



LIBRARIES

UNIVERSITY OF WISCONSIN-MADISON

Statistical appendix to Minerals yearbook 1932-33. Year 1931-32 1934

Kiessling, O. E.

Washington, D. C.: Bureau of Mines : United States Government
Printing Office, 1934

<https://digital.library.wisc.edu/1711.dl/PPYAWXJZXOESO8L>

<http://rightsstatements.org/vocab/NoC-US/1.0/>

As a work of the United States government, this material is in the public domain.

For information on re-use see:

<http://digital.library.wisc.edu/1711.dl/Copyright>

The libraries provide public access to a wide range of material, including online exhibits, digitized collections, archival finding aids, our catalog, online articles, and a growing range of materials in many media.

When possible, we provide rights information in catalog records, finding aids, and other metadata that accompanies collections or items. However, it is always the user's obligation to evaluate copyright and rights issues in light of their own use.

U.S. DEPARTMENT OF THE INTERIOR
HAROLD L. ICKES, Secretary

U.S. BUREAU OF MINES
SCOTT TURNER, Director

STATISTICAL APPENDIX TO
MINERALS YEARBOOK
1932-33

O. E. KIESSLING
Chief Economist, Division of Mineral Statistics



UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1934

CONTENTS

	Page
Introduction, by O. E. Kiessling.....	III
Summary of mineral production, by M. B. Clark and E. T. Shuey.....	A1
Clay, by R. W. Metcalf.....	1
Mica, by F. W. Horton and B. H. Stoddard.....	7
Slate, by Oliver Bowles and A. T. Coons.....	13
Gypsum, by C. Galihier and R. W. Metcalf.....	17
Phosphate rock, by Bertrand L. Johnson and B. H. Stoddard.....	25
Gold, silver, copper, and lead in South Dakota, by Chas. W. Henderson.....	31
Gold, silver, copper, and lead in Wyoming by Chas. W. Henderson.....	35
Gold, silver, copper, lead, and zinc in Montana, by T. H. Miller.....	39
Natural gasoline, by G. R. Hopkins and E. M. Seeley.....	55
Lime, by A. T. Coons.....	67
Gold, silver, copper, lead, and zinc in New Mexico, by Chas. W. Henderson.....	77
Gold, silver, copper, lead, and zinc in Texas, by Chas. W. Henderson.....	89
Gold, silver, copper, lead, and zinc in Utah, by C. N. Gerry and Paul Luff.....	91
Natural gas, by G. R. Hopkins and H. Backus.....	103
Gold, silver, copper, lead, and zinc in Idaho, by C. N. Gerry and T. H. Miller.....	117
Gold, silver, copper, lead, and zinc in Washington, by C. N. Gerry and T. H. Miller.....	133
Gold, silver, copper, lead, and zinc in Colorado, by Chas. W. Henderson.....	141
Stone, by A. T. Coons.....	163
Gold, silver, copper, lead, and zinc in Arizona, by C. N. Gerry and T. H. Miller.....	187
Gold, silver, copper, lead, and zinc in California, by V. C. Heikes and Charles White Merrill.....	199
Gold, silver, copper, lead, and zinc in Oregon, by V. C. Heikes and Charles White Merrill.....	217
Ore concentration, by T. H. Miller and R. L. Kidd.....	225
Gold, silver, copper, lead, and zinc in Nevada, by V. C. Heikes and Charles White Merrill.....	239
Coke and byproducts, by W. H. Young, H. L. Bennit, and F. G. Tryon.....	251
Sand and gravel, by H. H. Hughes and M. Allan.....	289
Crude petroleum and petroleum products, by G. R. Hopkins and A. B. Coons.....	299
Coal.....	373
Part 1.—Bituminous coal, by W. H. Young, L. Mann, and F. G. Tryon.....	373
Part 2.—Pennsylvania anthracite, by W. H. Young, H. L. Bennit, and F. G. Tryon.....	439
Gold and silver, by J. P. Dunlop.....	455
Cement, by B. W. Bagley.....	481

414263
NOV 13 1934

MNK
HA

1931-32 INTRODUCTION
SUPP.

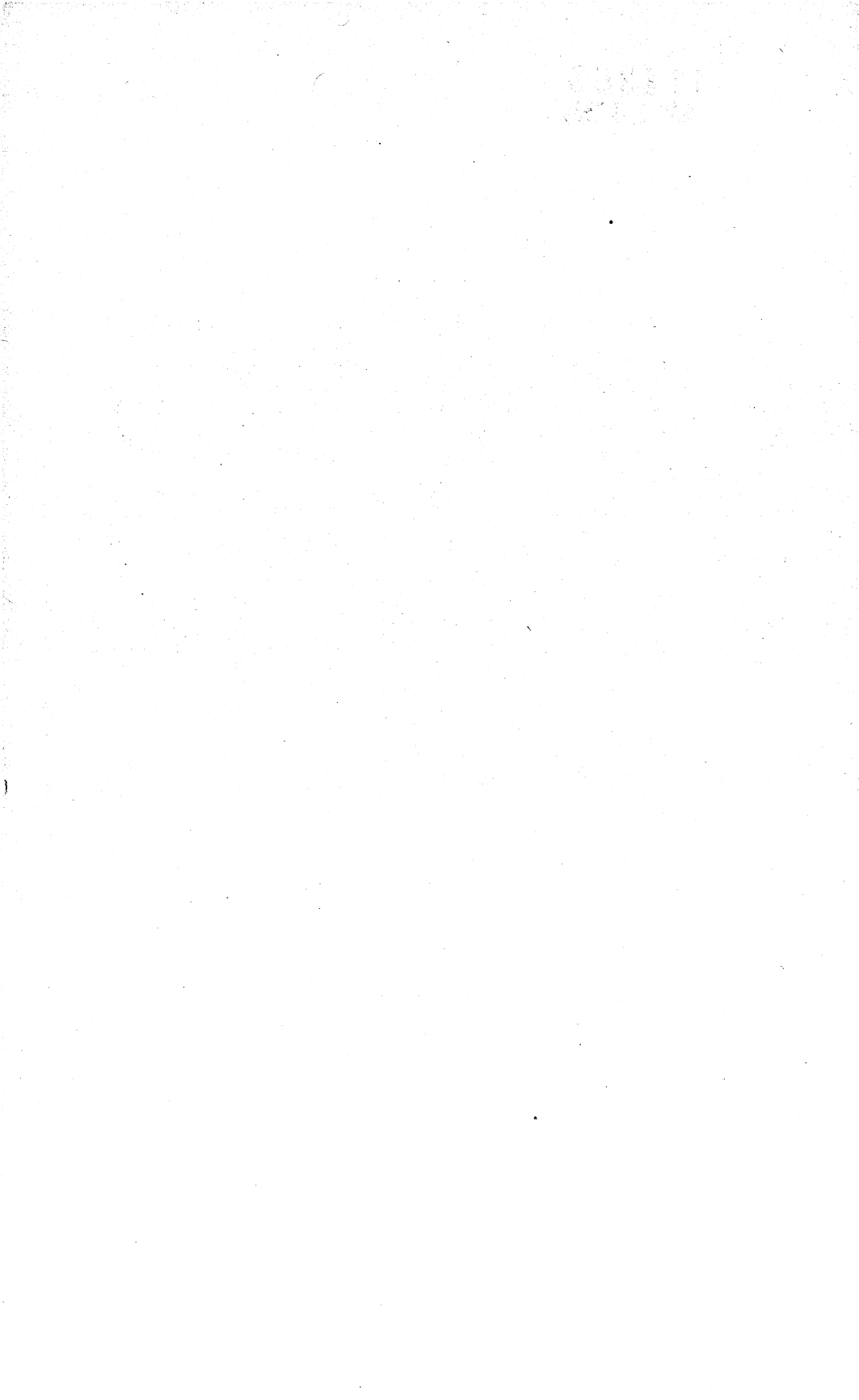
The chapters of final statistics included in this volume supplement the discussions of specific mineral commodities contained in the Minerals Yearbook 1932-33. Each was published separately upon completion of detailed compilations, and copies already have been supplied to mineral producers. To provide a single convenient reference volume containing all the appendixes, the reports are herein assembled in bound form as the Statistical Appendix to the Minerals Yearbook 1932-33.

