Mining Journal, London, Feb. 19, 1910.]

The development of the mineral wealth of New Guinea has long been foreshadowed by our correspondents in Australia, and the flotation of the British New Guinea Development Co., an enterprise powerfully backed by capital to exploit the natural wealth

of these territories, brings us appreciably nearer its realization. Papua has many claims to our interest. To geographers it is known as second in size, among islands, only to the continent of Australia, off the northern coast of which it is situated. From an imperial point of view it has an attractiveness of its own in the fact that, since its administration has been vested in the government of the Commonwealth, it presents us with the unique spectacle of a dependency controlling and administering a subsidiary colony upon its own account.

* * * * * * *

Mining in New Guinea is no new industry, as the history of its production during the last eight years abundantly testifies. Gold has been found in the Louisiade Islands, on the mainland, and on Woodlark Island.

* * * * * * *

During the last eight years the following gold output has been made:

1901	£32,926	1905	£56,362
1902	42,208	1906	58,496
1903	41,139	1907	39,710
1904	55,686	1908	52,837

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BRITISH NORTH BORNEO.

No official figures showing the gold product of this colony for 1909, therefore the figures given for 1907 (the latest obtainable) are repeated, viz, 41,751 fine ounces, valued at $863,070.

FEDERATED MALAY STATES.

The American consul general at Singapore gives the value of the gold product of these States for 1909 as £62,943, which is equivalent to $306,312 in United States currency, representing 14,818 fine ounces.

DUTCH EAST INDIES.

From the best information available, the production of gold and silver in Dutch East Indies was as follows: Gold, 103,832 ounces, and for silver, 465,980 ounces, of the respective values, in United States currency, of $2,146,398 and $242,310 (silver commercial value).

The American minister at The Hague gives the following official figures for the gold and silver product of the Dutch East Indies for the years 1906, 1907, and 1908:

PRODUCT OF MINES—EAST INDIA.

Years.	Gold.		Silver.	
	Weight.	Value.	Weight.	Value.
	Grams.	*Florins.*	*Grams.*	*Florins.*
1906	2,619,335	4,117,379	8,422,257	454,065
1907	3,206,505	5,173,837	11,152,493	552,015
1908	4,076,589	6,458,459	16,270,193	761,039

The weight and value of the above, calculated from the florin values, were as follows:

Years.	Gold.			Silver.		
	Kilograms.	Fine ounces.	Value.	Kilograms.	Fine ounces.	Commercial value.
1906	2,490	80,069	$1,655,186	8,387	269,665	$182,534
1907	3,129	100,614	2,079,882	10,434	335,454	221,910
1908	3,906	125,596	2,596,300	17,790	571,952	305,937

GOLD AND SILVER PRODUCTION OF NETHERLANDS-INDIES, 1899–1908.

[From Annual Statistics of the Kingdom of the Netherlands, 1908.]

Years.	Gold.			Silver.
	Sumatra.	Borneo.	Menado.	Sumatra, Borneo, Menado.
	Kilograms.	*Kilograms.*	*Kilograms.*	*Kilograms.*
1899	10	103	.....	65
1900	352	61	15	2,292
1901	582	1,051	446	3,727
1902	707	(1)	656	3,801
1903	1,185	[2] 252	684	5,561
1904	1,207	244	554	5,749
1905	1,656	552	85	7,729
1906	1,895	57	634	8,422
1907	2,476	[3] 77	653	11,152
1908	3,400	[4] 91	585	16,270

[1] The gold produced had a value of 78,750 florins.
[2] Valued at more than 10,971 florins.
[3] Valued at more than 8,000 florins.
[4] Valued at more than 5,400 florins.

AUSTRALASIA.

The fortieth annual report of the deputy master and comptroller of the mint, London, for 1909, gives the gold and silver product of Australasia as follows:

States.	Gold.		Silver.	
	Fine ounces.	Value in United States currency.	Fine ounces.	Commercial value.
New South Wales	204,709	$4,231,711	10,584,791	$5,504,091
New Zealand	472,465	9,766,718	1,813,831	943,192
Queensland	455,576	9,417,592	1,001,383	520,719
South Australia	7,989	165,147	.....	.....
Tasmania	44,777	925,623	2,797,115	[1] 1,454,500
Victoria	654,222	13,523,969	29,961	15,580
Western Australia	1,595,269	32,977.137	132,203	68,746
Total	3,435,007	71,007,897	16,359,284	8,506,828

[1] This product is given by the American consul at Hobart, it being the value of silver contained in 80,378 tons of silver-lead ore.

GOLD PRODUCTION OF AUSTRALASIA, 1909.

[From the Australasian Insurance and Banking Record, Melbourne and Sydney, January, 1910.]

The gold production of Australia and New Zealand for the year 1909 amounts approximately to 3,442,709 fine ounces. The value is £14,623,689, or a decrease of £443,891 as compared with 1908. The following is a comparison of the returns for the years 1907, 1908, and 1909:

States.	1907	1908	1909
	Fine ounces.	*Fine ounces.*	*Fine ounces.*
Victoria	695,576	671,208	654,222
New South Wales	247,363	224,792	204,709
Queensland	466,476	465,085	450,937
Western Australia	1,697,553	1,647,911	1,595,263
South Australia	11,871	9,161	7,989
Tasmania	65,354	57,085	44,669
Total, Commonwealth	3,184,193	3,075,242	2,957,789
New Zealand	477,312	471,968	484,920
Total	3,661,505	3,547,210	3,442,709

Every Australian State shows a reduced yield, and the total decrease for the whole of the Commonwealth as compared with 1908 is 117,453 ounces, and as compared with 1907, 226,404 ounces. New Zealand, on the other hand, shows a slight increase. There are several causes assignable for the Australian decrease, including the superior attractions in some States of other forms of mining, the discouragement occasioned by higher costs, and the facility with which other kinds of employment can be obtained in consequence of the general prosperity. There is no reason to think that the gold fields are reaching the exhaustive stage.

The value of the production for the last three years, reckoned at the statutory price of £3 17s. 10½d. per ounce standard (eleven-twelfths fine) is stated as follows:

States.	1907	1908	1909
Australia	£13,525,583	£13,062,789	£12,563,881
New Zealand	2,027,491	2,004,791	2,059,808
Total	15,553,074	15,067,580	14,623,689

For the past year the net decrease in value is £443,891; but compared with 1906 the decrease is £2,257,531—a rather serious diminution in the proceeds of Australasian gold mining. Of the latter sum, Australia accounts for £2,046,432, and New Zealand for £211,099.

The value of the gold received at the mints during the last three years is stated as follows:

Location of mint.	1907	1908	1909
Sydney	£2,866,642	£2,543,792	£2,297,230
Melbourne	3,646,704	3,666,394	3,539,328
Perth	5,412,597	5,490,815	5,138,187
Total	11,925,943	11,701,001	10,974,745

The Sydney returns include gold received from New Guinea, but the quantity is comparatively small. A considerable quantity of New Zealand gold is also included.

The value of the issues of coin and bullion issued by the mints during the last three years is stated with details as follows:

Mint issues.	1907	1908	1909
Coin (sovereigns and half sovereigns):			
Sydney	£2,539,000	£2,286,000	£2,057,000
Melbourne	3,332,691	3,282,665	3,122,585
Perth	4,972,289	4,887,951	4,546,252
Total coin	10,843,980	10,456,616	9,725,837
Bullion:			
Sydney	337,421	244,266	241,796
Melbourne	314,022	363,913	417,909
Perth	436,479	521,633	601,918
Total bullion	1,087,922	1,129,812	1,261,623
Total coin and bullion	11,931,902	11,586,428	10,987,460

The proportion of the total production sent to the three mints in 1909 was about 75 per cent against 77¾ per cent in 1908, and 76¾ per cent in 1907. A large proportion of the balance was contained in concentrates shipped to Europe for treatment. It may be questioned whether the whole of the gold in concentrates is returned, and certainly the exact quantity can not be ascertained until the process of extraction is complete.

The customs department has courteously complied with our desire to obtain the official record of shipments of gold in 1909, and we are therefore able to present the following exact comparative statement for the last three years:

EXPORTS OF GOLD.

Classification.	1907	1908	1909
Coin	£6,857,838	£10,438,665	£5,349,066
Bullion[1]	4,036,067	3,889,173	3,600,865
Total	10,893,905	14,327,838	8,949,931

[1] Including bar, dust, ingot, and sheet, and contained in matte.

We are now able to investigate the important question of the relation of the shipments of gold coin to the amount of coin issued by the mints. The figures for the past three years are as follows:

Years.	Gold coin issued by the Australian mints.	Gold coin shipped.
1909	£9,725,837	£5,349,066
1908	10,456,616	10,438,665
1907	10,843,980	6,857,838
Total	31,026,433	22,645,569

The issues have exceeded the shipments by £8,380,864. This sum is not, however, fully represented by the increase in the banks' holdings of coin, which for the three years is approximately shown as follows:

Average amount of coin (including subsidiary coins) held by the banks of the Commonwealth:

September quarter:	
1909	£25,374,662
1906	21,092,685
Increase	4,281,977

Between this increase and the excess of the issues of new coin over the shipments there is a difference of over £4,000,000. This difference may be accounted for by pocket money taken away by passengers from Australia and by defective entries at the customshouse. It is large enough to make the task of accurately following gold movements a difficult one.

AFRICA.

The value of the gold product of Africa for 1909 was $170,988,632, representing 8,271,575 ounces, fine, and the commercial value of the silver product, $559,820, representing 1,076,577 ounces, fine.

Year.	Transvaal.		West Coast.		French colonies.[1]		Rhodesia.[2]		Total.	
	Weight.	Value.	Weight.	Value.	Weight.	Value.	Weight.	Value.	Weight.	Value.
	Kilos.		*Kilos.*		*Kilos.*		*Kilos.*		*Kilos.*	
1889..	11,719	$7,788,372	1,270	$844,262	261	$173,461	([3])	.....	13,250	$8,806,095
1890..	15,706	10,438,356	1,062	705,705	261	173,461	([3])	.....	17,029	11,317,522
1891..	22,398	14,885,639	1,289	856,730	261	173,461	([3])	.....	23,948	15,915,830
1892..	34,938	23,220,108	1,528	1,011,924	[4] 261	173,461	([3])	.....	36,722	24,405,493
1893..	42,573	28,293,831	977	649,695	261	173,461	([3])	.....	43,811	29,116,987
1894..	59,730	39,696,330	865	574,653	261	173,461	([3])	.....	60,856	40,444,444
1895..	66,045	43,893,300	995	661,630	261	173,461	([3])	.....	67,301	44,728,391
1896..	65,874	43,779,669	945	627,938	261	173,461	([3])	.....	67,080	44,581,068
1897..	86,720	57,633,861	751	499,311	640	425,510	([3])	.....	88,111	58,558,682
1898..	119,190	79,213,953	518	343,928	189	125,987	669	$444,617	120,566	80,128,485
1899..	107,410	71,384,561	422	280,185	344	228,512	1,700	1,129,773	109,876	73,023,031
1900..	9,215	6,124,226	326	216,873	1,115	741,029	2,392	1,589,815	13,048	8,671,943
1901..	8,026	5,333,994	216	143,813	958	636,700	4,476	2,974,943	13,676	9,089,450
1902..	52,514	34,901,140	109	6,552	1,127	748,976	5,065	3,366,561	58,716	39,023,725
1903..	92,468	61,454,439	2,028	1,347,845	1,701	1,130,358	6,117	4,065,489	102,314	67,998,131
1904..	117,371	78,004,559	2,544	1,690,770	2,143	1,424,340	7,214	4,794,208	129,272	85,913,881
1905..	152,707	101,489,199	4,351	2,891,928	2,312	1,536,353	11,040	7,337,211	170,410	113,254,691
1906..	179,986	119,618,507	6,426	4,270,685	2,086	1,386,068	15,171	10,082,747	203,669	135,358,007
1907..	200,665	133,361,943	8,456	5,620,248	2,712	1,802,676	16,851	11,199,181	228,685	151,984,048
1908..	219,475	145,862,971	8,687	5,773,333	2,801	1,861,754	19,594	13,022,460	250,557	166,520,518
1909..	226,903	150,799,880	7,381	4,905,461	3,098	2,059,336	19,898	13,223,955	257,280	170,988,632

[1] Includes Madagascar, Algeria, and the French Sudan. For 1903 and 1904, Madagascar only. For 1905, figures for Madagascar and Egypt. For 1906 and 1907, Madagascar and Egypt for 1905 repeated.

