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WASHINGTON

LEAD.

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SUMMARY.

The following tabular statement gives the following domestic production and consumption of lead figures compiled by the United States Geological Survey.

Summary of statistics of refined lead, 1917-18, in short tons.

PRODUCTION.

Domestic desilverized lead.....	
Domestic soft lead.....	
Domestic desilverized soft lead.....	
Foreign desilverized lead.....	
Total refined primary ^a lead.....	
Antimonial lead.....	
Secondary ^a lead.....	

CONSUMPTION.^b

Apparent consumption of primary lead, stocks disregarded.....	
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^a "Primary lead," which is produced directly from ore, is here distinguished from secondary lead, which is obtained by refining skimmings, drosses, and old metals. The figures on p. 944. Wherever in this report the word "lead" is used without qualification, it refers to primary lead.

^b For method of calculating consumption see p. 969.

The output of refined lead in the United States in 1918 was 539,905 short tons, valued at \$76,666,000, as compared with 504,333 short tons, valued at \$74,333,000 in 1917—a loss in quantity of 8,572 short tons, and a loss in value of \$17,666,000, or nearly 3 percent.

INTRODUCTION.

An estimate of the production of refined lead was made by the United States Geological Survey on January 1, 1919, based on the actual production for the year 1918 and estimates for the remainder of the year. The figures for the production and consumption of lead in 1918 are given in the preliminary report on the mineral resources of the United States, published August 7, 1919. The figures in this report, in addition to the statistics given in the preliminary report, are based on the statistics given in the preliminary report.

tables and curves showing production, value, consumption, imports, exports, and prices for a period of years, and embodies certain historical notes on the reaction of the lead industry to the war.

The statistics of production of lead in this country in 1918 have been compiled by the Geological Survey from confidential reports submitted by each lead-smelting company in operation during the year. The statistics of the recovery of secondary lead were also collected by the Geological Survey. The statistics of domestic consumption of refined lead are taken in part from the refinery returns and in part from the records of the Bureau of Foreign and Domestic Commerce, of the Department of Commerce, and the statistics of foreign production are compiled from the sources indicated in connection with the tables here presented.

PRODUCTION.

QUANTITY AND VALUE.

The refined lead produced in the United States from 1720 to 1914 from domestic ores and from foreign ores and base bullion and its value at the average price in New York are shown in a table in the chapter on lead in Mineral Resources for 1914. Details for years later than 1905 are shown in the table below.

Production, price per pound, and value of refined lead in the United States, 1720-1918.

Year.	Desilverized lead. ^{a, b}	Soft lead. ^c	Total production. ^b	From domestic ores and base bullion. ^b	From foreign ores.	From foreign base bullion.	Price per pound at New York. ^d	Value.
	Short tons.	Short tons.	Short tons.	Short tons.	Short tons.	Short tons.		
1720-1905.....	5,251,079	2,081,836	7,332,915	6,032,383	1,300,532			\$634,403,000
1906.....	313,858	90,860	404,716	336,209	28,803	39,743	\$0.057	40,141,000
1907.....	313,588	99,801	413,389	352,381	24,041	36,967	.053	43,819,000
1908.....	295,582	101,012	396,594	311,600	11,509	73,389	.042	33,311,000
1909.....	329,751	117,168	446,909	352,839	21,754	72,316	.043	38,434,000
1910.....	328,954	141,318	470,272	375,402	18,085	76,805	.044	41,384,000
1911.....	331,032	155,947	486,979	391,995	10,764	84,220	.045	43,828,000
1912.....	339,646	141,248	480,894	392,517	11,572	76,805	.046	43,280,000
1913.....	330,583	131,867	462,450	411,878	13,223	37,359	.044	40,606,000
1914.....	383,903	158,219	542,122	512,794	7,639	21,689	.039	42,286,000
1915.....	388,594	101,461	550,055	507,026	9,581	33,448	.047	51,705,000
1916.....	403,619	167,515	571,134	552,228	0,085	12,821	.069	78,817,000
1917.....	422,266	189,503	610,769	648,450	15,872	46,447	.086	105,052,000
1918.....	429,732	210,463	640,195	539,905	15,334	84,956	.071	90,908,000
	9,862,195	3,947,208	13,809,403	11,617,664		2,191,739		1,334,064,000

^a Desilverized soft lead is included; for quantity see page 942.