Continuation in the Minerals Yearbook of essential information released formerly in various publications, including Mineral Resources of the United States, was outlined by Director Scott Turner in the foreword to the Minerals Yearbook 1932-33. Greater usefulness of mineral statistics through timely publication of figures a relatively short time after the close of the year covered is achieved only by following a rigorous schedule both for the completion of canvasses and for printing. The Minerals Yearbook containing final detailed data on most minerals is sent to the printer early in June. Mimeographed summaries are released at the same time.

For some minerals, however—particularly those where the number of producers is large—it is physically impossible, with present limited staff and resources, to complete the canvasses and prepare the detailed tables until after the Yearbook has been sent to the printer. For these minerals the data included in the Yearbook are subject to slight revision and are supplemented by final detailed tables subsequently published as separate statistical appendixes to the Minerals Yearbook and finally assembled in bound form, as in this volume.

Copies of the separate chapters of the Statistical Appendix are distributed free by the Bureau to mineral producers who cooperate in supplying information; also, a limited number of the bound volumes are distributed to reference libraries and educational institutions. Copies of either the separate chapters or the bound appendix can be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., at a moderate cost. The office of the Superintendent of Documents is in no way connected with the Bureau of Mines, and no money derived from sales reverts to the Bureau.

O. E. KIESSLING.



SUMMARY OF MINERAL PRODUCTION

(MINERAL PRODUCTION BY STATES AND GENERAL SUMMARY)

By M. B. CLARK AND E. T. SHUEY

INTRODUCTION

This report continues, in abbreviated form, the series of annual summaries published as chapters of Mineral Resources.

Unit of measurement.—The unit of measurement used by the Bureau of Mines for each mineral product in reports on the mineral resources is that common to the industry concerned, and the variation in these units makes it impracticable, if not impossible, directly to combine and compare the different minerals except as to value, especially because some products are measured by volume, although most are measured by weight.

Elimination of duplication.—In the totals for the United States, shown in the following general tables, duplication has been eliminated wherever practicable, and in the State totals given in the State tables virtually all duplication has been eliminated. For instance, in both general and State tables the output of coke is shown, but its value is not included in the totals, as the value of the coal used in its manufacture enters into the value of the coal production, which is included in the totals. The value of the products of the clay industries is included in both general and State totals as representing the first marketable form of the greater part of the clay produced; the quantity and value of the clay mined and sold in the raw state by miners to users of clay are shown separately, but the value is not included in the totals.

In the general tables both iron ore and pig iron are shown, but the value of the pig iron rather than that of the iron ore is included in the totals, as that is considered the better means of presenting the statistics for iron in its first marketable form. For gold, silver, copper, lead, and zinc the value of "smelter output" is included in the general totals, and to account more fully for the value of the ores treated these smelter figures are supplemented by the value of the by-product sulphuric acid. The value of pigments (white lead, red lead, lithopone, litharge, and orange mineral) manufactured from metals is not included in the general tables, as the base from which they are made is included in the output of lead or zinc, whereas the value of sublimed blue lead, sublimed white lead, leaded zinc oxide, and zinc oxide is included, as these are made in large part direct from the ores and do not enter into the lead or zinc totals, which represent smelter output.

In the State tables also iron ore and pig iron are both shown. As blast-furnace products cannot be distributed according to the States in which the ore is mined, the value of the ore is used in the State totals. For ores of gold, silver, copper, lead, and zinc no values are shown, and in fact none are recorded; instead, for each of these metals the recoverable content of the ores is used as the basis of valuation. The value of the zinc and lead pigments is not included in the State total, as the recoverable zinc and lead content of the ores from which the products were made is included under zinc or lead. The value of the sulphuric acid produced as a byproduct of copper and zinc smelting is not included in the State total, as tracing this product back to the State producing the ore has not been possible.