[2] Includes Mozambique, Cape Colony, and Natal for all years except 1901, which does not include product of Mozambique or Natal. For 1903, includes Rhodesia, Cape Colony, and Natal. For 1904 and 1905, Rhodesia, Cape Colony, and Mozambique. For 1906 and 1907, Rhodesia, Cape Colony, Mozambique, Natal, and Bechuanaland.

[3] Previous to 1898 Rhodesia and Mozambique together produced 289 kilograms, fine, included in the Transvaal returns.

[4] Previous to 1897 the only figures obtainable were those for 1892—Madagascar only.

BECHUANALAND.

The American minister at London reports that the product of gold and silver in Bechuanaland for 1909 was 6,632 ounces of gold and 708 ounces of silver. Assuming that these were fine ounces, the value of the gold would be $137,096 and that of the silver $368 in United States currency.

CAPE COLONY.

The American consul general at Cape Town reports the product of gold in that colony for 1909 as 4.93444 kilograms, or 158.642 fine ounces, of the value of $3,279.

EGYPT.

The American consul at Alexandria, Egypt, reports to us that the value of the product of gold in that country during 1909 was £12,369, equivalent to $60,197 in United States currency, representing 2,912 fine ounces.

MADAGASCAR.

The American consul at Tamatave reports the gold product of Madagascar for 1909 as 3,696 kilograms, valued at 10,358,234 francs, equivalent to $1,999,139 in United States currency, representing 96,708 fine ounces.

MOZAMBIQUE.

The annual statement of the trade of the United Kingdom states the value of the imports of gold from Portuguese East Africa during 1909 as £33,633 equivalent to $163,675 in United States currency, representing 7,918 fine ounces.

NATAL.

A report from the American embassy at London gives the gold product of Natal for 1909 as 1,612 fine ounces, valued at £6,767. The value of the ounces in United States currency would be $33,323.

RHODESIA.

The fifteenth annual report of the Rhodesia Chamber of Mines gives the product of gold in Rhodesia for 1909 as 623,388.42 fine ounces of the value of £2,623,709, and 262,132.72 fine ounces of silver, valued at £26,495. The value of the ounces in United States currency is $12,886,582 for gold, and $136,309 (commercial value) for silver.

Months.	Gold.		Silver.
	Ounces.	Value.	Ounces.
1909.			
January	48,620.86	£204,666	20,172.15
February	45,744.13	192,497	20,470.41
March	48,030.15	202,157	20,453.68
April	52,905.73	222,700	21,495.31
May	53,466.83	225,032	22,115.98
June	51,678.39	217,521	23,048.80
July	53,510.85	225,234	23,342.29
August	54,253.28	228,296	24,141.16
September	50,680.82	213,249	23,150.14
October	52,903.60	222,653	22,696.08
November	56,147.64	236,307	21,201.76
December	55,446.14	233,397	19,844.96
Total	623,388.42	2,623,709	[1] 262,132.72

[1] Value £26,495.

TRANSVAAL.

The American consul at Johannesburg reports that the product of the Transvaal for 1909 was, 226,903.397 kilograms, fine, of gold valued at £30,987,650, and 25,310.601 kilograms, fine, of silver, valued at £85,740.

The weight of the gold represents 7,294,944 fine ounces of the value of $150,799,880, and that of the silver, 813,736 fine ounces, of the commercial value of $423,143.

WEST AFRICA.

Report from the American embassy at London states that the gold product of "Gold Coast Colony" for 1909 was valued at £1,008,006; which is equivalent to $4,905,461, representing 237,302 fine ounces.

GOLD IN LIBERIA.

DISCOVERY OF THE METAL IN PAYING QUANTITIES REPORTED.

[From Daily Consular and Trade Reports, Feb. 4, 1910.]

Chargé d'Affairs George W. Ellis, of Monrovia, reports as follows, concerning the recent discovery of gold in Liberian streams:

Gold has been discovered in Liberia, about 30 miles from the coast, near two civilized settlements. The discoverer called at this consulate general with a quantity of the metal which he had obtained near the settlements, together with photographs showing himself and his native laborers at work. * * *

The discoverer has been engaged for the past few months in gold washing in Montserrado County, about 50 miles from Monrovia. Steam-launch transportation is afforded from Monrovia up the St. Paul River for about 20 miles, thence overland to the section to be exploited. The gold has been recovered from the beds of small streams, although the discoverer has located the metal in the larger streams. In 13 days, at a cost of about $15, he secured $57.60 worth of gold, according to his submitted statement, and with skilled labor, and up to date appliances the product could be greatly increased.

The manager of the Liberian Development Co. has just come out from London to invest in the development of its mining rights, and it is reported that the company is prepared to enter earnestly into enlarging its mining properties and in prospecting for new and better discoveries in the rich mineral sections of the Republic.

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PART IV.

GENERAL STATISTICS.

No. 1.—Domestic Production, Deposits, and Purchases of Gold

	Locality and description of deposits.	Philadelphia.	San Francisco.	New Orleans.	Denver.	New York.
		Stand. oz.	*Stand. oz.*	*Stand. oz.*	*Stand. oz.*	*Stand. oz.*
1	Alabama			1.279		20.026
2	Alaska	439.472	341,248.335	24.385	594.286	525.938
3	Arizona	160.748	20,916.991		15,890.859	25,973.688
4	California	364.492	268,086.854		74.793	11,955.975
5	Colorado	706.011	39.150		297,088.239	22.130
6	Georgia	423.157				
7	Idaho	125.077	55.234		1,212.505	
8	Maryland					
9	Michigan					.171
10	Missouri			.992		
11	Montana	17.527	190.113		1,644.190	10.601
12	Nevada	24.101	117,559.550	10.048	9,727.746	43.141
13	New Mexico	17.433	74.043	7.005	4,121.173	4,141.486
14	North Carolina	411.346				665.684
15	Oklahoma			1.184		
16	Oregon	127.929	7,814.073			
17	South Carolina	7.450				
18	South Dakota		855.860		12.252	286,336.010
19	Tennessee	2.022				
20	Texas				3.540	
21	Utah		7.881		8,065.164	
22	Virginia	48.277				
23	Washington	25.423	39.339		50.207	
24	Wyoming				118.115	
25	Porto Rico					30.343
26	Philippines	1.673	95.312			9.594
27	Other	319.700				
28	Total domestic	3,221.838	756,982.735	44.893	338,603.069	329,734.787
29	Domestic bullion, refinery bars	3,524.383			478,507.187	216,465.789
30	Domestic bullion, refined	35.277	861,427.847			1,711,307.583
31	Total domestic bullion	6,781.498	1,618,410.582	44.893	817,110.256	2,257,508.159
32	Domestic coin, mutilated	10,212.422	824.831	1,858.650	19.767	36,786.735
33	Domestic coin transferred	75,086.620	368.120			
34	Foreign bullion, crude	3,678.518	38,095.551	40,545.811	243.625	201,999.370
35	Foreign bullion, refined					522,646.036
36	Foreign coin	322.650	1,142.043	216.321		6,232.087
37	Jewelers' bars, old plate, etc	65,422.028	8,197.432	3,246.562	3,311.390	204,405.128
38	Surplus bullion	475.511	2.367	73.015	909.732	
39	Assayers' remnants				49.060	
40	Deposit melting room, grains	56.146	66.576	21.115	64.815	254.096
41	Deposit melting room, grain bar, Charlotte.	2.969				
42	Deposit melting room, grain bar, melted and refined, New York.	60.359				
43	Recovery from refinery pipes				58.504	
44	Recovery from C. W. Dakin				24.385	
45	Total deposits	162,098.721	1,667,107.502	46,006.367	821,791.534	3,229,831.611
	Redeposits:					
46	Fine bars	7,163.484	70.317			552.566
47	Unparted bars	1,282,101.197	417,215.477		426,177.984	3.485
48	Mint bars	7,000.490				
49	Total redeposits	1,296,265.171	417,285.794		426,177.984	556.051
50	Total bullion	1,458,363.892	2,084,393.296	46,006.367	1,247,969.518	3,230,387.662

STATISTICS.

BY WEIGHT, DURING THE CALENDAR YEAR ENDED DECEMBER 31, 1909.

Carson.	Boise.	Helena.	Charlotte.	St. Louis.	Deadwood.	Seattle.	Salt Lake City.	Total.	
Stand. oz.	*Stand. oz.*	*Stand. oz.*	*Stand. oz.*	*Stand. oz.*	*Stand. oz.*	*Stand. oz.*	*Stand. oz.*	*Stand. oz.*	
			3.691					24.996	1
103.725		191.182		306.441		602,910.130	12.921	946,356.815	2
						9.874	8.581	62,960.741	3
5,345.956						112.812	102.195	286,043.077	4
				12.525		20.888	49.996	297,938.939	5
			659.005					1,082.162	6
	39,241.085	1,287.532		70.297		847,499	152.596	42,991.825	7
			.254					254	8
								171	9
								992	10
	138.699	105,521.958		75.873		217.592		107,816.553	11
102,460.567	80.283	2.605				44.716	19,288.331	249,241.088	12
	7.088							8,368.228	13
			608.571					1,685.601	14
								1.184	15
	13,593.727	2.706				694.408	61.165	22,294.008	16
			108.680					116.130	17
					58,682.981		9.927	345,897.030	18
			19.327					21.349	19
								3.540	20
	30.499						35,966.795	44,070.339	21
			17.014					65.291	22
	183.280	687.868				825.917		1,812.034	23
					36.386		3.991	158.492	24
								30.343	25
								106.579	26
			39.444	2.015				361.159	27
107,910.248	53,274.661	107,693.851	1,455.986	467.151	58,719.367	605,683.836	55,656.498	2,419,448.920	28
			3,079.244	1,408.727				702,985.330	29
				7,083.028		3.596		2,579,857.331	30
107,910.248	53,274.661	107,693.851	4,535.230	8,958.906	58,719.367	605,687.432	55,656.498	5,702,291.581	31
				20,217.060		8.903		69,928.368	32
								75,454.740	33
				62.453		63,540.539	14.528	348,180.395	34
						15,237.604		537,883.640	35
		10.395						7,923.496	36
7.757		91.875	57.169	2,249.474		1,094.881	270.622	288,354.318	37
								1,460.625	38
								49.060	39
177.022	19.058	29.012	2.570	3.038	32.557	99.900	5.746	831.651	40
								2.969	41
								60.359	42
								58.504	43
								24.385	44
108,095,027	53,293.719	107,825.133	4,594.969	31,490.931	58,751.924	685,669.259	55,947.394	7,032,504.091	45
								7,786.367	46
		138.666				8.039		2,125,644.848	47
								7,000.490	48
		138.666				8.039		2,140,431.705	49
108,095.027	53,293.719	107,963.799	4,594.969	31,490.931	58,751.924	685,677.298	55,947.394	9,172,935.796	50