^b Antimonial lead is excluded; for quantity see page 943.

^c Desilverized soft lead is excluded.

^d For 1917 and 1918, average sales price.

PRODUCTION BY MONTH.

The collection of statistics of the production of lead in this country during the period of participation in the war gives the data for the following table.

Refined primary lead produced in the United States, 1918.

Month.
January.....
February.....
March.....
April.....
May.....
June.....
July.....
August.....
September.....
October.....
November.....
December.....

In the table given above all secondary lead, antimonial lead, and bullion of domestic and foreign origin, and quantity at smelters and refineries and in lead produced at smelters treating ore is not included, therefore, are not comparable with those given in the table below shows the narrow margin of profit and the larger quantities of lead and bullion and the freight congestion in the early part of the year lead given as stocks were of course not for commitment or under allotment.

Lead, antimonial lead, and bullion produced and in stock in the United States, 1918.

Month.	Production during month.				
	Domestic refined.	Foreign refined.	Antimonial.	Domestic bullion.	Foreign bullion.
January.....	44,721	4,249	1,483	29,270	2,000
February.....	40,415	5,835	1,069	26,753	2,000
March.....	43,518	7,222	2,779	26,145	2,000
April.....	40,473	9,822	3,305	27,100	2,000
May.....	47,783	8,292	1,746	29,409	2,000
June.....	47,929	9,107	1,346	24,664	2,000
July.....	46,460	8,938	485	20,098	2,000
August.....	47,890	8,101	2,428	25,250	2,000
September.....	47,239	8,327	1,128	23,370	2,000
October.....	53,193	8,980	2,182	24,433	2,000
November.....	48,289	8,748	1,950	23,653	2,000
December.....	44,704	9,770	1,868	24,988	2,000

Lead, antimonial lead, and bullion produced and in stock, in 1918, by months, in short tons—Continued.

Month.	Stocks at refineries at end of month.						Lead in transit at end of month.			
	Domestic refined.	Foreign refined.	Refined not separated.	Antimonial.	Domestic bullion.	Foreign bullion.	Lead in process and by-products.	Domestic refined.	Foreign refined.	Domestic bullion.
January.....	9,725	1,732	10,019	1,066	1,842	80	19,235	12,038	.....	10,993
February.....	7,617	2,021	7,330	1,572	1,373	30	19,992	13,475	84	16,741
March.....	6,730	739	3,609	598	7,482	954	19,973	12,407	532	10,053
April.....	2,258	1,253	2,045	2,498	6,316	10,341	25,195	9,377	426	6,181
May.....	2,780	530	2,813	1,868	6,785	12,013	24,061	10,380	137	9,106
June.....	2,275	277	1,720	1,041	0,347	13,269	26,403	8,428	800	8,728
July.....	2,316	222	1,450	421	5,290	5,782	29,966	11,935	890	8,408
August.....	2,243	.....	1,187	899	4,193	10,111	34,405	11,925	.....	10,037
September.....	3,617	446	744	445	4,161	8,201	36,540	11,340	.....	14,876
October.....	2,430	.....	769	199	1,983	7,163	31,379	12,855	331	12,289
November.....	2,510	.....	1,092	505	2,250	4,645	34,035	10,573	.....	9,706
December.....	10,314	183	4,513	1,303	5,135	2,924	35,717	5,932	125	8,797

PRODUCTION BY STATES.

The production of refined lead can with difficulty be apportioned according to sources of ore, owing to the fact that lead refiners treat products already smelted, whose origin may, as in custom refining, be unknown to them, because the identity of the ore is preserved only as far as the smelter. Accordingly, the following table is compiled, so far as possible, from smelter figures. It includes "pig lead" reported by all known smelters running on Mississippi Valley or southern lead ores and "work lead" produced at all other lead smelters in this country. The greater part of the product reported by smelters operated in conjunction with refineries is stated in terms of refined lead. A like part of the antimonial lead is thus eliminated from the "work lead" produced and appears only in the figures of production of antimonial lead.