GENERAL TABLES

Mineral products of the United States, 1931-32

Product	1931		1932	
	Quantity	Value	Quantity	Value
METALLIC				
Aluminum.....pounds..	177,544,000	\$37,284,000	104,885,000	\$20,453,000
Antimonial lead.....short tons (2,000 pounds)...	¹ 21,842	(¹)	¹ 21,024	(¹)
Antimony:				
Metal.....do.....	(²)	(^{2 3})	² 1,776	(^{2 3})
Ore.....do.....			900	(⁴)
Bauxite.....long tons (2,240 pounds).....	195,895	1,140,629	96,349	548,168
Cadmium.....pounds.....	1,050,529	409,706	799,501	(⁵)
Chromite.....long tons.....	268	3,509	155	2,160
Copper, ⁶ sales value.....pounds.....	1,042,711,178	94,887,000	544,009,948	34,273,000
Copper.....long tons.....	398,295	30,764,549	218,646	14,003,672
Ferro-alloys.....troy ounces.....	2,395,878	49,527,200	2,449,032	50,626,000
Gold ⁷				
Iron:				
Ore ³.....long tons.....	28,516,032	³ 74,123,910	5,331,201	³ 12,898,011
Pig.....do.....	17,812,579	285,147,156	8,518,400	126,032,714
Lead (refined), ⁸ sales value.....short tons.....	390,260	28,879,000	255,337	15,320,000
Manganese ore (35 percent or more Mn).....long tons.....	39,242	699,121	17,777	377,222
Manganiferous ore (5 to 35 percent Mn).....long tons.....	281,414	976,549	25,434	92,135
Mercury:				
Metal.....flasks (76 pounds net).....	24,947	2,179,145	12,622	731,129
Ore.....short tons.....	(⁹)	(⁹)	(⁹)	(⁹)
Nickel.....do.....	373	202,406	195	88,515
Ores (crude), old tailings, etc.:				
Copper.....do.....	34,049,000	(⁹)	12,319,000	(⁹)
Copper-lead and copper-lead-zinc.....do.....	213,000	(⁹)	167,000	(⁹)
Dry and siliceous (gold and silver).....do.....	8,329,000	(⁹)	8,226,000	(⁹)
Lead.....do.....	6,043,000	(⁹)	4,454,000	(⁹)
Lead-zinc.....do.....	5,427,000	(⁹)	3,336,000	(⁹)
Zinc.....do.....	4,500,000	(⁹)	1,884,000	(⁹)
Platinum and allied metals (value at New York City).....troy ounces.....	36,205	1,274,029	17,616	592,000
Silver.....do.....	30,932,050	8,970,294	23,980,773	6,762,578
Tin (metallic equivalent).....short tons.....	4	2,050	(¹⁰)	220
Titanium ore:				
Ilmenite.....do.....	(⁹)	(⁹)	(⁹)	(⁹)
Rutile.....do.....	(⁹)	(⁹)	(⁹)	(⁹)
Tungsten ore (60 percent concentrates).....do.....	1,404	928,000	396	218,394
Uranium and vanadium ores.....do.....	(⁹)	(⁹)	(⁹)	(⁹)
Zinc, ⁶ sales value.....do.....	291,996	22,192,000	207,148	12,429,000
Total value of metallic products (approximate).....		567,200,000		283,700,000
NONMETALLIC				
Arsenious oxide.....short tons.....	13,777	796,744	12,483	650,902
Asbestos.....do.....	3,228	118,967	3,559	105,292
Asphalt:				
Native.....do.....	503,383	2,930,451	340,019	1,942,943
Oil (including road oil) ².....do.....	2,206,568	² 16,614,594	2,308,785	² 14,898,492
Barite (crude).....do.....	174,520	994,655	129,854	745,955
Borates (naturally occurring sodium borates).....short tons.....	178,550	4,931,295	181,915	3,023,844

¹ Figures represent antimonial lead produced at primary refineries from both domestic and foreign primary and secondary sources; no figures for value of antimonial lead available. Estimate of value of primary antimony and lead contents of antimonial lead from domestic sources included in total value of metallic products.

² All from foreign ore; Bureau of Mines not at liberty to publish figures for 1931 and value for 1932.

³ Value not included in total value.

⁴ Bureau of Mines not at liberty to publish figures. Value excluded from metallic total as duplicated in content of antimonial lead.

⁵ Value included in total value of metallic products; Bureau of Mines not at liberty to publish figures.

⁶ Product from domestic ores only.

⁷ Value, \$20.671834625323 an ounce.

⁸ Figures not available.

⁹ Figures showing values not available.

¹⁰ 1,000 pounds.

14 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Mineral products of the United States, 1931-32—Continued

Product	1931		1932	
	Quantity	Value	Quantity	Value
NONMETALLIC—continued				
Bromine.....pounds	8,935,330	\$1,854,650	5,727,561	\$1,182,569
Calcium-magnesium chloride.....short tons	86,156	1,687,166	66,286	1,163,385
Cement.....barrels (376 pounds net)	128,377,384	142,579,826	81,368,031	82,718,197
Clay:				
Products ¹¹		177,562,025		89,024,341
Raw ¹².....short tons	2,519,495	¹³ 8,352,185	1,391,816	¹⁴ 5,201,609
Coal:				
Bituminous ¹².....do	382,089,396	588,895,000	309,709,872	406,677,000
Pennsylvania anthracite.....do	59,645,652	296,354,586	49,855,221	222,375,129
Coke ¹⁵.....do	33,483,686	¹⁶ 161,608,724	21,738,730	¹⁷ 104,336,616
Diatomite and tripoli ¹⁸.....do	26,682	310,131	14,775	232,700
Emery.....do	512	5,557	250	2,781
Feldspar (crude).....long tons	147,119	861,059	104,715	539,641
Fluorspar.....short tons	53,484	931,275	25,251	392,499
Fuller's earth.....do	288,400	3,055,570	252,902	2,440,736
Garnet for abrasive purposes.....do	2,946	193,015	1,950	147,350
Gems and precious stones.....do		(¹⁴)		(¹⁴)
Graphite:				
Amorphous.....short tons	(¹⁵)	(¹⁵)	(¹⁵)	(¹⁵)
Crystalline.....pounds	(¹⁵)	(¹⁵)	(¹⁵)	(¹⁵)
Grindstones and pulpstones.....short tons	8,724	342,149	7,668	247,440
Gypsum.....do	2,559,017	20,801,357	1,416,274	12,906,286
Lime.....do	2,707,614	18,674,913	1,959,990	12,302,231
Magnesite (crude).....do	73,602	499,239	38,462	233,304
Mica:				
Scrap.....do	6,621	99,415	7,040	83,777
Sheet.....pounds	962,953	111,830	338,997	45,882
Millstones.....do		5,330		4,450
Mineral paints:				
Natural pigments ¹⁶.....short tons	(¹⁶)	(¹⁶)	(¹⁶)	(¹⁶)
Zinc and lead pigments ¹⁷.....do	123,963	15,225,300	92,812	9,821,267
Mineral waters.....gallons sold	(¹⁴)	(¹⁴)	(¹⁴)	(¹⁴)
Natural gas.....M cubic feet	1,686,436,000	392,816,000	1,555,990,000	334,632,000
Natural gasoline.....gallons	1,831,918,000	63,732,000	1,523,800,000	49,244,000
Oilstones, etc.....short tons	370	81,951	331	63,960
Peat.....do	(¹⁴)	(¹⁴)	(¹⁴)	(¹⁴)
Petroleum.....barrels (42 gallons)	851,061,000	550,630,000	785,159,000	630,460,000
Phosphate rock.....long tons	2,534,959	9,288,485	1,706,904	5,738,493
Potassium salts.....short tons	¹⁸ 63,770	3,086,955	¹⁸ 55,620	2,102,590
Pumice.....do	68,819	338,586	53,214	235,204
Pyrites.....long tons	330,848	974,820	186,455	492,043
Salt.....short tons	7,358,070	21,541,012	6,447,351	19,468,096
Sand:				
Glass.....do	1,677,882	2,779,245	1,370,255	2,266,564
Molding, building, etc., and gravel.....do	151,801,162	83,501,075	118,667,642	55,255,512
Sand-lime brick ¹⁹.....thousands	143,673	1,236,825	52,853	433,118
Silica (quartz).....short tons	7,851	69,103	7,487	59,158
Slate.....do	368,420	5,498,336	284,240	3,104,300
Stone.....do	97,933,180	135,085,627	²⁰ 70,644,310	²⁰ 89,063,608
Sulphur.....long tons	1,376,526	24,800,000	1,108,852	20,000,000
Sulphuric acid (60° Baume) from copper and zinc smelters.....short tons	862,729	6,491,515	600,334	4,028,738
Talc and soapstone ²¹.....do	²¹ 163,752	²¹ 1,852,472	²¹ 123,221	²¹ 1,361,633
Total value of nonmetallic products (approximate).....		2,592,100,000		2,171,300,000

¹ Value not included in total value.