No. 2.—Denotes Production, Deposits, and Purchases of Silver,

	Locality and description of deposits.	Philadelphia.	San Francisco.	New Orleans.	Denver.	New York.
		Stand. ozs.	*Stand. ozs.*	*Stand. ozs.*	*Stand. ozs.*	*Stand. ozs.*
1	Alabama					6.50
2	Alaska	42.29	41,533.98	3.68	319.10	81.20
3	Arizona	12.14	7,177.71		4,672.37	10,084.15
4	California	44.77	54,507.63		27.37	1,359.09
5	Colorado	2.39	2.03		307,861.81	3.95
6	Georgia	63.01				
7	Idaho	1,067.51	10.55		661.03	
8	Maryland					
9	Michigan	9,331.01				17,092.87
10	Missouri			140.69		
11	Montana	1.39	27.02		265.64	1.59
12	Nevada	21.80	34,729.03	5.32	6,235.45	32.28
13	New Mexico	15.12	25.51	.50	3,848.03	177,387.66
14	North Carolina	92.60				165.97
15	Oklahoma			.11		
16	Oregon	16.61	1,246.87			
17	South Carolina	.61				
18	South Dakota		125.49		2.43	92,362.68
19	Tennessee	.11				
20	Texas				.13	
21	Utah		.38		8,516.91	
22	Virginia	5.39				
23	Washington	23.84	10.74		42.66	
24	Wyoming				12.13	
25	Porto Rico					56.30
26	Philippines	.80	26.25			2.37
27	Other	122.95				
28	Total domestic	10,864.34	139,423.19	150.30	332,465.06	298,636.61
29	Domestic bullion, refinery bars	12.16			23,242.58	46,907.17
30	Domestic bullion, refined	28,030.97		251,090.38	279,040.50	931,644.77
31	Total domestic bullion	38,907.47	139,423.19	251,240.68	634,748.14	1,277,188.55
32	Domestic coin mutilated	2,219.47	306.83	158.21	20.69	
33	Domestic coin transferred	595,741.87	31,667.75	22,543.80		
34	Trade dollars	197.49				
35	Foreign bullion, crude	99,696.55	86,800.18	21,723.00	358.90	1,231,478.75
36	Foreign bullion, refined					513,019.86
37	Foreign coin	88.38	2.88	8,680.68		7,773.56
38	Philippine coin for recoinage		2,955,797.30			
39	Philippine assay coins	6,376.77				
40	Jewelers' bars, old plate, etc	77,019.05	11,213.05	7,468.06	2,491.00	474,235.99
41	Surplus bullion		12,449.82	401.82	1,416.03	817.76
42	Deposit, melting-room grains	111.84	48.36	24.46	27.10	299.43
43	Recovery from C. W. Dakin				1.66	
44	Assayers' remnants				15.27	
45	Deposit, melting room grain bar, Charlotte.	1.14				
46	Deposit, melting-room grain bar, melter and refiner, New York.	127.36				
47	Total deposits	820,487.39	3,237,709.36	312,240.71	639,078.79	3,504,813.90
	Redeposits:					
48	Fine bars	172,036.77				108,223.99
49	Unparted bars	1,715,403.74	79,753.69		84,777.11	98.12
50	Mint bars	985,589.73		69.59		
51	Total redeposits	2,873,030.34	79,753.69	69.59	84,777.11	108,322.11
52	Total bullion	3,693,517.63	3,317,463.05	312,310.30	723,855.90	3,613,136.01

BY WEIGHT, DURING THE CALENDAR YEAR ENDED DECEMBER 31, 1909.

Carson.	Boise.	Helena.	Charlotte.	St. Louis.	Deadwood.	Seattle.	Salt Lake City.	Total.	
Stand. ozs.	*Stand. ozs.*	*Stand. ozs.*	*Stand. ozs.*	*Stand. ozs.*	*Stand. ozs.*	*Stand. ozs.*	*Stand. ozs.*	*Stand. ozs.*	
			0.52					7.02	1
7.27		21.33		62.03		77,901.94	1.87	119,974.69	2
						2.87	3.87	21,953.11	3
913.49						26.10	23.54	56,901.99	4
				5.16		12.93	29.84	307,918.11	5
			120.20					183.21	6
	21,803.20	307.14		21.46		224.66	26.28	24,121.83	7
			.02					.02	8
								26,423.88	9
								140.69	10
	12.36	63,231.77		25.97		46.63		63,612.37	11
37,973.46	58.01	.80				23.42	34,157.43	113,237.00	12
	.74							181,277.56	13
			127.74					386.31	14
								.11	15
	5,637.82	.37				85.74	55.53	7,042.94	16
			20.19					20.80	17
					87,246.22		1.12	179,737.94	18
			1.16					1.27	19
								.13	20
	.84						435.15	8,953.28	21
			1.90					7.29	22
	47.18	166.24				322.50		613.16	23
					5.96		.45	18.54	24
								56.30	25
								29.42	26
			11.74	.19				134.88	27
38,894.22	27,560.15	63,727.65	283.47	114.81	87,252.18	78,646.79	34,735.08	1,112,753.85	28
			248.68	9.10				70,419.69	29
								1,489,806.62	30
38,894.22	27,560.15	63,727.65	532.15	123.91	87,252.18	78,646.79	34,735.08	2,672,980.16	31
								2,705.20	32
								649,953.42	33
								197.49	34
				30.67		13,342.31	1.00	1,453,431.36	35
								513,019.86	36
		12.66						16,558.16	37
								2,955,797.30	38
								6,376.77	39
8.20		59.95	13.85	926.26		300.05	114.00	573,849.46	40
								15,085.43	41
134.47	26.32	15.52	.47	7.39	42.47	76.58	6.15	820.56	42
								1.66	43
								15.27	44
								1.14	45
								127.36	46
39,036.89	27,586.47	63,815.78	546.47	1,088.23	87,294.65	92,365.73	34,856.23	8,860,920.60	47
								280,260.76	48
		16.26				1.96		1,880,050.88	49
								985,659.32	50
		16.26				1.96		3,145,970.96	51
39,036.89	27,586.47	63,832.04	546.47	1,088.23	87,294.65	92,367.69	34,856.23	12,006,891.56	52

No. 3.—Mutilated and Uncurrent Domestic Gold and Silver Coin Trans
during the Cal

	Denomination.	Philadelphia		San Francisco.		New Orleans.	
		Received from Treasury.	Purchased.	Received from Treasury.	Purchased.	Received from Treasury.	Purchased.
	GOLD.						
1	Double eagles	$265,280.00	$56,620.00	$3,540.00	$10,100.00	.....	$9,120.00
2	Eagles	413,760.00	38,800.00	1,080.00	2,350.00	.....	8,870.00
3	Half eagles	718,990.00	91,965.00	2,330.00	3,240.00	.....	16,875.00
4	Three-dollar pieces	15.00	45.00	.....	6.00	.....	.....
5	Quarter eagles	9,347.50	3,972.50	.....	107.50	.....	257.50
6	Dollars	58.00	184.00	.....	10.00	.....	3.00
7	Total face value	1,407,450.50	191,586.50	6,950.00	15,813.50	.....	35,125.50
	SILVER.						
8	Trade dollars	.....	227.00	.....	.....	.....	.....
9	Dollars	.....	1,089.00	.....	.....	.....	106.00
10	Half dollars	267,665.00	751.00	23,000.00	338.00	$12,310.00	31.50
11	Quarter dollars	237,273.00	607.00	9,500.00	45.00	8,295.00	32.25
12	Twenty-cent pieces	159.80	.....	1.40	6.00	.....	.....
13	Dimes	287,354.70	338.30	9,500.00	35.00	9,835.00	28.50
14	Half dimes	994.45	5.60	72.10	.....	15.00	.35
15	Three-cent pieces	175.65	.03	.....	.....	.....	.....
16	Total face value	793,622.60	3,017.93	42,073.50	424.00	30,455.00	198.60
	SUMMARY.						
		Stand. ozs.	*Stand. ozs.*	*Stand. ozs.*	*Stand. ozs.*	*Stand. ozs.*	*Stand. ozs.*
17	Gold coins	75,086.620	10,212.422	368.120	824.831	.....	1,858.650
18	Silver coins	595,741.87	2,416.96	31,667.75	306.83	22,543.80	158.21
19	Gold, coining value	$1,396,960.36	$189,998.55	$6,848.74	$15,345.69	.....	$34,579.53
20	Silver, coining value, subsidiary	741,202.95	3,007.10	39,400.00	381.75	$28,048.27	196.84
21	Loss, gold, value	10,490.14	1,587.95	101.26	467.81	.....	545.97
22	Loss, silver, subsidiary	52,419.65	10.83	2,673.50	42.25	2,406.73	1.76

No. 4.—Coinage of United States

	Denomination.	Philadelphia.		San Francisco.	
		Pieces.	Values.	Pieces.	Value.
	GOLD.				
1	Double eagles	161,282	$3,225,640.00	2,774,925	$55,498,500.00
2	Eagles	184,863	1,848,630.00	292,350	2,923,500.00
3	Half eagles	627,138	3,135,690.00	297,200	1,486,000.00
4	Quarter eagles	441,899	1,104,747.50	.....	.....
5	Total gold	1,415,182	9,314,707.50	3,364,475	59,908,000.00
	SILVER, SUBSIDIARY.				
6	Half dollars	2,368,650	1,184,325.00	1,764,000	882,000.00
7	Quarter dollars	9,268,650	2,317,162.50	1,348,000	337,000.00
8	Dimes	10,240,650	1,024,065.00	1,000,000	100,000.00
9	Total silver	21,877,950	4,525,552.50	4,112,000	1,319,000.00
	MINOR.				
10	Five-cent, nickel	11,590,526	579,526.30	.....	.....
11	One-cent, bronze	115,068,263	1,150,682.63	2,618,000	26,180.00
12	Total minor	126,658,789	1,730,208.93	2,618,000	26,180.00
13	Total coinage	149,951,921	15,570,468.93	10,094,475	61,253,180.00

The mint at Philadelphia coined 14,370,645 one-cent pieces, Indian-head design; 27,995,000 Lincoln head with the initials V. D. B., and 72,702,618 pieces without initials during 1909. The mint at San Francisco coined 309,000 one-cent pieces Indian-head design, 484,000 pieces Lincoln head with the initials V. D. B., and 1,825.000 pieces without initials during 1909. included in the above table.

FERRED FROM THE TREASURY AND PURCHASED OVER THE COUNTER FOR RECOINAGE ENDAR YEAR 1909.

Denver.	New York.	St. Louis.	Seattle.	Total.		Total.	
Purchased.	Purchased.	Purchased.	Purchased.	Received from Treasury.	Purchased.		
$60.00	$108,800.00	$93,300.00	$60.00	$268,820.00	$278,060.00	$546,880.00	1
100.00	219,870.00	91,460.00	50.00	414,840.00	361,500.00	776,340.00	2
220.00	355,200.00	194,560.00	50.00	721,320.00	662,110.00	1,383,430.00	3
.....	42.00	.....	.....	15.00	93.00	108.00	4
15.00	6,597.50	385.00	20.00	9,347.50	11,355.00	20.702,50	5
1.00	99.00	3.00	.....	58.00	300.00	358.00	6
396.00	690,608.50	379,708.00	180.00	1,414,400.50	1,313,418.00	2,727,818.50	7
.....	.....	.....	.....	.....	227.00	227.00	8
10.00	.....	.....	.....	.....	1,205.00	1,205.00	9
9.00	.....	.....	.....	302,975.00	1,129.50	304,104.50	10
7.00	.....	.....	.....	255,068.00	691.25	255,759.25	11
.....	.....	.....	.....	161.20	6.00	167.20	12
.10	.....	.....	.....	306,689.70	401.90	307,091.60	13
.....	.....	.....	.....	1,081.55	5.95	1,087.50	14
.....	.....	.....	.....	175.65	.03	175.68	15
26.10	.....	.....	.....	866,151.10	3,666.63	869,817.73	16
Stand. ozs.	*Stand. ozs.*	*Stand. ozs.*	*Stand. ozs.*	*Stand. ozs.*	*Stand. ozs.*	*Stand. ozs.*	
19.767	36,786.735	20,217.060	8.903	75,454.740	69,928.368	145,383.108	17
20.69	.....	.....	.....	649,953.42	2,902.69	652,856.11	18
$367.76	$684,404.37	$376,131.34	$165.63	$1,403,809.10	$1,300,992.87	$2,704,801.97	19
25.74	.....	.....	.....	808,651.22	3,611.43	812,262.65	20
28.24	6,204.13	3,576.66	14.37	10,591.40	12,425.13	23,016,53	21
.36	.....	.....	.....	57,499.88	55.20	57,555.08	22

MINTS DURING THE CALENDAR YEAR 1909.