In addition to the domestic lead ores smelted in this country, small quantities of domestic lead ore have been exported to smelters in Canada. In 1912 soft lead amounting to 63 tons was smelted from Wisconsin ores at Canadian smelters, and in 1913 soft lead amounting to 37 tons from Wisconsin ores and desilverized lead amounting to 98 tons from Idaho and Washington ores were smelted at Canadian smelters. The desilverized lead smelted in Canada from Washington ores amounted to 31 tons in 1914, to 137 tons in 1915, and to 2,001 tons in 1916. In 1917 silver-lead ores from Idaho and Montana smelted in Canada produced 4,570 tons of lead. Ores from Washington yielded 1,388 tons of lead at Canadian smelters in 1918.

Primary lead smelted or refined in the United States, 1907-1918, by sources, in short tons.

Source of ore.	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918
Domestic ore:												
Alaska.....	2,413	3	69	75	51	15	4,901	5,601	353	659	894	531
Arizona.....	15	1,464	1,307	948	3,428	3,891	4,901	3,294	6,083	15,176	7,300	6,114
Arkansas.....	938	513	14	1,207	615	811	3,294	3,698	5,606	3,633	11,471	6,239
California.....	32,532	28,729	30,865	38,542	30,442	37,039	42,840	47,188	32,332	33,046	29,327	29,395
Colorado.....	123,232	96,464	103,747	106,951	117,335	117,335	137,892	177,827	160,680	170,059	171,045	142,640
Idaho.....	223	102	273	283	308	513	619	427	910	670	867	1,010
Illinois.....	1,798	2,283	2,783	1,363	2,322	1,937	1,504	1,043	1,320	1,737	2,693	5,023
Iowa.....	1,775	122,451	141,105	161,659	182,203	162,610	152,436	194,773	105,633	218,253	218,109	187,783
Kansas.....	122,856	2,370	1,451	1,451	2,517	1,943	2,517	4,853	4,853	11,858	12,334	8,728
Kentucky.....	3,490	3,796	4,732	2,246	1,082	5,699	6,142	5,996	7,664	11,858	12,334	8,728
Missouri.....	2,047	586	1,350	1,890	1,371	2,511	1,821	741	2,157	3,290	3,428	5,140
Montana.....	.....	.....	.....	.....	35	34	10	.....	.....	.....	.....	49
Nevada.....	404	1,409	2,262	1,865	1,925	2,500	3,214	3,916	4,346	10,969	19,646	58,765
New Hampshire.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Mexico.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New York.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
North Carolina.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oklahoma.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oregon.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Dakota.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tennessee.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Texas.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Utah.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Virginia.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Washington.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wisconsin.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wyoming.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Undistributed.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Zinc residues.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Foreign ore:	375,099	310,762	363,319	389,211	405,663	415,395	436,430	534,462	537,012	596,221	579,385	556,878
Africa.....	288	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

LEAD.

SOFT LEAD.

The lead ores of the Mississippi Valley are almost free from silver and the lead produced from them is known as "soft lead."

A little lead ore of this kind is also mined in Washington and other Western States, but this ore has been generally smelted by plants treating argentiferous lead ore, and thus the resulting lead has not been distinguished from the desilverized product of those plants. With two exceptions, the smelters running exclusively on these soft-lead ores do not desilverize their product. Their output is shown in the column headed "Soft lead" in the table on page 938, giving the production of refined lead for 1720-1918. However, considerable soft-lead ore has been annually smelted and some purchased soft pig lead has been desilverized by the silver-lead smelters. Since 1904 the St. Louis Smelting & Refining Co. has regularly desilverized its product. In 1915 the St. Joseph Lead Co. installed desilverizing kettles, and a part of its product has since been desilverized. This desilverized soft lead, for the years prior to 1906, has not been recorded separately from the lead produced from silver-lead ores, though the lead content of the soft-lead ores so smelted and desilverized has been recorded since 1894. Since 1906 the quantity of soft lead produced by each State has been recorded, as shown in part in the preceding table. In the following table the undesilverized output of the soft-lead smelters is given in the first column and the refined lead output from soft-lead ores smelted and desilverized is given in the second column. The figures do not give the total quantity of lead recovered from soft-lead ores, for the lead recovered in the form of pigments, which are made principally from soft-lead ores, should be taken into account. The lead content of pigments smelted directly from ore in 1918 is given in the fourth column, and the total output of soft lead in the fifth column. The percentage which the total production of soft lead makes of the total domestic production of lead, composed of refined domestic lead plus lead in pigments and lead in antimonial lead, is shown in the last column. As will be noted, the percentage ranges from 37 to nearly 50 in the period under review. A little foreign lead is incorporated in the lead content of the leaded zinc pigment, but as it is difficult to determine just what quantity is involved it has been disregarded.