¹¹ Figures obtained through cooperation with Bureau of the Census.

¹² Includes brown coal and lignite, and anthracite mined elsewhere than in Pennsylvania.

¹³ Figures represent tripoli only. Value of diatomite is included in total value of nonmetallic products; Bureau of Mines not at liberty to publish figures.

¹⁴ No canvass. Estimate of value included in total value of nonmetallic products.

¹⁵ Value included in total value of nonmetallic products; Bureau of Mines not at liberty to publish figures.

¹⁶ Canvass discontinued after 1915. Value of iron ore sold for paint included under last item ("Unspecified").

¹⁷ Sublimed blue lead, sublimed white lead, leaded zinc oxide, and zinc oxide.

¹⁸ Equivalent as K₂O.

¹⁹ According to Bureau of the Census.

²⁰ Includes in 1932 for the first time soapstone used as dimension stone; such soapstone in earlier years included under "Talc and soapstone."

²¹ Figures represent talc only in both 1931 and 1932. In 1931 the value of soapstone is included in total value of nonmetallic products. In 1932 the value of ground soapstone is included in total value of nonmetallic products and that of soapstone used as dimension stone is included for the first time in figures for stone. Bureau of Mines not at liberty to publish figures for soapstone.

SUMMARY OF MINERAL PRODUCTION

A5

Mineral products of the United States, 1931-32—Continued

Product	1931		1932	
	Quantity	Value	Quantity	Value
SUMMARY				
Total value of metallic products.....		\$567,200,000		\$283,700,000
Total value of nonmetallic products (exclusive of mineral fuels).....		699,700,000		427,900,000
Total value of mineral fuels.....		1,892,400,000		1,743,400,000
Total value of "unspecified" (metallic and nonmetallic) products (partly estimated) ²²		7,300,000		²² 6,000,000
Grand total approximate value of mineral products.....		3,166,600,000		2,461,000,000

²² Includes for 1932 the value of bismuth, cadmium compounds, cherts (\$304,300), columbite (\$234), flint lining for tube mills and pebbles for grinding (\$13,070), optical fluor spar (\$59), iodine, iron ore sold for magnets, iron ore sold for paint (\$10,770), lithium minerals, new ingot magnesium (\$228,653), natural magnesium salts (\$896,085), calcareous marl (\$28,000), greensand marl (\$201,173), micaceous minerals (\$55,330), molybdenum (\$1,186,000), selenium, silica sand and sandstone (finely ground) (\$577,091), sodium salts (carbonates and sulphates) from natural sources (\$1,098,394), sulphur ore (\$675), tellurium, and an estimate of the value of miscellaneous mineral products, statistics for which are not collected annually by the Bureau of Mines.

Value of mineral products of the United States, 1880-1932

Year	Metallic		Nonmetallic		Unspecified (metallic and nonmetallic)	Total	
	Value	Increase or decrease, percent	Value	Increase or decrease, percent		Value	Increase or decrease, percent
1880.....	\$187,881,000	(1)	\$173,582,000	(1)	\$4,000,000	\$367,463,000	(1)
1881.....	189,413,000	+0.8	207,207,000	+19	6,500,000	403,120,000	+10
1882.....	215,820,000	+14	230,786,000	+11	6,500,000	453,106,000	+12
1883.....	197,881,000	-8	243,680,000	+6	6,500,000	448,061,000	-1
1884.....	180,284,000	-9	221,756,000	-9	5,000,000	407,040,000	-9
1885.....	172,218,000	-4	242,333,000	+9	5,000,000	419,551,000	+3
1886.....	204,400,000	+19	250,995,000	+4	790,000	456,185,000	+9
1887.....	240,791,000	+18	294,057,000	+17	785,000	535,633,000	+17
1888.....	242,010,000	+5	310,889,000	+6	900,000	553,799,000	+3
1889.....	250,325,000	+3	291,004,000	-6	997,000	542,326,000	-2
1890.....	303,440,000	+21	310,995,000	+7	994,000	615,429,000	+13
1891.....	280,485,000	-8	319,364,000	+3	1,000,000	600,849,000	-2
1892.....	283,715,000	+1	337,517,000	+6	1,000,000	622,232,000	+4
1893.....	223,154,000	-21	321,339,000	-5	1,000,000	545,493,000	-12
1894.....	186,835,000	-16	362,410,000	+13	1,000,000	550,245,000	+9
1895.....	248,033,000	+33	393,658,000	+9	1,000,000	642,691,000	+17
1896.....	252,075,000	+2	387,966,000	-1	1,000,000	641,041,000	-3
1897.....	269,934,000	+7	380,678,000	-2	1,000,000	651,612,000	+2
1898.....	308,247,000	+14	417,795,000	+10	1,000,000	727,042,000	+12
1899.....	483,521,000	+57	525,575,000	+26	1,000,000	1,010,096,000	+39
1900.....	513,732,000	+6	594,204,000	+13	1,000,000	1,108,936,000	+10
1901.....	493,314,000	-4	660,764,000	+11	1,000,000	1,155,078,000	+4
1902.....	604,517,000	+23	722,434,000	+9	1,000,000	1,327,951,000	+15
1903.....	588,753,000	-3	905,628,000	+25	1,000,000	1,495,381,000	+13
1904.....	501,114,000	-15	857,667,000	-5	400,000	1,359,181,000	-9
1905.....	702,585,000	+40	920,780,000	+7	400,000	1,623,765,000	+19
1906.....	886,180,000	+26	1,014,500,000	+10	200,000	1,900,880,000	+17
1907.....	904,108,000	+2	1,165,376,000	+15	86,000	2,069,570,000	+9
1908.....	550,768,000	-39	1,040,761,000	-11	244,000	1,591,773,000	-23
1909.....	754,944,000	+37	1,131,866,000	+9	297,000	1,887,107,000	+19
1910.....	749,879,000	-7	1,237,668,000	+9	297,000	1,987,844,000	+5
1911.....	680,907,000	-9	1,242,942,000	+4	232,000	1,924,081,000	-3
1912.....	862,008,000	+27	1,375,420,000	+11	366,000	2,237,794,000	+16
1913.....	878,869,000	+2	1,554,298,000	+13	378,000	2,433,545,000	+9
1914.....	686,639,000	-22	1,424,063,000	-8	470,000	2,111,172,000	-13
1915.....	991,730,000	+44	1,400,484,000	-2	2,430,000	2,394,644,000	+13

¹ Figures for earlier years not available.