New Orleans.		Denver.		Total.		
Pieces.	Value.	Pieces.	Value.	Pieces.	Value.	
.....	.....	52,500	$1,050,000.00	2,988,707	$59,774,140.00	1
.....	.....	121,540	1,215,400.00	598,753	5,987,530.00	2
34,200	171,000.00	3,423,560	17,117,800.00	4,382,098	21,910,490.00	3
.....	.....	.....	.....	441,899	1,104,747.50	4
34,200	171,000.00	3,597,600	19,383,200.00	8,411,457	88,776,907.50	5
925,400	462,700.00	.....	.....	5,058,050	2,529,025.00	6
712,000	178,000.00	5,114,000	1,278,500.00	16,442,650	4,110,662.50	7
2,287,000	228,700.00	954,000	95,400.00	14,481,650	1,448,165.00	8
3,924,400	869,400.00	6,068,000	1,373,900.00	35,982,350	8,087,852.50	9
.....	.....	.....	.....	11,590,526	579,526.30	10
.....	.....	.....	.....	117,686,263	1,176,862.63	11
.....	.....	.....	.....	129,276,789	1,756,388.93	12
3,958,600	1,040,400.00	9,665,600	20,757,100.00	173,670,596	98,621,148.93	13

No. 5.—Assets and Liabilities of the United

ASSETS.

	Institutions.	Gold bullion.		Silver bullion.		Value of bullion shipped for coinage.
		Quantity.	Value.	Quantity.	Value (cost).	
	COINAGE MINTS.	*Standard oz.*	*Dollars.*	*Standard oz.*	*Dollars.*	*Dollars.*
1	Philadelphia	1,390,824.008	25,875,795.52	4,208,736.57	2,612,885.41	.....
2	San Francisco	1,866,042.293	34,717,065.92	1,136,475.86	585,591.12	.....
3	Philippine coins for recoinage	.....	.....	1,302,950.44	1,152,550.66	.....
4	New Orleans	170,919.531	3,179,898.06	112,471.38	69,708.29	.....
5	Denver	1,013,822.088	18,861,806.29	456,341.24	210,671.64	.....
	ASSAY OFFICES.					
6	New York	765,839.956	14,248,185.24	275,821.10	141,008.51	480,204.34
7	Carson	1,585.206	29,488.21	884.55	398.02	64,654.89
8	Helena	4,794.268	89,195.68	2,806.75	1,263.04	.....
9	Boise	1,816.085	33,786.65	771.54	338.67	.....
10	St. Louis	1,515.596	28,197.11	132.11	59.50	.....
11	Charlotte	628.395	11,691.05	74.05	33.34	.....
12	Deadwood	937.358	17,439.72	1,065.32	488.49	53,225.08
13	Seattle	13,665.645	254,243.62	2,347.98	1,054.57	.....
14	Salt Lake City	26.669	496.23	.....	.....	101,531.88
15	Total	5,232,417.098	97,347,289.30	7,500,878.89	4,776,051.26	699,616.19

LIABILITIES.

	Institutions.	Bullion fund.	Undeposited earnings.	Seigniorage on silver.	Unpaid depositors.	Minor coinage profits.
	COINAGE MINTS.	*Dollars.*	*Dollars.*	*Dollars.*	*Dollars.*	*Dollars.*
1	Philadelphia	434,947,330.95	25,243.54	732,518.26	545,767.86	86,600.37
2	San Francisco	102,924,344.02	16,905.34	11,717.05	74,626.02	23,862.77
3	New Orleans	36,647,259.90	215.25	.....	73.79	.....
4	Denver	386,914,989.75	.....	25,723.89	.....	.....
	ASSAY OFFICES.					
5	New York	20,674,520.82	52,299.40	.....	1,267.25	.....
6	Carson	341,029.69	537.21	.....	.....	.....
7	Helena	259,078.42	654.65	.....	.....	.....
8	Boise	79,419.64	116.52	.....	.....	.....
9	St. Louis	59,603.99	64.37	.....	.....	.....
10	Charlotte	54,450.91	173.52	.....	.....	.....
11	Deadwood	104,140.76	244.46	.....	.....	.....
12	Seattle	1,255,542.23	1,822.86	.....	1,823.98	.....
13	Salt Lake City	297,578.68	310.84	.....	.....	.....
14	Total	984,559,289.76	98,587.96	769,959.20	623,558.90	110,463.14

STATES MINTS AND ASSAY OFFICES DECEMBER 31, 1909.

ASSETS.

Gold coin.	Silver coin.	Credit with assistant treasurer and depository banks.	Minor coin.	Minor coinage metal.	Deficiencies.	Total.	
Dollars.	*Dollars.*	*Dollars.*	*Dollars.*	*Dollars.*	*Dollars.*	*Dollars.*	
300,961,671.52	106,550,831.14	236,133.20	943,378.97	158,068.34	13,543.82	437,352,307.92	1
3,806,715.00	62,462,922.82	1,543,241.71	31,643.46	2,904.31	413,557.96	103,563,642.30	2
.....	.....	.....	.....	9,276.13	.....	1,161,826.79	3
1,602,957.00	31,656,670.44	138,315.15	.....	.....	.....	36,647,548.94	4
362,312,630.00	4,312,529.43	1,243,076.28	.....	.....	.....	386,940,713.64	5
.....	.....	5,858,689.38	.....	.....	.....	20,728,087.47	6
35,491.25	3,813.44	132,112.29	.....	.....	75,608.80	341,566.90	7
.....	.....	169,274.35	.....	.....	.....	259,733.07	8
.....	.....	45,410.84	.....	.....	.....	79,536.16	9
.....	.....	31,411.75	.....	.....	.....	59,668.36	10
.....	.....	42,900.04	.....	.....	.....	54,624.43	11
.....	.....	33,140.50	.....	.....	91.43	104,385.22	12
275,000.00	.....	728,890.88	.....	.....	.....	1,259,189.07	13
.....	.....	195,861.41	.....	.....	.....	297,889.52	14
668,994,464.77	204,986,767.27	10,398,457.78	975,022.43	170,248.78	502,802.01	988,850,719.79	15

LIABILITIES.

Minor coin metal fund.	Unpaid cent depositors and subtreasury minor coin transfers.	Government of the Philippine Islands.	Total.	
Dollars.	*Dollars.*	*Dollars.*	*Dollars.*	
160,000.00	854,846.94	.....	437,352,307.92	1
10,685.00	.....	1,663,328.89	104,725,469.09	2
.....	.....	.....	36,647,548.94	3
.....	.....	.....	386,940,713.64	4
.....	.....	.....	20,728,087.47	5
.....	.....	.....	341,566.90	6
.....	.....	.....	259,733.07	7
.....	.....	.....	79,536.16	8
.....	.....	.....	59,668.36	9
.....	.....	.....	54,624.43	10
.....	.....	.....	104,385.22	11
.....	.....	.....	1,259,189.07	12
.....	.....	.....	297,889.52	13
170,685.00	854,846.94	1,663,328.89	988,850,719.79	14

No. 6.—Highest, Lowest, and Average Price of Bar Silver in London, per Ounce British Standard (.925), since 1833, and the Equivalent in United States Gold Coin of an Ounce 1,000 Fine, taken at the Average Price.

Calendar years.	Highest quotation.	Lowest quotation.	Average quotation.	Value of a fine ounce at average quotation.	Calendar years.	Highest quotation.	Lowest quotation.	Average quotation.	Value of a fine ounce at average quotation.
	d.	*d.*	*d.*	*Dollars.*		*d.*	*d.*	*d.*	*Dollars.*
1833	59 7/16	58 3/4	59 3/16	1.297	1872	61 1/2	59 1/2	60 5/16	1.322
1834	60 3/4	59 3/4	59 15/16	1.313	1873	59 15/16	57 7/8	59 1/16	1.29769
1835	60	59 1/4	59 1/16	1.308	1874	59 1/2	57 1/4	58 1/16	1.27883
1836	60 1/4	59 3/8	60	1.315	1875	57 3/8	55 1/2	56 1/16	1.24233
1837	60 3/8	59	59 9/16	1.305	1876	58 1/2	46 1/2	53 1/8	1.16414
1838	60 1/2	59 1/2	59 1/2	1.304	1877	58 1/4	53 1/2	54 3/16	1.20189
1839	60 3/8	60	60 3/16	1.323	1878	55 1/2	49 1/2	52 5/8	1.15358
1840	60 3/8	60 1/8	60 3/16	1.323	1879	53 3/8	58 7/8	51 1/2	1.12392
1841	60 3/8	59 3/4	60 1/16	1.316	1880	52 13/16	51 1/2	52 1/4	1.14507
1842	60	59 1/4	59 7/16	1.303	1881	52 3/8	50 3/4	51 5/8	1.13229
1843	59 3/8	59	59 3/16	1.297	1882	52 3/8	50	51 1/16	1.13562
1844	59 1/4	59 1/4	59 1/2	1.304	1883	51 7/16	50 1/16	50 9/16	1.10874
1845	59 1/4	58 7/8	59 1/16	1.298	1884	51 3/8	49 1/2	50 1/16	1.11068
1846	60 1/8	59	59 5/16	1.300	1885	50	46 7/8	48 9/16	1.06510
1847	60 3/8	58 7/8	59 11/16	1.308	1886	47	42	45 3/8	.99467
1848	60	58 1/2	59 3/8	1.304	1887	47 1/8	43 1/4	44 11/16	.97946
1849	60	59 1/2	59 3/4	1.309	1888	44 9/16	41 3/8	42 7/8	.93974
1850	61 1/2	59 1/2	61 1/16	1.316	1889	44 3/8	41 15/16	42 1/16	.93511
1851	61 3/8	60	61	1.337	1890	54 3/8	43 3/8	47 3/4	1.04634
1852	61 7/8	59 7/8	60 1/2	1.326	1891	48 3/4	43 1/2	45 7/16	.98800
1853	61 7/8	60 5/8	61 1/2	1.348	1892	43 3/4	37 7/8	39 3/4	.87145
1854	61 7/8	60 7/8	61 1/2	1.348	1893	38 3/4	30 1/2	35 9/16	.78030
1855	61 3/8	60	61 5/16	1.344	1894	31 3/4	27	29 3/16	.63479
1856	62 1/4	60 1/2	61 5/16	1.344	1895	31 3/8	27 3/16	29 1/16	.65406
1857	62 3/8	61	61 3/4	1.353	1896	31 15/16	29 1/4	30 1/8	.67565
1858	61 7/8	60 3/4	61 5/16	1.344	1897	29 1/16	23 3/8	27 3/16	.60438
1859	62 3/8	61 3/4	62 1/16	1.360	1898	28 3/8	25	26 1/16	.59010
1860	62 3/8	61 1/4	61 11/16	1.352	1899	29	26 3/8	27 1/16	.60154
1861	61 3/8	60 3/8	60 13/16	1.333	1900	30 1/4	27	28 3/16	.62007
1862	62 1/8	61	61 7/16	1.346	1901	29 9/16	24 15/16	27 3/16	.59595
1863	61 1/2	61	61 3/8	1.345	1902	26 1/16	21 11/16	24 3/16	.52795
1864	62 1/2	60 5/8	61 3/8	1.345	1903	28 1/4	21 1/16	24 3/8	.54257
1865	61 3/8	60 1/2	61 1/16	1.338	1904	28 9/16	24 7/16	26 1/32	.57876
1866	62 1/4	60 3/8	61 1/2	1.339	1905	30 9/16	25 7/16	27 1/32	.61027
1867	61 1/2	60 3/8	60 9/16	1.328	1906	33 1/2	29	30 7/8	.67689
1868	61 1/8	60 1/8	60 1/2	1.326	1907	32 7/16	24 1/2	30 3/16	.66152
1869	61	60	60 7/16	1.325	1908	27	22	24 3/32	.53490
1870	60 3/4	60 1/4	60 9/16	1.328	1909	24 7/8	23 1/16	23 31/32	.52016
1871	61	60 9/16	60 1/2	1.326					

No. 7.—Commercial Ratio of Silver to Gold each Year since 1687.