Soft lead produced in the United States, 1907-1918, in short tons.

Year.	Soft pig lead.			Soft lead recovered in pigments.	Total soft lead.	Total domestic lead. ^a	Soft lead percentage of total domestic lead.
	Undesilverized.	Desilverized.	Total soft pig lead.				
1907.....	99,801	29,829	129,630	0,574	130,204	365,506	37
1908.....	101,012	29,809	130,881	7,377	138,258	326,657	42
1909.....	117,158	32,532	149,690	7,292	156,982	367,303	43
1910.....	141,318	27,952	169,270	7,603	176,873	391,543	45
1911.....	155,947	35,067	191,014	7,678	198,692	407,787	49
1912.....	141,248	29,789	171,037	10,323	181,360	410,159	44
1913.....	151,867	29,433	181,300	10,993	192,293	435,343	40
1914.....	158,219	43,500	201,725	11,914	213,639	537,676	40
1915.....	161,461	44,001	205,462	12,782	218,244	536,312	41
1916.....	167,515	68,244	235,759	13,252	249,011	580,225	43
1917.....	188,503	56,268	244,771	12,870	257,641	574,338	45
1918.....	210,463	47,418	257,881	13,093	270,974	562,218	48

^a Includes domestic refined lead, domestic lead in antimonial lead, and domestic lead in pigments.

LEAD.

ANTIMONIAL LEAD.

The production of by-product antimonial lead from lead ores derived from all sources, as reported by all lead smelters operating in this country, is shown for the period 1871-1918, years being estimated from the output of desilverized lead in the chapter on lead in Mineral Resources, 1914. The later years are given in the table below. Since 1909 producers have been asked to distinguish between the by-product antimonial lead derived from ore and bullion of foreign origin and that from domestic sources. Inasmuch as the antimonial skimmings are worked in batches, the output of antimonial lead in any one year does not necessarily correspond strictly to the bullion refined during the year, hence the output of antimonial lead is distributed as between domestic and foreign in proportion to the lead refined from domestic and foreign bullion during the year. The total antimonial lead produced during the period 1907-1918 was equal to 5.13 per cent of the lead refined from domestic and foreign bullion during

By-product antimonial lead produced in the United States, 1907-1918.

Year.	Total lead refined from base bullion (short tons).	Percentage of by-product antimonial lead.	Antimonial lead.				
			From domestic ore (short tons).	From foreign ore (short tons).	Total.		
					Quantity (short tons).	Value.	Antimonial content (short tons).
1907.....	283,759	3.5	7,780	2,130	9,910	\$1,322,985	1,561
1908.....	265,683	5.1	9,274	4,355	13,629	1,264,771	2,440
1909.....	297,219	4.3	8,889	4,007	12,896	1,231,019	2,360
1910.....	301,072	4.7	10,140	3,929	14,069	1,338,090	2,229
1911.....	295,305	4.8	9,636	4,442	14,078	1,380,556	2,254
1912.....	309,857	4.4	8,549	5,063	13,612	1,311,348	1,949
1913.....	301,160	5.5	14,607	1,908	16,505	1,601,854	2,608
1914.....	340,397	4.0	16,473	1,192	17,665	1,672,167	2,693
1915.....	344,593	6.7	19,371	3,853	23,224	3,065,736	3,425
1916.....	335,375	7.2	17,246	6,792	24,038	4,483,582	3,498
1917.....	365,998	5.1	15,279	3,367	18,646	3,781,660	2,759
1918.....	382,314	4.9	19,777	7,793	27,570	2,826,350	2,668
Average.....		5.13					

Details of the production and consumption of antimony in the United States are given in the chapter on antimony in Mineral Resources, 1918.

LEAD PIGMENTS.

PIGMENTS SMELTED DIRECTLY FROM ORE.

In addition to leaded zinc oxide and zinc-lead oxide, noted more particularly in connection with the production of pigments, two other lead pigments are made directly from ore, namely, sublimed white lead and sublimed blue lead. Sublimed white lead consists of lead sulphate 75 per cent, lead oxide 15 per cent, and zinc oxide 5 per cent. Sublimed blue lead consists of lead sulphate 50 to 53 per cent, lead oxide 41 to 38 per cent,

proportions of lead sulphide, lead sulphite, and zinc oxide. Zinc-lead oxide contains from 46 to 50 per cent of lead sulphate, from 52 to 46 per cent of zinc oxide, and a small quantity of zinc sulphate. No zinc-lead oxide is made at present. Leaded zinc oxide may vary from 4 to 20 per cent in lead sulphate, the remainder being zinc oxide, with a small portion of zinc sulphate.