Value of mineral products of the United States, 1880-1932—Continued

Year	Metallic		Nonmetallic		Unspeci- fied (me- tallic and nonme- tallic)	Total	
	Value	Increase or de- crease, percent	Value	Increase or de- crease, percent		Value	Increase or de- crease, percent
1916	\$1,620,745,000	+63	\$1,884,413,000	+35	\$3,281,000	\$3,508,439,000	+47
1917	2,086,234,000	+29	2,900,462,000	+54	5,800,000	4,992,496,000	+42
1918	2,153,318,000	+3	3,380,690,000	+17	6,700,000	5,540,708,000	+11
1919	1,359,744,000	-37	3,232,626,000	-4	3,400,000	4,595,770,000	-17
1920	1,762,350,000	+30	5,214,170,000	+61	4,820,000	6,981,340,000	+52
1921	654,130,000	-63	3,481,720,000	-33	2,650,000	4,138,500,000	-41
1922	987,180,000	+29	3,656,410,000	+5	3,700,000	4,647,290,000	+12
1923	1,510,930,000	+53	4,471,620,000	+22	3,950,000	5,986,500,000	+29
1924	1,232,330,000	-18	4,067,730,000	-9	5,740,000	5,305,800,000	-11
1925	1,380,280,000	+12	4,291,100,000	+5	6,250,000	5,677,630,000	+7
1926	1,402,920,000	+2	4,803,080,000	+12	7,600,000	6,213,600,000	+9
1927	1,217,700,000	-13	4,304,100,000	-10	8,200,000	5,530,000,000	-11
1928	1,284,680,000	+5	4,091,620,000	-5	9,000,000	5,385,200,000	-3
1929	1,475,990,000	+15	4,401,180,000	+8	10,430,000	5,887,600,000	+9
1930	982,550,000	-33	3,773,400,000	-14	8,850,000	4,764,800,000	-19
1931	567,200,000	-42	2,592,100,000	-31	7,300,000	3,166,600,000	-34
1932	283,700,000	-50	2,171,300,000	-16	6,000,000	2,461,000,000	-22
Grand total.	38,232,390,000		86,190,162,000		162,437,000	124,584,989,000	

Value of mineral products of the United States, 1928-32, by States¹

State	1928	1929	1930	1931	1932
Alabama	\$69,807,334	\$65,402,354	\$55,461,985	\$38,506,558	\$19,170,152
Alaska	14,024,489	15,946,830	13,707,235	12,371,057	11,526,387
Arizona	115,999,643	157,959,792	82,933,802	41,602,929	15,203,724
Arkansas	45,009,780	41,324,576	34,901,476	18,692,379	15,540,325
California	434,261,175	555,001,213	479,049,507	304,538,557	286,629,150
Colorado	58,594,688	55,331,911	46,270,545	32,970,230	25,800,227
Connecticut	7,599,655	7,053,468	5,485,120	4,299,790	1,910,803
Delaware	481,584	467,493	424,901	394,579	300,426
District of Columbia	1,031,216	1,064,946	1,288,344	281,980	1,819,017
Florida	15,227,123	14,803,606	15,484,206	10,850,806	7,107,866
Georgia	14,740,431	15,294,103	12,830,845	10,290,593	6,292,609
Idaho	28,589,221	32,142,685	22,903,659	13,177,427	9,477,884
Illinois	188,098,866	182,791,131	148,311,418	108,065,936	71,692,511
Indiana	98,583,915	96,961,947	79,226,808	50,852,088	34,602,723
Iowa	35,498,669	35,954,895	33,357,958	21,614,611	18,522,625
Kansas	113,279,524	124,472,480	100,253,311	56,804,312	58,471,164
Kentucky	131,969,907	132,649,508	111,691,254	74,868,106	59,076,459
Louisiana	56,810,403	62,725,997	71,923,038	61,692,302	60,920,829
Maine	5,922,729	6,748,799	6,227,528	4,889,282	3,174,278
Maryland	18,417,781	18,469,568	14,989,695	11,330,323	7,233,821
Massachusetts	16,234,037	16,030,807	12,722,974	11,170,497	8,038,615
Michigan	123,825,527	151,975,563	111,405,530	62,785,908	34,713,951
Minnesota	108,274,963	136,349,610	103,981,377	55,275,230	12,272,622
Mississippi	2,634,347	2,572,616	1,774,621	2,387,771	2,718,919
Missouri	74,981,382	78,948,484	69,074,500	41,805,772	29,245,055
Montana	74,752,309	93,842,135	50,995,123	32,359,904	19,016,566
Nebraska	3,454,700	4,844,542	4,962,012	3,623,426	1,548,486
Nevada	34,881,787	36,775,743	24,075,375	14,963,785	6,568,283
New Hampshire	3,816,065	3,725,951	3,337,169	2,796,132	1,351,554
New Jersey	70,865,363	71,891,861	57,206,357	41,632,683	23,073,173
New Mexico	30,426,840	37,127,621	31,850,263	25,349,712	20,263,883
New York	108,025,720	109,361,349	99,622,368	78,007,467	49,881,167
North Carolina	11,480,406	10,963,896	7,462,450	5,554,190	2,466,311
North Dakota	3,082,621	3,465,563	3,056,493	2,271,454	2,385,735
Ohio	211,041,279	220,061,343	186,971,555	130,927,783	87,996,538
Oklahoma	486,634,347	516,685,232	390,170,991	181,904,857	185,120,909
Oregon	6,686,988	6,876,703	6,169,895	5,045,307	2,989,383
Pennsylvania	881,490,033	892,913,833	778,523,421	594,642,786	424,734,073
Rhode Island	830,742	939,602	1,209,227	792,911	506,325
South Carolina	4,045,849	3,592,112	3,341,051	3,031,459	950,693
South Dakota	9,443,488	8,914,344	11,075,808	11,338,739	11,118,029
Tennessee	39,216,757	40,719,706	32,499,380	24,461,447	14,561,792
Texas	378,616,955	495,819,500	450,373,151	302,201,046	389,963,183
Utah	97,381,148	115,131,131	64,224,307	40,301,788	22,620,230
Vermont	14,648,737	14,602,589	11,637,393	8,421,911	6,401,143
Virginia	38,770,281	39,752,683	34,602,749	26,150,041	16,927,446
Washington	22,119,541	22,435,359	20,075,844	14,800,608	12,816,678
West Virginia	336,638,948	346,564,746	290,118,914	221,734,789	156,643,214
Wisconsin	20,938,179	24,222,229	17,711,394	11,843,343	7,414,456
Wyoming	52,950,875	51,237,407	46,735,184	30,892,663	27,343,288

¹ In this table iron ore, not pig iron, is taken as the basis of valuation of iron, and in the case of other metals mine production (recoverable content of metals) is the basis.