[Note.—From 1687 to 1832 the ratios are taken from Dr. A. Soetbeer, from 1833 to 1878 from Pixley and Abell's tables, and from 1879 to 1896 from daily cablegrams from London to the Bureau of the Mint, and since from daily London quotations.]

Years.	Ratio.	Years.	Ratio.	Years.	Ratio.	Years.	Ratio.	Years.	Ratio.	Years.	Ratio.
1687	14.94	1716	15.09	1745	14.98	1774	14.62	1803	15.41	1832	15.73
1688	14.94	1717	15.13	1746	15.13	1775	14.72	1804	15.41	1833	15.93
1689	15.02	1718	15.11	1747	15.26	1776	14.55	1805	15.79	1834	15.73
1690	15.02	1719	15.09	1748	15.11	1777	14.54	1806	15.52	1835	15.80
1691	14.98	1720	15.04	1749	14.80	1778	14.68	1807	15.43	1836	15.72
1692	14.92	1721	15.05	1750	14.55	1779	14.80	1808	16.08	1837	15.83
1693	14.83	1722	15.17	1751	14.39	1780	14.72	1809	15.96	1838	15.85
1694	14.87	1723	15.20	1752	14.54	1781	14.78	1810	15.77	1839	15.62
1695	15.02	1724	15.11	1753	14.54	1782	14.42	1811	15.53	1840	15.62
1696	15.00	1725	15.11	1754	14.48	1783	14.48	1812	16.11	1841	15.70
1697	15.20	1726	15.15	1755	14.68	1784	14.70	1813	16.25	1842	15.87
1698	15.07	1727	15.24	1756	14.94	1785	14.92	1814	15.04	1843	15.93
1699	14.94	1728	15.11	1757	14.87	1786	14.96	1815	15.26	1844	15.85
1700	14.81	1729	14.92	1758	14.85	1787	14.92	1816	15.28	1845	15.92
1701	15.07	1730	14.81	1759	14.15	1788	14.65	1817	15.11	1846	15.90
1702	15.52	1731	14.94	1760	14.14	1789	14.75	1818	15.35	1847	15.80
1703	15.17	1732	15.09	1761	14.54	1790	15.04	1819	15.33	1848	15.85
1704	15.22	1733	15.18	1762	15.27	1791	15.05	1820	15.62	1849	15.78
1705	15.11	1734	15.39	1763	14.99	1792	15.17	1821	15.95	1850	15.70
1706	15.27	1735	15.41	1764	14.70	1793	15.00	1822	15.80	1851	15.46
1707	15.44	1736	15.18	1765	14.83	1794	15.37	1823	15.84	1852	15.59
1708	15.41	1737	15.02	1766	14.80	1795	15.55	1824	15.82	1853	15.33
1709	15.31	1738	14.91	1767	14.85	1796	15.65	1825	15.70	1854	15.33
1710	15.22	1739	14.91	1768	14.80	1797	15.41	1826	15.76	1855	15.38
1711	15.29	1740	14.94	1769	14.72	1798	15.59	1827	15.74	1856	15.38
1712	15.31	1741	14.92	1770	14.62	1799	15.74	1828	15.78	1857	15.27
1713	15.24	1742	14.85	1771	14.66	1800	15.68	1829	15.78	1858	15.38
1714	15.13	1743	14.85	1772	14.52	1801	15.46	1830	15.82	1859	15.19
1715	15.11	1744	14.87	1773	14.62	1802	15.26	1831	15.72	1860	15.29

No. 7.—Commercial Ratio of Silver to Gold each Year since 1687—Con.

Years.	Ratio.	Years.	Ratio.	Years.	Ratio.	Years.	Ratio.	Years.	Ratio.	Years.	Ratio.
1861	15.50	1870	15.57	1878	17.92	1886	20.78	1894	32.56	1902	39.15
1862	15.35	1871	15.57	1879	18.39	1887	21.10	1895	31.60	1903	38.10
1863	15.37	1872	15.63	1880	18.05	1888	22.00	1896	30.59	1904	35.70
1864	15.37	1873	15.93	1881	18.25	1889	22.10	1897	34.20	1905	33.87
1865	15.44	1874	16.16	1882	18.20	1890	19.75	1898	35.03	1906	30.54
1866	15.43	1875	16.64	1883	18.64	1891	20.92	1899	34.36	1907	31.24
1867	15.57	1876	17.75	1884	18.61	1892	23.72	1900	33.33	1908	38.64
1868	15.59	1877	17.20	1885	19.41	1893	26.49	1901	34.68	1909	39.74
1869	15.60										

No. 8.—Imports of Gold and Silver, by Customs Districts, into the United States during the Calendar Year ending December 31, 1909.

GOLD.

Customs districts.	In ore and base bullion.	Bullion, refined.		Coin.		Total.
				United States.	Foreign.	
	Dollars.	*Ounces.*	*Dollars.*	*Dollars.*	*Dollars.*	*Dollars.*
Baltimore, Md		11,476	237,286			237,286
Bangor, Me	50	3,410	68,064	384	562	69,060
Boston and Charlestown, Mass	31	3	58	5,082		5,171
New York, N. Y	1,242,996	252,399	5,199,377	683,583	2,921,629	10,047,585
Perth Amboy, N. J	3,019,110					3,019,110
Philadelphia, Pa					12,026	12,026
Porto Rico				15,400		15,400
New Orleans, La	765,703					765,703
Tampa, Fla				74,563		74,563
Arizona	814,718	102,935	2,058,709			2,873,427
Corpus Christi, Tex	71	397,365	8,213,551		2,136	8,215,758
Paso del Norte, Tex	364,129	121,291	2,468,774		24,900	2,857,803
Saluria, Tex	320,122	5,912	122,949			443,071
Alaska	153,007	234,668	3,836,854	14,000		4,003,861
Puget Sound, Wash	3,561,695	70,394	1,364,749	226,170		5,152,614
San Diego, Cal	28,849	387	6,727			35,576
San Francisco, Cal	2,205,268	64,687	1,336,955	14,373	780	3,557,376
Buffalo Creek, N. Y	20,490			9,780		30,270
Champlain, N. Y	90,264			514,022	98,909	703,195
Chicago, Ill	145,055				9,650	154,705
Detroit, Mich				936,883		936,883
Huron, Mich	3,800					3,800
Memphremagog, Vt	25	183	3,569			3,594
Montana and Idaho	104					104
Niagara, N. Y		106	2,235	2,060	27,012	31,307
North and South Dakota	338,465					338,465
Oswegatchie, N. Y	364,626					364,626
Superior, Mich	70					70
Vermont, Vt	171	702	14,180	33,924	86,282	134,557
Total	13,438,819	1,265,918	24,934,037	2,530,224	3,183,886	44,086,966

SILVER.

Baltimore, Md		650,019	335,891			335,891
Bangor, Me				12,331		12,331
Boston and Charlestown, Mass	54			1,037		1,091
Bridgeport, Conn	28,976					28,976
Newark, N. J	1,467,065					1,467,065
New York, N. Y	2,941,754	9,280,547	4,736,546	119,480	52,508	7,850,288
Perth Amboy, N. J	10,545,015					10,545,015
Philadelphia, Pa					1,624	1,624
Porto Rico				11,714		11,714
Mobile, Ala					3,650	3,650
New Orleans, La					144,098	144,098
Tampa, Fla				1,084		1,084
Arizona	1,983,062	996,158	501,364			2,484,426
Corpus Christi, Tex	150	84,151	43,749			43,899
Paso del Norte, Tex	1,499,793	2,995,302	1,538,407	16,200	5	3,054,405
Saluria, Tex	1,186,119	5,739,301	2,997,377			4,183,496
Alaska	19,930					19,930
Hawaii					4,867	4,867

No. 8.—Imports of Gold and Silver, by Customs Districts, into the United States during the Calenar Year ending December 31, 1909—Continued.

SILVER—Continued.

Customs districts.	In ore and base bullion.	Bullion, refined.		Coin.		Total.
				United States.	Foreign.	
	Dollars.	*Ounces.*	*Dollars*	*Dollars.*	*Dollars.*	*Dollars.*
Puget Sound, Wash	542,089			307,747	18	849,854
San Francisco, Cal	399,586	3,899,261	2,011,279	2,100	537,162	2,950,127
Buffalo Creek, N. Y	816,716			278,575		1,095,291
Cape Vincent, N. Y				2,130		2,130
Champlain, N. Y	1,839,515			96,765		1,936,280
Chicago, Ill	1,090,739					1,090,739
Detroit, Mich	10,384			1,301,366		1,311,750
Huron, Mich	346,533					346,533
Montana and Idaho	4,553					4,553
Niagara, N. Y	3,046,955	983,017	507,020	52,532		3,606,507
North and South Dakota	45,090			335		45,425
Oswegatchie, N. Y	1,972,493					1,972,493
Superior, Mich	653,775					653,775
Vermont, Vt	632	1,676	864	106,431	2,500	110,427
Denver, Colo	11,268					11,268
Omaha, Nebr	6,700					6,700
Total	30,458,946	24,629,432	12,672,497	2,309,827	746,432	46,187,702

No. 9.—Imports of Gold and Silver, by Countries, into the United States During the Calendar Year ending December 31, 1909.

GOLD.

Countries.	In ore and base bullion.	Bullion, refined.		Coin.		Total gold.
				United States.	Foreign.	
	Dollars.	*Ounces.*	*Dollars.*	*Dollars.*	*Dollars.*	*Dollars.*
Belgium		140	2,874			2,874
France	22,263	6,328	130,375	720	2,673,273	2,826,631
Germany	136	180	3,706			3,842
Gibraltar				60		60
Greece		35	678			678
Portugal				9,180		9,180
Servia	2,379	1,822	37,545			39,924
Spain	5,846	2,895	59,684			65,530
Sweden		53	1,088			1,088
Turkey in Europe		127	2,610			2,610
United Kingdom—England	11,835	19,676	406,206	5,082	13,582	436,705
Bermuda					43,405	43,405
Dominion of Canada:						
Nova Scotia, New Brunswick, etc	58,122	3,413	68,122	599	562	127,405
Quebec, Ontario, etc	198,905	236,192	3,867,839	1,510,669	212,203	5,789,616
British Columbia	4,213,139	70,394	1,364,749	238,070		5,815,958
Central American States:						
Costa Rica		34,435	709,358	1,000	5,000	715,358
Guatemala	14,429					14,429
Honduras	259,434	3,777	77,824	1,010	93	338,361
Nicaragua	746,117	3,694	76,084	200		822,401
Panama		1,857	38,240	1,000		39,240
Salvador		36,600	756,361			756,361
Mexico	7,587,090	683,377	14,015,453	3,833	30,750	21,637,126
West Indies:						
British	420	2,729	56,201	321,491	1,961	380,073
Cuba	1,811	507	10,450	75,187		87,448
Danish				20,540	648	21,188
Dutch		78	1,605	18,548	701	20,854
French		19	398	8,837	403	9,638
Haiti		35	713	250,221	66	251,000
Santo Domingo				58,487	1,752	60,239
Argentina	75,832	4,658	95,948		23	171,803
Brazil					118	118
Chile	101,444	3,673	75,647			177,091
Colombia	22,829	87,943	1,811,744	2,990	681	1,838,244
Ecuador	83,720	5,856	120,635		198,665	403,020
Guiana—British	10,446	854	17,590			28,036
Peru	4,659	3,493	71,936			76,595
Venezuela		3,156	64,985		2,500	67,485

No. 9.—Imports of Gold and Silver, by Countries, into the United States During the Calendar Year ending December 31, 1909—Continued.