The lead content of pigments smelted directly from ore is given in the fourth column of the table on page 942. As there are but two producers of sublimed lead or basic lead sulphate, the output may not be revealed. The production of leaded zinc oxide is given in the chapter on zinc.

PIGMENTS MANUFACTURED FROM PIG LEAD.

Manufactured lead pigments sold in 1917-18.

Pigment.	1917			1918		
	Quantity (short tons).	Value.	Average price per ton.	Quantity (short tons).	Value.	Average price per ton.
Basic carbonate white lead:						
In oil.....	87,331	\$17,608,067	\$201.03	82,799	\$17,224,480	\$208.03
Dry.....	27,869	4,920,864	176.57	20,089	3,542,368	176.33
Red lead.....	25,178	5,523,018	216.78	30,069	5,928,597	197.17
Orange mineral.....	44,102	8,611,074	195.25	48,874	8,825,724	180.58
Litharge.....	184,780	36,603,923	.....	181,831	35,521,169	.....

SECONDARY LEAD.

Secondary lead is obtained mainly from skimmings, drosses, old metal, and alloys, such as babbitt, solder, and type metal. The recovery of lead by refining these materials constitutes an integral part of the lead industry. This business is carried on mostly at small refineries scattered over the United States, but the large smelters and refineries working primary lead frequently find it advantageous to incorporate material from secondary sources. The product of such secondary refineries is of two classes—pig lead and lead in alloys. The lead in alloys may have been recovered in the form of pig lead and alloyed at the refinery, or it may have been refined as an alloy, being brought to the desired composition by the addition of the requisite metal.

Secondary lead recovered in the United States, 1909-1918, in short tons.

Year.	Pig lead.	Lead in alloys.	Total recovered lead.	Value.
1909.....	18,360	23,327	41,687	\$3,585,000
1910.....	29,492	25,930	55,422	4,877,000
1911.....	27,389	20,895	54,284	4,836,000
1912.....	30,200	30,902	61,102	6,045,000
1913.....	33,104	39,730	72,834	6,409,000
1914.....	29,337	31,725	61,062	4,763,000
1915.....	36,400	42,500	78,900	7,416,000
1916.....	56,700	39,600	96,300	13,289,000
1917.....	45,100	48,400	93,500	16,082,000
1918.....	41,146	55,954	97,100	13,788,000

LEAD.

MINE PRODUCTION.

The preceding tables give the quantity of lead recovered and refining operations either as metallic lead, antimonial lead, or as lead in pigments. The three show the source or derivation of the domestic lead through smelting and refining operations. The origin of the more accurately shown by the mines reports, because they rarely treat mixtures of ores, sometimes long after received, so that the actual output of metallic lead correspond at all closely to the product of the mines for the data for these tables are taken from the chapters on copper, lead, and zinc in the Eastern, Central, and Western.

It should be understood that strict comparisons between are not possible, because the form of statement is not lead being stated as recovered lead in some States, in others, and as partly one and partly the other in still others. It is hoped that this practice, which is largely necessary, can be soon abandoned in favor of stating the lead metal.

MINE PRODUCTION, 1907-1918.

The following table gives the output of lead since the year in which there were mines reports for all lead-producing Missouri holds first rank in mine production of lead in the period, with Idaho in second and Utah in third place held fourth place until 1918 when Oklahoma went into

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Mine production of lead by States, 1907-1918, in short tons.

[illegible]

LEAD.

MINE PRODUCTION BY KINDS OF ORE

The following table shows for each lead-producing quantity of lead-bearing ores produced and the of lead-bearing ore. The column headed "All copper ore, copper-lead ore, and dry or siliceous produced in Colorado contained 8,538 short tons Nevada, 2,914 tons. This lead, as in other States from parts of the ore from certain counties, has distributed through the whole of the "All other Colorado and Arizona. The total crude ore of silver, copper, lead, or zinc is given for each lead that a comparison may be made of the relative operations in these States, of which the quantity is the best measure. As shown by the table, Missouri position in the production of crude lead ore 70 per cent of the crude lead ore mined in the United States. Oklahoma raised nearly 40 per cent of the crude lead ore in 1918. Missouri, which for many years had been the largest producer of crude ore carrying any or all of the five metals, gave way to Arizona, Utah, and Michigan with the introduction of low-grade copper ore.