Mineral products of the United States and principal producing States in 1932

Rank in value	Product	Principal producing States ¹	
		In order of quantity	In order of value
13	Aluminum	New York, Tennessee, North Carolina	Rank same as for quantity.
(9)	Antimonial lead	Not separable by States.	Not separable by States.
75	Antimony ore	Idaho, Nevada	Rank same as for quantity.
43	Arsenious oxide	Montana, Utah	Do.
66	Asbestos	Vermont, Georgia, Arizona, Maryland	Vermont, Arizona, Georgia, Maryland.
	Asphalt:		
34	Native	Texas, Kentucky, Alabama, Utah	Kentucky, Utah, Texas, Alabama.
17	Oil	Not separable by States.	Not separable by States.
41	Barite (crude)	Missouri, Georgia, California, Virginia	Rank same as for quantity.
47	Bauxite	Arkansas, Alabama, Georgia	Do.
55	Bismuth	Not separable by States.	Not separable by States.
31	Borates	California	Rank same as for quantity.
29	Briquets, fuel	Wisconsin, Pennsylvania, West Virginia, Oregon	Wisconsin, Oregon, Pennsylvania, Massachusetts.
37	Bromine	Michigan, California, West Virginia, Ohio	Rank same as for quantity.
46	Cadmium (metal and compounds)	Not separable by States.	Not separable by States.
39	Calcium-magnesium chloride	Michigan, California, Oklahoma, West Virginia	Michigan, Oklahoma, California, West Virginia.
8	Cement	Pennsylvania, New York, Illinois, California	Pennsylvania, California, New York, Texas.
57	Chats	Missouri, Kansas, Oklahoma	Rank same as for quantity.
84	Chromite	California	Do.
7	Clay products		Ohio, Pennsylvania, West Virginia, New Jersey.
26	Clay, raw	Georgia, Pennsylvania, Ohio, Missouri	Georgia, Pennsylvania, Missouri, South Carolina.
2	Coal:		
	Bituminous	West Virginia, Pennsylvania, Kentucky, Illinois	Pennsylvania, West Virginia, Illinois, Kentucky.
	Pennsylvania anthracite	Pennsylvania	Rank same as for quantity.
5	Coke	Pennsylvania, New York, Ohio, Michigan	New York, Pennsylvania, Ohio, Michigan.
85	Columbite	North Carolina, New Mexico	Rank same as for quantity.
12	Copper	Arizona, Montana, Utah, Michigan	Do.
36	Diatomite and tripoli	California, Illinois, Missouri, Oklahoma	California, Missouri, Illinois, Oklahoma.
81	Emery	New York	Rank same as for quantity.
48	Feldspar (crude)	North Carolina, New Hampshire, Maine, Virginia	North Carolina, New Hampshire, Maine, New York.
18	Ferro-alloys	Pennsylvania, New York, Ohio, Iowa	Pennsylvania, New York, Ohio, West Virginia.
76	Flint lining for tube mills	Minnesota	Rank same as for quantity.
52	Fluorspar	Kentucky, Illinois, New Mexico, Colorado	Do.
32	Fuller's earth	Georgia, Florida, Texas, Illinois	Do.
64	Garnet, abrasive	New York, New Hampshire	Do.
(3)	Gems and precious stones	No canvass for 1932.	No canvass for 1932.
10	Gold	California, Alaska, South Dakota, Colorado	Rank same as for quantity.
83	Graphite ¹	Nevada	Do.
59	Grindstones and pulpstones	Ohio, West Virginia, Illinois, Michigan	Ohio, West Virginia, Michigan, Washington.
19	Gypsum	New York, Michigan, Iowa, Texas	New York, Michigan, Iowa, Ohio.
56	Iodine (natural)	California, Louisiana	Rank same as for quantity.

Footnotes at end of table.

Mineral products of the United States and principal producing States in 1932—Continued

Rank in value	Product	Principal producing States ¹	
		In order of quantity	In order of value
20	Iron ore.....	Minnesota, Alabama, Michigan, Wisconsin	Minnesota, Michigan, Alabama, Wisconsin.
4	Iron, pig.....	Ohio, Pennsylvania, Alabama, Illinois	Ohio, Pennsylvania, Illinois, Indiana.
16	Lead.....	Missouri, Idaho, Utah, Oklahoma	Rank same as for quantity.
22	Lime.....	Ohio, Pennsylvania, Missouri, Tennessee	Ohio, Pennsylvania, Missouri, Massachusetts.
78	Lithium minerals.....	New Mexico, South Dakota	Rank same as for quantity.
58	Magnesite.....	Washington, California	Do.
61	Magnesium.....	Michigan	Do.
40	Magnesium salts (natural).....	Michigan, California, Washington	Do.
54	Manganese ore.....	Montana, Arkansas, Virginia, Alabama	Do.
67	Manganiferous ore.....	Georgia, Michigan, Alabama, Minnesota	Do.
73	Manganiferous zinc residuum.....	New Jersey	Do.
	Marl:		
74	Calcareous.....	West Virginia, Ohio, Virginia, Nevada	West Virginia, Ohio, Nevada, Virginia.
63	Greensand.....	New Jersey	Rank same as for quantity.
42	Mercury.....	California, Texas, Oregon, Nevada	Do.
65	Mica.....	North Carolina, Virginia, New Mexico, New Hampshire	North Carolina, New Hampshire, Virginia, Connecticut.
	Scrap.....	do	Rank same as for quantity.
	Sheet.....	New Hampshire, North Carolina, Connecticut, Virginia	North Carolina, New Hampshire, Connecticut, Virginia.
72	Micaceous minerals.....	Montana, North Carolina, Georgia, Vermont	Georgia, Montana, North Carolina, Vermont.
79	Millstones.....		New York, North Carolina, Virginia.
23	Mineral paints, zinc and lead pigments.....	Pennsylvania, Ohio, Indiana, Illinois	Rank same as for quantity.
(9)	Mineral waters.....	No canvass for 1932	No canvass for 1932.
36	Molybdenum.....	Colorado, New Mexico, Arizona	Rank same as for quantity.
3	Natural gas.....	Texas, California, Oklahoma, Louisiana	Texas, California, West Virginia, Louisiana.
11	Natural gasoline.....	California, Oklahoma, Texas, Louisiana	California, Oklahoma, Texas, Wyoming.
68	Nickel.....	Not separable by States	Not separable by States.
70	Oilstones, etc.....	Ohio, Vermont, Indiana, Arkansas	Arkansas, Ohio, Vermont, Indiana.
(9)	Peat.....	No canvass for 1932	No canvass for 1932.
80	Pebbles for grinding.....	Minnesota, California	Rank same as for quantity.
1	Petroleum.....	Texas, California, Oklahoma, Kansas	Do.
25	Phosphate rock.....	Florida, Tennessee, Idaho, Montana	Do.
44	Platinum and allied metals.....	California, Oregon, Alaska	Do.
33	Potassium salts.....	California, New Mexico, Maryland	Do.
60	Pumice.....	Kansas, California, Nebraska, Oklahoma	Do.
49	Pyrites.....	Tennessee, Virginia, New York, California	Tennessee, Virginia, California, New York.
15	Salt.....	Michigan, New York, Ohio, Kansas	Michigan, New York, Kansas, Ohio.
9	Sand and gravel.....	New York, Indiana, Illinois, California	New York, Pennsylvania, California, Ohio.
51	Sand-lime brick.....	Massachusetts, New York, Michigan, Minnesota	Massachusetts, New York, Michigan, Wisconsin.
53	Selenium.....	Not separable by States	Not separable by States.
71	Silica (quartz).....	Ohio, Wisconsin, North Carolina, New York	Wisconsin, North Carolina, Ohio, Maryland.
45	Silica sand and sandstone (finely ground).....	New Jersey, Illinois, Pennsylvania, Ohio	Pennsylvania, New Jersey, Illinois, Ohio.
24	Silver.....	Utah, Idaho, Arizona, Colorado	Rank same as for quantity.
30	Slate.....		Pennsylvania, Vermont, New York, Virginia.