GOLD—Continued.

Countries.	In ore and base bullion.	Bullion, refined.		Coin.		Total gold.
				United States.	Foreign.	
	Dollars.	*Ounces.*	*Dollars.*	*Dollars.*	*Dollars.*	*Dollars.*
Japan	126	9,749	200,798			200,918
Korea	14,000					14,000
Australia and Tasmania	343	36,590	753,783			754,126
Philippine Islands	3,500	1,585	32,808			36,308
Total	13,438,819	1,265,918	24,934,037	2,530,224	3,183,886	44,086,966

SILVER.

Countries.	Contained in ore.	Bullion.		Coin.		Total silver.
				United States.	Foreign.	
	Dollars.	*Ounces.*	*Dollars.*	*Dollars.*	*Dollars.*	*Dollars.*
Austria-Hungary	66					66
Belgium		41,796	20,097			20,097
Bulgaria		34,870	17,547			17,547
France	81	8,589	4,427	6,630	1,099	12,237
Germany	59,761	44,199	23,097	7,602	1,290	91,750
Gibraltar				153	31	184
Greece		331	166			166
Italy				300		300
Portugal				120	53	173
Roumania	6,796					6,796
Servia	211	7,552	3,741			3,952
Spain	14,510	187,218	94,260			108,770
Sweden		1,510	767		80	847
Turkey in Europe		483	244			244
United Kingdom—England	22,776	970,433	490,106	1,646	22,822	537,350
Bermuda				708		708
British Honduras					5,382	5,382
Dominion of Canada:						
Nova Scotia, New Brunswick, etc				21,837	2,500	24,337
Quebec, Ontario, etc	9,929,401	984,693	507,884	1,826,774		12,264,059
British Columbia	650,148			309,947	18	960,113
Central American States:						
Costa Rica		506,206	257,510			257,510
Guatemala	54				12,430	12,484
Honduras	446,550	11,261	4,679		126,114	577,343
Nicaragua		1,600	800		3,830	4,630
Panama	550	980	495		222	1,267
Salvador	750	400	200			950
Mexico	17,926,986	19,037,858	9,823,580	16,200	26,805	27,793,571
West Indies:						
British		1,506	788	30,182	1,682	32,652
Cuba	1,136	730	398	31,480	453	33,467
Danish		8,641	4,320	27,353	125	31,798
Dutch		450	240	744	417	1,401
French				223	1,228	1,451
Haiti				3,680	23,154	26,834
Santo Domingo				22,219	850	23,069
Argentina	34,949	82,660	41,871		4	76,824
Brazil					8	8
Chile	1,263,481	187,468	101,906			1,365,387
Colombia	12,329	37,410	19,109	29	572	32,039
Ecuador		2,606	1,473			1,473
Guiana—British	698	50	28			726
Peru	66,611	1,319,598	669,968		34	736,613
Venezuela		1,912	975			975
Chinese Empire					481,388	481,388
Japan	1,262	854,294	427,384	2,000	19,505	450,151
Korea	2,941					2,941
Australia and Tasmania		292,328	154,437		4,867	159,304
French Oceania					9,469	9,469
German Africa	16,899					16,899
Total	30,458,946	24,629,432	12,672,497	2,309,827	746,432	46,187,702

No. 10.—Exports by Customs Districts of Domestic Gold and Silver from the United States During the Calendar Year ending December 31, 1909.

GOLD.

Customs districts.	In ore and base bullion.	Bullion, refined.		Coin.	Total.
	Dollars.	*Ounces.*	*Dollars.*	*Dollars.*	*Dollars.*
Baltimore, Md.				1,400	1,400
Bangor, Me.		24	478	5	483
New York, N. Y.		[a] 583,799	11,991,232	81,344,665	93,335,897
Mobile, Ala.				7,000	7,000
New Orleans, La.				110,728	110,728
Corpus Christie, Tex.				101	101
Paso del Norte, Tex.	103,411			248,667	352,078
Alaska.	263,567	5,043	77,900		341,467
Puget Sound, Wash.	173,233	2,391	47,051	17,381	237,665
San Francisco, Cal.		[a] 544,219 813,359	11,250,000 16,814,704	5,510	28,070,214
Buffalo Creek, N. Y.		15,218	343,830	200,000	543,830
Champlain, N. Y.				5,800,000	5,800,000
Detroit, Mich.		242	4,905		4,905
Memphremagog, Vt.		4	64		64
Niagara, N. Y.		6,481	132,825	750,000	882,825
Vermont, Vt.		2,837	57,038	400,000	457,038
Total.	540,211	1,973,617	40,720,027	88,885,457	130,145,695

SILVER.

Bangor, Me.		1,816	1,008		1,008
Newark, N. J.		1,322,428	679,021		679,021
New York, N. Y.	[b] 475,073	[a] 277,145 81,577,827	144,400 42,312,754	165,146	43,097,373
Perth Amboy, N. J.		7,654,976	3,827,488		3,827,488
New Orleans, La.				3,080	3,080
Corpus Christi, Tex.				2,688	2,688
Paso del Norte, Tex.	151,843				151,843
Alaska.	8,174				8,174
Puget Sound, Wash.	18,433	106,622	66,434	30,451	115,318
San Francisco, Cal.		14,916,591	7,743,267		7,743,267
Buffalo Creek, N. Y.		90,010	53,997		53,997
Cape Vincent, N. Y.				200	200
Champlain, N. Y.		1,164	652		652
Detroit, Mich.		200	113		113
Memphremagog, Vt.		634	328		328
Niagara, N. Y.		5,779	3,127		3,127
Oswegatchie, N. Y.	14	326	175		189
Vermont, Vt.		232,415	118,563	804	119,367
Total.	653,537	106,187,933	54,951,327	202,369	55,807,233

[a] United States mint or assay office bars.

[b] Ore valued at $416,000, containing 800,000 fine ounces of silver, came from Canada and was exported to England. This should be eliminated from this table and added to table "Transit and Transshipment."

No. 11.—Exports by Countries of Domestic Gold and Silver from the United States during the Calendar Year ending December 31, 1909.

GOLD.

Countries.	In ore and base bullion.	Bullion refined.		Coin.	Total.
	Dollars.	*Ounces.*	*Dollars.*	*Dollars.*	*Dollars.*
France		[a] 514,381	10,571,232	3,310,000	13,881,232
Netherlands				4,000,170	4,000,170
United Kingdom—England		[a] 69,418	1,420,000	12,350,000	13,770,000
British Honduras				10,000	10,000
Dominion of Canada:					
Nova Scotia, New Brunswick, etc		24	478	5	483
Quebec, Ontario, etc	228,995	24,782	538,662	7,150,000	7,917,657
British Columbia	207,805	7,434	124,951	17,381	350,137
Central American States:					
Costa Rica				5,648	5,648
Guatemala				79,800	79,800
Nicaragua				4,280	4,280
Panama				943,000	943,000
Salvador				30	30
Mexico	103,411			253,768	357,179
West Indies:					
British				129,800	129,800
French				6,400	6,400
Haiti				594,615	594,615
Santo Domingo				94,500	94,500
Argentina				47,767,440	47,767,440
Brazil				10,450,000	10,450,000
Colombia				16,000	16,000
Ecuador				150,000	150,000
Guiana—Dutch				30,000	30,000
Uruguay				900,000	900,000
Venezuela				615,890	615,890
Chinese Empire		39	800		800
Straits Settlements				1,250	1,250
Hongkong		24	500	480	980
Japan		[a] 544,219 813,296	11,250,000 16,813,404	5,000	28,068,404
Total	540,211	1,973,617	40,720,027	88,885,457	130,145,695

SILVER.

France		7,486,572	3,837,803		3,837,803
United Kingdom—England	[b] 475,073	[a] 277,145 82,746,732	144,400 42,815,522		43,434,995
Bermuda				100	100
British Honduras				80	80
Dominion of Canada:					
Nova Scotia, New Brunswick, etc		1,791	994		994
Quebec, Ontario, etc	14	330,528	176,955	1,004	177,973
British Columbia	26,607	667	400	30,451	57,458
Newfoundland and Labrador		25	14		14
Central American States:					
Nicaragua				3,000	3,000
Panama				40,396	40,396
Mexico	151,843			2,688	154,531
West Indies:					
British				1,400	1,400
Cuba				1,750	1,750
Haiti				4,500	4,500
Santo Domingo				117,000	117,000
Guiana—British		17,423	9,339		9,339
Chinese Empire		2,261,982	1,177,087		1,177,087
British India		2,608,632	1,339,516		1,339,516
Hongkong		10,451,436	5,446,614		5,446,614
Australia and Tasmania		5,000	2,683		2,683
Total	653,537	106,187,933	54,951,327	202,369	55,807,233

[a] United States mint or assay office bars.

[b] Ore valued at $416,000, containing 800,000 fine ounces of silver, came from Canada and was exported to England. This should be eliminated from this table and added to table "Transit and Transshipment."

No. 12.—Exports, by Customs Districts, of Foreign Gold and Silver from the United States during the Calendar Year ending December 31, 1909.

GOLD.

Customs districts.	In ore and base bullion.	Bullion refined.		Coin.	Total.
	Dollars.	*Ounces.*	*Dollars.*	*Dollars.*	*Dollars.*
New York, N. Y.				2,514,770	2,514,770
Porto Rico				1,739	1,739
Paso del Norte, Tex.		8	160		160
Hawaii				6,400	6,400
Puget Sound, Wash.				4,432	4,432
Buffalo, N. Y.				3,837	3,837
Champlain, N. Y.				47,933	47,933
Vermont, Vt.				155,855	155,855
Total		8	160	2,734,966	2,735,126

SILVER.

New York, N. Y.		2,026,934	1,144,150	114,242	1,258,392
New Orleans, La.				48,338	48,338
Brazos de Santiago, Tex.				10,458	10,458
Corpus Christi, Tex.				2,500	2,500
Paso del Norte, Tex.				53,746	53,746
Saluria, Tex.				225	225
Puget Sound, Wash.				17,905	17,905
San Francisco, Cal.				171,970	171,970
Buffalo, N. Y.				26,326	26,326
Champlain, N. Y.	202			52,723	52,925
Detroit, Mich.				538	538
Oswegatchie, N. Y.	62,278				62,278
Vermont, Vt.		15,220	7,876	71,599	79,475
Total	62,480	2,042,154	1,152,026	570,570	1,785,076

No. 13.—Exports, by Countries, of Foreign Gold and Silver from the United States during the Calendar Year ending December 31, 1909.

GOLD.

Countries.	In ore and base bullion.	Bullion refined.		Coin.	Total.
	Dollars.	*Ounces.*	*Dollars.*	*Dollars.*	*Dollars.*
France				2,239	2,239
United Kingdom—England				202,720	202,720
Bermuda				29,400	29,400
Dominion of Canada:					
Quebec, Ontario, etc.				207,625	207,625
British Columbia				4,432	4,432
Mexico		8	160		160
West Indies—Cuba				2,282,150	2,282,150
Australasia and Tasmania				6,400	6,400
Total		8	160	2,734,966	2,735,126

SILVER.