The table gives the quantity of lead contained each State in 1918 and the lead content of each ore. The percentage of lead contained in the lead ore, and the zinc ore of each State is also given. In States having a considerable production of lead ore, the average lead content was 32.3 per cent in Washington down to 3.3 per cent in the States where the average was 5.2 per cent. The zinc ores are much less rich in lead than the lead ores, the average lead content of the zinc ores was 0.1 per cent. In 1918, a quantity of lead in the mine production of lead in 1918, a quantity of 26.2 per cent was derived from lead ores, 26.2 per cent from zinc ores, and 2.5 per cent from other figures of mine production of lead are taken from gold, silver, copper, lead, and zinc in the various States in the prefatory note.

Mine production of lead in the United States in 1918, by States and kinds of ore, in short tons.

State.	Lead ores.			Lead-zinc ores.			Zinc ores.			All other ores.		Total.	
	Crude ore.	Lead content.		Crude ore.	Lead content.		Crude ore.	Lead content.		Crude ore.	Lead content.	Crude ore.	Lead content.
		Quantity.	Percentage.		Quantity.	Percentage.		Quantity.	Percentage.				
Alaska.....										2,817,624	554	2,817,624	564
Arizona.....	79,811	5,710	7.2	13,043	404	3.1	2,129	13	0.5	18,943,503	120	19,038,486	6,232
Arkansas.....							37,000	120	.3			37,000	120
California.....	38,746	6,247	16.1				17,349	29	.2	2,447,316	410	2,503,411	6,686
Colorado.....	183,274	16,573	9.0	291,196	7,002	2.4	60,350	862	1.4	1,780,070	8,538	2,314,890	32,980
Idaho.....	1,420,878	131,446	9.3	490,917	15,803	3.2	5,506	90	1.6	174,318	9	2,091,619	147,348
Illinois.....				280,900	2,273	.8						280,900	2,273
Kansas.....				1,023,400	7,252	.7						1,023,400	7,252
Kentucky.....							3,150			(9)	185	3,150	185
Missouri.....	5,532,400	181,302	3.3	3,614,209	12,783	.3						9,146,800	194,175
Montana.....	31,423	3,269	10.4	1,090,955	15,240	1.4	1,873	1	.1	6,699,716	58	7,823,967	18,568
Nevada.....	48,169	6,486	13.5	23,246	2,263	9.5	10,977	55	.5	6,390,187	2,914	6,472,379	11,658
New Hampshire.....				75	30	40.0						75	30
New Mexico.....	17,945	3,098	17.3	13,933	569	4.1	110,213	2		4,607,693	530	4,749,784	4,199
New York.....	43	29	67.4				40,850					40,850	29
Oklahoma.....				5,754,700	56,697	1.0						5,754,700	56,697
Oregon.....	2	1	50.0									2	1
South Dakota.....	357	27	7.6									357	27
Tennessee.....				32,217	1,705	5.3	598,742					32,217	1,705
Texas.....	49	13	26.5									49	13
Utah.....	527,759	50,759	10.8	428,985	25,571	6.0	1,849	3	.2	13,747,125	1,171	14,703,713	83,504
Virginia.....				25,908	815	3.1						25,908	815
Washington.....	8,125	2,624	32.3							130,786	12	138,911	2,636
Wisconsin.....				2,377,300	4,533	.2						2,377,300	4,533
	7,869,181	413,679	5.2	15,462,975	152,280	1.0	889,988	1,180	.1	60,226,773	14,515	84,468,922	581,654
Percentage of total lead derived from each kind of ore.....		71.1			25.2			.2			2.5		100.0

* Estimated.

* By-product from unknown quantity of fluorspar ore.

LEAD.

MINE PRODUCTION BY DISTRICTS.

The next table shows the mine production of lead by individual districts so that they may be compared as to extent of mining operations, shown by the output of crude ore, as to character of ore, whether sulphide or oxidized, whether lean or rich, and as to relative rank as lead producers.