27	Sodium salts (other than NaCl) from natural sources.	California, Arizona, Nevada, Wyoming.....	Rank same as for quantity.
6	Stone.....	Pennsylvania, New York, Ohio, California.....	New York, Pennsylvania, Indiana, Ohio.
14	Sulphur.....	Texas, California.....	Rank same as for quantity.
28	Sulphuric acid from copper and zinc smelters.	Tennessee, Illinois, Pennsylvania, Oklahoma.....	Do.
35	Talc and ground soapstone ⁵	New York, Vermont, North Carolina, California.....	Do.
82	Tellurium.....	Not separable by States.....	Not separable by States.
86	Tin.....	South Dakota.....	Rank same as for quantity.
	Titanium ore:		
77	Ilmenite.....	Virginia.....	Do.
69	Rutile.....	do.....	Do.
62	Tungsten ore.....	Nevada, Arizona, California, Washington.....	Do.
50	Uranium and vanadium ores.....	Colorado, Arizona, Utah.....	Colorado, Utah, Arizona.
21	Zinc.....	New Jersey, Oklahoma, Utah, Kansas.....	Rank same as for quantity.

¹ Rank of States in metal production (except aluminum, ferro-alloys, and pig iron) arranged according to mine reports, not smelter output.

² Separate figures for antimonial lead from primary sources not available.

³ No canvass for 1932.

⁴ Amorphous only. No crystalline produced in 1932.

⁵ Exclusive of soapstone used as dimension stone (all from Virginia), which is included in 1932 for the first time in figures for stone.

STATE TABLES

Mineral production of Alabama, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Asphalt (native).....short tons..	(1)	(1)	(1)	(1)
Bauxite.....long tons..	(1)	(1)	(1)	(1)
Cement.....barrels..	² 4,476,400	² \$5,283,085	² 1,591,166	² \$1,807,088
Clay products.....		³ 1,441,845		³ 532,287
Clay, raw.....short tons..	64,649	⁴ 84,480	33,748	⁴ 47,179
Coal.....do.....	11,998,781	21,866,000	7,856,939	12,138,000
Cobalt ore.....do.....	(1)	(1)	(1)	(1)
Coke.....do.....	2,943,143	⁴ 8,023,595	1,400,597	⁴ 3,770,988
Ferro-alloys.....long tons..	(1 ⁴)	(1 ⁴)	(1 ⁴)	(1 ⁴)
Fuller's earth.....short tons..			32	288
Gold.....troy ounces..	20	407	69	1,423
Graphite, crystalline.....pounds..	(1)	(1)		
Iron ore.....long tons..	3,620,997	6,155,995	1,470,445	2,428,227
Iron, pig.....do.....	1,617,331	⁴ 20,024,541	733,774	⁴ 8,076,727
Lime.....short tons..	137,423	823,437	92,359	492,243
Manganese ore.....long tons..			267	2,834
Manganiferous ore.....do.....	1,321	5,848	4,545	16,899
Mica, sheet.....pounds..	(1)	(1)		
Mineral waters.....gallons sold..	(5)	(5)	(5)	(5)
Ore (dry and siliceous) (gold and silver).....short tons..			800	(5)
Sand and gravel.....do.....	1,327,686	720,143	588,209	246,317
Silver.....troy ounces..	3	1	10	3
Stone.....short tons..	⁷ 546,810	⁷ 1,671,539	⁷ 269,570	⁷ 1,141,476
Miscellaneous ⁸.....do.....		2,240,634		616,236
Total value, eliminating duplications.....		38,506,558		19,170,152

- ¹ Value included under "Miscellaneous."
- ² Exclusive of puzzolan, value for which is included under "Miscellaneous."
- ³ Figures obtained through cooperation with Bureau of the Census.
- ⁴ Value not included in total value for State.
- ⁵ No canvass.
- ⁶ Not valued as ore; value of recoverable metal content included under the metals.
- ⁷ Exclusive of sandstone, value for which is included under "Miscellaneous."
- ⁸ Includes minerals indicated by "1," "2," and "7" above.

Mineral production of Alaska, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Arsenic.....short tons..	(1)	(1)	(1)	(1)
Coal.....do.....	105,900	\$558,000	102,700	\$514,000
Copper.....pounds..	22,614,000	2,057,874	8,738,500	550,526
Gold.....troy ounces..	459,901	9,507,000	493,860	10,209,000
Lead.....short tons..	1,661	122,877	1,261	75,639
Mercury.....flasks (76 pounds)..	(2)	(2)	(2)	(2)
Natural gas.....M cubic feet..	(2)	(2)	(2)	(2)
Natural gasoline.....gallons..	32,000	5,000	25,000	4,000
Ores (crude), etc.:				
Copper.....short tons..	89,818	(3)	56,800	(3)
Dry and siliceous (gold and silver).....do.....	4,195,000	(3)	4,068,000	(3)
Petroleum.....barrels..	(2)	(2)	(2)	(2)
Platinum and allied metals.....troy ounces..	39	1,716	23	948
Silver.....do.....	352,000	102,080	234,050	66,002
Stone.....short tons..			(2)	(2)
Tin (metallic equivalent).....do.....	4	2,000		
Miscellaneous ⁴.....do.....		16,510		106,272
Total value, eliminating duplications.....		12,371,057		11,526,387

- ¹ Figures not available.
- ² Value included under "Miscellaneous."
- ³ Not valued as ore; value of recoverable metal content included under the metals.
- ⁴ Includes minerals indicated by "2" above.