Austria-Hungary				535	535
France		22,596	10,575		10,575
Germany				11,055	11,055
Italy				2,298	2,298
United Kingdom—England		2,004,338	1,133,575	44,530	1,178,105
Dominion of Canada:					
Quebec, Ontario, etc.	62,480	15,220	7,876	151,186	221,542
British Columbia				19,255	19,255
Central American States:					
Nicaragua				52,063	52,063
Salvador				170,620	170,620
Mexico				66,929	66,929
West Indies—British				29,666	29,666
Colombia				18,080	18,080
Guiana—British				4,353	4,353
Total	62,480	2,042,154	1,152,026	570,570	1,785,076

No. 14.—Recapitulation of Imports and Exports of Gold and Silver During the Calendar Year 1909.

Description.	Imports.	Exports.	Excess.	
			Imports.	Exports.
GOLD.				
Contained in domestic ore		$540,211		$540,211
Contained in foreign ore	$13,438,819		$13,438,819	
Domestic bullion		40,720,027		40,720,027
Foreign bullion	24,934,037	160	24,933,877	
United States coin	2,530,224	88,885,457		86,355,233
Foreign coin	3,183,886	2,734,966	448,920	
Total	44,086,966	132,880,821	38,821,616	127,615,471
Excess of exports				88,793,855
SILVER.				
Contained in domestic ore		653,537		653,537
Contained in foreign ore	30,458,946	62,480	30,396,466	
Domestic bullion		54,951,327		54,951,327
Foreign bullion	12,672,497	1,152,026	11,520,471	
United States coin	2,309,827	202,369	2,107,458	
Foreign coin	746,432	570,570	175,862	
Total	46,187,702	57,592,309	44,200,257	55,604,864
Excess of exports				11,404,607

Items.	Contained in domestic ore.	Contained in foreign ore.	Domestic bullion.	Foreign bullion.	United States coin.	Foreign coin.	Total.
GOLD.							
Imports		$13,438,819		$24,934,037	$2,530,224	$3,183,886	$44,086,966
Exports	$540,211		$40,720,027	160	88,885,457	2,734,966	132,880,821
Excess:							
Imports		13,438,819		24,933,877		448,920	38,821,616
Exports	540,211		40,720,027		86,355,233		127,615,471
Total excess exports							88,793,855
SILVER.							
Imports		30,458,946		12,672,497	2,309,827	746,432	46,187,702
Exports	653,537	62,480	54,951,327	1,152,026	202,369	570,570	57,592,309
Excess:							
Imports		30,396,466		11,520,471	2,107,458	175,862	44,200,257
Exports	653,537		54,951,327				55,604,864
Total excess exports							11,404,607

No. 15.—Transit and Transshipment of Gold and Silver in the Customs Districts of New York and Arizona [a] during the Calendar Year 1909.

Countries from which received and to which shipped.	GOLD.				SILVER.			
	In ore.	Bullion, refined.	Coin.	Total gold.	In ore.	Bullion, refined.	Coin.	Total silver.
Received from—								
France			$386,000	$386,000				
Bermuda							$480	$480
Central American States:								
Costa Rica		$6,878		6,878				
Panama		11,000		11,000				
Mexico	$20,658	35,185	9,823	65,666	$29,810	[b] $4,571,365	[b] 9,545	4,610,720
West Indies:								
British		139,542	745	140,287	980	16,490		17,470
Cuba						1,244,393		1,244,393
Haiti		1,800		1,800	200			200
Colombia	510	378,198		378,708	585	62,767		63,352
Peru					3,760			3,760
Venezuela		1,428		1,428				
Total	21,168	574,031	396,568	991,767	35,335	5,895,015	10,025	5,940,375
Shipped to—								
France		69,930		69,930		2,793,252	6,507	2,799,759
Germany		21,461	9,823	31,284	20	1,807,309		1,807,329
United Kingdom—England	21,168	482,640	745	504,553	35,315	1,294,172	480	1,329,967
Mexico						[b] 282	[b] 3,038	3,320
West Indies—								
Cuba			386,000	386,000				
Total	21,168	574,031	396,568	991,767	35,335	5,895,015	10,025	5,940,375

[a] No transactions occurred in other districts.
[b] $282 silver bullion and $3,038 silver coin went from Mexico to Mexico via Arizona.

No. 16.—Coinage of Nations.

Countries.	1907		1908		1909	
	Gold.	Silver.	Gold.	Silver.	Gold.	Silver.
United States	$131,907,490	$13,178,436	$131,638,633	$12,391,777	$88,776,910	$8,087,853
Philippine Islands	.....	6,730,260	.....	11,199,868	.....	3,981,610
Austria-Hungary	4,605,184	3,458,435	5,890,827	10,868,313	11,285,186	9,784,691
Belgium	.....	105,185	.....	.....	.....	2,191,796
Bolivia	.....	.....	.....	9,687	.....	389,000
Brazil	40,962	4,340,900	69,331	2,888,288	54,179	247,581
British Empire:						
Australasia	52,772,229	.....	50,887,122	.....	47,330,786	.....
Canada	.....	1,194,000	3,299	313,338	79,194	673,044
British East Africa	.....	.....	.....	.....	.....	16,222
British Honduras	.....	24,500	.....	.....	.....	.....
Ceylon	.....	25,955	.....	81,108	.....	64,887
Cyprus	.....	24,333	.....	.....	.....	.....
Newfoundland	.....	50,000	.....	100,000	.....	100,000
Great Britain	100,011,442	9,924,740	67,157,700	4,911,301	69,104,300	5,851,265
Guiana (British)	.....	.....	.....	2,433	.....	2,920
Hongkong	.....	.....	.....	1,945,726	.....	5,058,025
India	.....	84,630,837	.....	58,773,220	.....	9,258,002
Straits Settlements	.....	17,517,000	.....	6,929,500	.....	1,720,792
Sarawak	.....	2,000	.....	.....	.....	.....
Chile	90,867	750,166	187,449	858,346	.....	208,471
China	.....	5,316,439	.....	24,498,653	.....	11,103,995
Colombia	.....	1,017,580	.....	407,058	.....	.....
Danish West Indies	.....	29,172	.....	.....	.....	.....
Denmark	.....	216,789	3,912,084	.....	1,652,960	.....
Egypt	.....	2,224,350	.....	.....	.....	.....
Finland	.....	164,050	.....	137,416	.....	39,372
France	75,261,788	1,202,130	29,574,098	3,110,555	38,740,321	3,449,748
French colonies:						
Indo-China	.....	14,061,745	.....	14,785,094	.....	9,797,871
Tunis	266	77,551	498	116,499	249	349
Germany	15,925,915	20,216,679	15,660,469	13,834,116	29,272,420	12,667,479
Colony of German East Africa	.....	324,433	.....	162,217	.....	97,330
Honduras	.....	3,009	.....	.....	.....	.....
Italy	.....	2,115,806	.....	1,288,730	.....	670,636
Japan	8,944,080	8,586,999	10,371,704	8,459,796	16,393,119	7,371,450
Korea	.....	517,920	423,640	935,071	249,000	199,200
Mexico	10,632,152	9,651,454	4,436,294	3,932,351	.....	1,586,628
Montenegro	.....	.....	.....	.....	.....	162,132
Netherlands	.....	1,849,209	207,799	1,206,000	311,000	1,407,000
Dutch East Indies	.....	1,869,300	.....	1,809,000	.....	804,060
Norway	.....	97,927	.....	155,440	.....	139,360
Persia	.....	.....	.....	.....	23,250	5,000,000
Peru	996,016	415,527	704,207	152,869	256,085	4,093
Portugal	.....	207,360	.....	2,344,468	.....	3,774,415
Russia	280	5,660,338	1,930	3,263,078	.....	5,034,525
Roumania	.....	.....	.....	2,315,280	.....	.....
San Salvador	.....	.....	.....	.....	.....	693,170
Siam	.....	1,342,891	.....	47,560	.....	397,225
Sweden	.....	714,428	.....	319,726	.....	107,997
Switzerland	579,000	653,305	1,370,300	386,000	1,544,000	501,800
Turkey	10,036,231	1,323,756	4,708,265	748,707	8,169,755	781,397
Total	411,803,902	221,816,876	327,205,649	195,688,499	313,242,714	113,427,331

No. 17.—World's Production of Gold and Silver—Continued.

CALENDAR YEAR 1907.

Countries.	Gold.			Silver.		
	Kilograms (fine).	Ounces (fine).	Value.	Kilograms (fine).	Ounces (fine).	Commercial value.
North America:						
United States	136,075	4,374,827	$90,435,700	1,757,844	56,514,700	$37,299,700
Mexico	28,109	903,699	18,681,100	1,901,934	61,147,203	40,357,200
Canada	12,613	405,517	8,382,800	397,505	12,779,800	8,434,700
Africa	228,685	7,352,228	151,984,100	24,586	790,431	521,700
Australasia	113,870	3,660,911	75,677,700	558,292	17,949,099	11,846,400
Europe:						
Russia	40,151	1,290,854	26,684,300	4,110	132,122	87,200
Austria-Hungary	3,739	120,209	2,484,900	54,253	1,744,233	1,151,200
Germany	100	3,220	66,600	158,261	5,088,086	3,358,100
Norway				6,268	201,516	133,000
Sweden	28	903	18,700	929	29,761	19,600
Italy	60	1,914	39,600	22,950	737,843	487,000
Spain				127,435	4,097,035	2,704,000
Greece				25,786	829,025	547,200
Turkey	7	216	4,500	2,095	67,351	44,500
France	1,257	40,413	835,400	24,727	794,973	524,600
Great Britain	44	1,414	29,200	4,268	137,216	90,600
Servia	90	2,893	59,800			
South America:						
Argentina	155	4,985	103,000	783	25,178	16,600
Bolivia, Chile	1,907	61,313	1,267,400	162,437	5,222,358	3,446,800
Colombia	4,898	157,491	3,255,600	32,619	1,048,719	692,200
Ecuador	402	12,923	267,100	76	2,456	1,600
Brazil	3,040	97,750	2,020,700			
Venezuela	34	1,082	22,400			
Guiana—						
British	1,963	63,099	1,304,400			
Dutch	963	30,961	640,000			
French	3,552	114,202	2,360,800			
Peru	774	24,890	514,500	297,546	9,566,118	6,313,600
Uruguay	78	2,510	51,900			
Central America	3,172	101,965	2,107,800	58,877	1,892,896	1,249,300
Asia:						
Japan	4,172	134,146	2,773,000	95,596	3,073,411	2,028,400
China	6,771	217,688	4,500,000			
Indo-China	48	1,540	31,800			
Korea	3,266	105,013	2,170,800			
Siam	250	8,038	166,200			
India (British)	15,624	502,307	10,383,600			
East Indies—						
British	2,349	75,525	1,561,300			
Dutch	3,129	100,614	2,079,900	10,434	335,454	221,900
Total	621,375	19,977,260	412,966,600	5,729,611	184,206,984	121,577,100

CALENDAR YEAR 1908.

North America:						
United States	142,281	4,574,340	$94,560,000	1,631,129	52,440,800	$28,050,600
Canada	14,809	476,112	9,482,100	687,597	22,106,233	11,824,600
Mexico	33,661	1,082,210	22,371,200	2,291,260	73,664,027	39,402,900
Africa	250,558	8,055,430	166,520,500	39,583	1,272,595	680,700
Australasia	110,333	3,547,210	73,327,300	534,218	17,175,099	9,187,000
Europe:						
Russia	42,209	1,357,027	28,052,200	4,109	132,122	70,700
Austria-Hungary	3,715	119,454	2,469,300	55,069	1,770,457	947,000
Germany	97	3,134	64,800	154,636	4,971,544	2,659,300
Norway				7,035	226,175	121,000
Sweden	22	702	14,500	1,111	35,728	19,100
Italy	70	2,251	46,500	20,990	674,848	361,000
Spain				129,881	4,175,674	2,233,600
Greece				25,786	829,025	443,400
Turkey	3	108	2,200	248	7,971	4,300
France	1,726	55,505	1,147,400	18,415	592,042	316,700
Great Britain	24	772	16,000	4,207	135,255	72,300
Servia	90	2,893	59,800			
South America:						
Argentina	243	7,801	161,300	3,954	127,108	68,000
Bolivia, Chile	521	16,752	346,300	180,595	5,806,117	3,105,700
Colombia	5,157	165,797	3,427,300	42,769	1,375,039	735,500

No. 17.—World's Production of Gold and Silver—Continued.

CALENDAR YEAR 1908.

Countries.	Gold.			Silver.		
	Kilograms (fine).	Ounces (fine).	Value.	Kilograms (fine).	Ounces (fine).	Commercial value.
South America—Continued.						
Ecuador	527	16,945	$350,300	704	22,642	$12,100
Brazil	3,305	106,259	2,196,600	.....	.....	.....
Venezuela	37	1,184	24,500	3,254	104,626	56,000
Guiana—						
British	2,119	68,116	1,408,100	.....	.....	.....
Dutch	998	32,071	663,000	.....	.....	.....
French	3,213	103,307	2,135,500	.....	.....	.....
Peru	774	24,890	514,500	297,546	9,566,118	5,116,900
Uruguay	138	4,433	91,600	.....	.....	.....
Central America	4,542	146,034	3,018,800	45,437	1,460,809	781,400
Asia:						
Japan	5,253	168,874	3,490,900	124,194	3,992,854	2,135,800
China	13,011	418,312	8,647,300	.....	.....	.....
Indo-China	99	3,174	65,600	.....	.....	.....
Korea	4,585	147,423	3,047,500	.....	.....	.....
Siam	493	15,850	327,600	.....	.....	.....
India (British)	15,947	512,702	10,598,500	.....	.....	.....
East Indies—						
British	2,108	67,770	1,400,900	.....	.....	.....
Dutch	3,906	125,596	2,596,300	17,790	571,953	305,900
Total	666,574	21,430,438	442,646,200	6,321,517	203,236,861	108,711,500

CALENDAR YEAR 1909.

North America:						
United States	149,975	4,821,701	$99,673,400	1,702,068	54,721,500	$28,455,200
Canada	14,730	473,591	9,790,000	867,141	27,878,590	14,496,900
Mexico	35,875	1,153,400	23,842,900	2,299,920	73,942,432	38,450,100
Africa	257,280	8,271,575	170,988,600	33,486	1,076,577	559,800
Australasia	106,843	3,435,007	71,007,900	508,842	16,359,284	8,506,800
Europe:						
Russia	48,723	1,566,443	32,381,300	4,109	132,122	68,700
Austria-Hungary	2,922	93,946	1,942,000	31,079	999,184	519,600
Germany	104	3,348	69,200	165,875	5,332,901	2,773,100
Norway	.....	.....	.....	6,629	213,122	110,800
Sweden	15	491	10,100	914	29,373	15,300
Italy	36	1,168	24,200	24,467	786,620	409,000
Spain	4	140	2,900	148,276	4,767,091	2,478,900
Greece	.....	.....	.....	25,786	829,025	431,100
Turkey	3	108	2,200	248	7,971	4,100
France	1,726	55,505	1,147,400	18,415	592,042	307,900
Great Britain	89	2,863	59,200	14,300	459,747	239,100
Servia	226	7,273	150,300	349	11,226	5,800
South America:						
Argentina	286	9,186	189,900	8,246	265,106	137,900
Bolivia, Chile	741	23,819	492,400	172,571	5,548,154	2,885,000
Colombia	4,785	153,826	3,179,900	13,412	431,204	224,200
Ecuador	413	13,273	274,400	704	22,642	11,800
Brazil	3,389	108,983	2,252,900	.....	.....	.....
Venezuela	422	13,576	280,600	6,375	204,958	106,600
Guiana—						
British	1,794	57,697	1,192,700	.....	.....	.....
Dutch	934	30,041	621,000	.....	.....	.....
French	3,225	103,708	2,143,800	.....	.....	.....
Peru	774	24,890	514,500	297,546	9,566,118	4,974,400
Uruguay	138	4,433	91,600	.....	.....	.....
Central America	3,957	127,229	2,630,100	71,361	2,294,272	1,193,000
Asia:						
Japan	5,698	183,184	3,786,700	133,076	4,278,392	2,224,800
China	14,072	452,406	9,352,100	.....	.....	.....
Indo-China	99	3,174	65,600	.....	.....	.....
Korea	3,000	96,440	1,993,600	.....	.....	.....
Siam	493	15,850	327,600	.....	.....	.....
British India	15,586	501,097	10,358,600	.....	.....	.....
East Indies—						
British	2,162	69,510	1,436,900	.....	.....	.....
Dutch	3,229	103,832	2,146,400	14,494	465,980	242,300
Total	683,748	21,982,713	454,422,900	6,569,689	211,215,633	109,832,200

No. 18.—Production of Gold and Silver in the World Since the Discovery of America.

[From 1493 to 1885 is from a table of averages for certain periods, compiled by Dr. Adolph Soetbeer; for the years since the production is the annual estimate of the Bureau of the Mint.]

Period.	GOLD.				SILVER.				PERCENTAGE OF PRODUCTION.			
	Annual average for period.		Total for period.		Annual average for period.		Total for period.		By weight.		By value.	
	Fine ounces.	Value.	Fine ounces.	Value.	Fine ounces.	Coining value.	Fine ounces.	Coining value in standard silver dollars.	Gold.	Silver.	Gold.	Silver.
1493–1520	186,470	$3,855,000	5,221,160	$107,931,000	1,511,050	$1,954,000	42,309,400	$54,703,000	11	89	66.4	33.6
1521–1544	230,194	4,759,000	5,524,656	114,205,000	2,899,930	3,740,000	69,598,320	89,986,000	7.4	92.6	55.9	44.1
1545–1560	273,596	5,656,000	4,377,544	90,492,000	10,017,940	12,952,000	160,287,040	207,240,000	2.7	97.3	30.4	69.6
1561–1580	219,906	4,546,000	4,398,120	90,917,000	9,628,925	12,450,000	192,578,500	248,990,000	2.2	97.8	26.7	73.3
1581–1600	237,267	4,905,000	4,745,340	98,095,000	13,467,635	17,413,000	269,352,700	348,254,000	1.7	98.3	22	78
1601–1620	273,918	5,662,000	5,478,360	113,248,000	13,596,235	17,579,000	271,924,700	351,579,000	2	98	24.4	75.6
1621–1640	266,845	5,516,000	5,336,900	110,324,000	12,654,240	16,361,000	253,084,800	327,221,000	2.1	97.9	25.2	74.8
1641–1660	281,955	5,828,000	5,639,110	116,571,000	11,776,545	15,226,000	235,530,900	304,525,000	2.3	97.7	27.7	72.3
1661–1680	297,709	6,154,000	5,954,180	123,084,000	10,834,550	14,008,000	216,691,000	280,166,000	2.7	97.3	30.5	69.5
1681–1700	346,095	7,154,000	6,921,895	143,088,000	10,992,085	14,212,000	219,841,700	284,240,000	3.1	96.9	33.5	66.5
1701–1720	412,163	8,520,000	8,243,260	170,403,000	11,432,540	14,781,000	228,650,800	295,629,000	3.5	96.5	36.6	73.4
1721–1740	613,422	12,681,000	12,268,440	253,611,000	13,863,080	17,924,000	277,261,600	358,480,000	4.2	95.8	41.4	58.6
1741–1760	791,211	16,356,000	15,824,230	327,116,000	17,140,612	22,162,000	342,812,235	443,232,000	4.4	95.6	42.5	57.5
1761–1780	665,666	13,761,000	13,313,315	275,211,000	20,985,591	27,133,000	419,711,820	542,658,000	3.1	96.9	33.7	66.3
1781–1800	571,948	11,823,000	11,438,970	236,464,000	28,261,779	36,540,000	565,235,580	730,810,000	2	98	24.4	75.6
1801–1810	571,563	11,815,000	5,715,627	118,152,000	28,746,922	37,168,000	287,469,225	371,677,000	1.9	98.1	24.1	75.9
1811–1820	367,957	7,606,000	3,679,568	76,063,000	17,385,755	22,479,000	173,857,555	224,786,000	2.1	97.9	25.3	74.7
1821–1830	457,044	9,448,000	4,570,444	94,479,000	14,807,004	19,144,000	148,070,040	191,444,000	3	97	33	67
1831–1840	652,291	13,484,000	6,522,913	134,841,000	19,175,867	24,793,000	191,758,675	247,930,000	3.3	96.7	35.2	64.8
1841–1850	1,760,502	36,393,000	17,605,018	363,928,000	25,090,342	32,440,000	250,903,422	324,400,000	6.6	93.4	52.9	47.1
1851–1855	6,410,324	132,513,000	32,051,621	662,566,000	28,488,597	36,824,000	142,442,986	184,169,000	18.4	81.6	78.3	21.7
1856–1860	6,486,262	134,083,000	32,431,312	670,415,000	29,095,428	37,618,000	145,477,142	188,092,000	18.2	81.8	78.1	21.9
1861–1865	5,949,582	122,989,000	29,747,913	614,944,000	35,401,972	45,772,000	177,009,862	228,861,000	14.4	85.6	72.9	27.1
1866–1870	6,270,086	129,614,000	31,350,430	648,071,000	43,051,583	55,663,000	215,257,914	278,313,000	12.7	87.3	70	30
1871–1875	5,591,014	115,577,000	27,955,068	577,883,000	63,317,014	81,864,000	316,585,069	409,322,000	8.1	91.9	58.5	41.5
1876–1880	5,543,110	114,586,000	27,715,550	572,931,000	78,775,602	101,851,000	393,878,009	509,256,000	6.6	93.4	53	47
1881–1885	4,794,755	99,116,000	23,973,773	495,582,000	92,003,944	118,955,000	460,019,722	594,773,000	5	95	45.5	54.5
1886–1890	5,461,282	112,895,000	27,306,411	564,474,000	108,911,431	140,815,000	544,557,155	704,074,000	4.8	95.2	44.5	55.5
1891–1895	7,882,565	162,947,000	39,412,823	814,736,000	157,581,331	203,742,000	787,906,656	1,018,708,000	4.8	95.2	44.4	55.6
1896–1900	12,446,939	257,301,100	62,234,698	1,286,505,400	165,693,304	214,229,700	828,466,522	1,071,148,400	7	93	54.6	45.4
1901	12,625,527	260,992,900	12,625,527	260,992,900	173,011,283	223,691,300	173,011,283	223,691,300	6.8	93.2	53.8	46.2
1902	14,354,680	296,737,600	14,354,680	296,737,600	162,763,483	210,441,900	162,763,483	210,441,900	8.1	91.9	58.5	41.5
1903	15,852,620	327,702,700	15,852,620	327,702,700	167,689,322	216,810,300	167,689,322	216,810,300	8.6	91.4	60.2	39.8

1904	16,804,372	347,377,200	16,804,372	347,377,200	164,195,266	212,292,900	164,195,266	212,292,900	9.3	90.7	62.1	37.9
1905	18,396,451	380,288,700	18,396,451	380,288,700	172,317,688	222,794,500	172,317,688	222,794,500	9.6	90.4	63.1	36.9
1906			19,471,080	402,503,000			165,054,497	213,403,800	10.5	89.5	65.3	34.7
1907			19,977,260	412,966,600			184,206,984	238,166,600	9.8	90.2	63.4	36.6
1908			21,430,438	443,006,200			203,236,861	262,770,900	9.5	90.5	62.8	37.2
1909			21,982,713	454,422,900			211,215,633	273,086,900	9.4	90.6	62.5	37.5
Total			647,853,790	13,392,328,200			10,432,222,066	13,488,125,500	5.8	94.2	49.8	50.2

INDEX.

A.

B.

C.

D.

H.

I.

J.

K.

L.

M.

N.

O.

P.

R.

S.

T.

○