SUMMARY OF MINERAL PRODUCTION

States and their principal mineral products in 1932¹

State	Rank	Percent of total value for United States	Principal mineral products in order of value
Alabama	20	0.84	Coal, iron ore, cement, stone.
Alaska	29	.50	Gold, copper, coal, stone.
Arizona	25	.66	Copper, gold, sand and gravel, silver.
Arkansas	24	.68	Petroleum, coal, natural gas, cement.
California	3	12.48	Petroleum, natural gas, natural gasoline, gold.
Colorado	16	1.12	Coal, gold, clay products, molybdenum.
Connecticut	44	.08	Stone, clay products, sand and gravel, lime.
Delaware	50	.01	Clay products, stone, sand and gravel, silica sand and sandstone (finely ground).
District of Columbia	45	.08	Sand and gravel, clay products, sand-lime brick, stone.
Florida	35	.31	Phosphate rock, stone, fuller's earth, cement.
Georgia	38	.27	Stone, clay products, fuller's earth, cement.
Idaho	31	.41	Lead, silver, gold, sand and gravel.
Illinois	7	3.12	Coal, petroleum, clay products, cement.
Indiana	13	1.51	Coal, stone, cement, sand and gravel.
Iowa	22	.81	Coal, cement, sand and gravel, gypsum.
Kansas	10	2.55	Petroleum, natural gas, coal, salt.
Kentucky	9	2.57	Coal, natural gas, petroleum, stone.
Louisiana	8	2.65	Natural gas, petroleum, salt, natural gasoline.
Maine	39	.14	Stone, cement, sand and gravel, clay products.
Maryland	34	.32	Coal, stone, cement, sand and gravel.
Massachusetts	32	.35	Stone, sand and gravel, clay products, lime.
Michigan	12	1.51	Petroleum, salt, cement, copper.
Minnesota	28	.54	Iron ore, sand and gravel, stone, cement.
Mississippi	41	.12	Natural gas, sand and gravel, clay products, stone.
Missouri	14	1.27	Lead, coal, stone, cement.
Montana	21	.83	Copper, natural gas, coal, petroleum.
Nebraska	46	.07	Cement, sand and gravel, stone, clay products.
Nevada	36	.29	Gold, copper, gypsum, sand and gravel.
New Hampshire	47	.06	Stone, sand and gravel, clay products, feldspar.
New Jersey	17	1.01	Clay products, zinc, sand and gravel, stone.
New Mexico	19	.88	Petroleum, coal, natural gas, copper.
New York	11	2.17	Stone, petroleum, cement, natural gas.
North Carolina	42	.11	Stone, clay products, feldspar, copper.
North Dakota	43	.10	Coal, sand and gravel, clay products.
Ohio	6	3.83	Natural gas, clay products, coal, petroleum.
Oklahoma	4	8.06	Petroleum, natural gas, natural gasoline, zinc.
Oregon	40	.13	Sand and gravel, stone, cement, gold.
Pennsylvania	1	18.50	Coal, natural gas, petroleum, cement.
Rhode Island	49	.02	Stone, sand and gravel, clay products, lime.
South Carolina	48	.04	Stone, clay products, sand and gravel, barite
South Dakota	30	.48	Gold, stone, cement, sand and gravel.
Tennessee	26	.64	Coal, stone, cement, clay products.
Texas	2	16.98	Petroleum, natural gas, sulphur, natural gasoline.
Utah	18	.99	Coal, copper, lead, gold.
Vermont	37	.28	Stone, slate, talc, lime.
Virginia	23	.74	Coal, stone, cement, clay products.
Washington	27	.56	Coal, cement, stone, sand and gravel.
West Virginia	5	6.82	Coal, natural gas, clay products, petroleum.
Wisconsin	33	.32	Stone, clay products, sand and gravel, iron ore.
Wyoming	15	1.19	Petroleum, coal, natural gas, natural gasoline.

¹ In this table iron ore, not pig iron, is taken as the basis of iron valuation, and in the case of other metals mine production (recoverable content of metals) is the basis.

Prices of silver, copper, lead, and zinc, 1928-32

Year	Silver ¹	Copper ²	Lead ²	Zinc ²	Year	Silver ¹	Copper ²	Lead ²	Zinc ²
	<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>		<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>
1928	\$0.585	\$0.144	\$0.058	\$0.061	1931	\$0.290	\$0.091	\$0.037	\$0.038
1929	.533	.176	.063	.066	1932	.282	.063	.030	.030
1930	.385	.130	.050	.048					

¹ Average price furnished by Bureau of the Mint.

² Average price, all grades.

A12 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Mineral production of Arizona, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Asbestos..... short tons.....	(1)	(1)	(1)	(1)
Barite..... do.....	2, 139	\$14, 275	1, 271	\$8, 896
Clay products.....		² 154, 479		(1) ³
Clay, raw..... short tons.....	(1) ³	(1) ³	6, 096	³ 22, 000
Coal..... do.....	7, 120	42, 000	6, 877	33, 000
Copper..... pounds.....	401, 344, 909	36, 522, 387	182, 491, 825	11, 496, 985
Feldspar (crude)..... long tons.....	(1)	(1)	1, 232	4, 496
Gems and precious stones.....	(4)	(4)	(4)	(4)
Gold..... troy ounces.....	126, 186	2, 608, 495	66, 790	1, 380, 665
Gypsum..... short tons.....	(1)	(1)	(1)	(1)
Lead..... do.....	982	72, 672	1, 182	70, 929
Lime..... do.....	22, 567	222, 785	11, 061	119, 138
Manganese ore..... long tons.....	40	600		
Mercury..... flasks (76 pounds).....	(1)	(1)	(1)	(1)
Molybdenum..... pounds.....	(1)	(1)	(1)	(1)
Ores (crude), etc.:				
Copper..... short tons.....	13, 606, 755	(9)	4, 343, 070	(9)
Copper-lead..... do.....	218	(9)	18	(9)
Dry and siliceous (gold and silver)..... do.....	69, 686	(9)	60, 129	(9)
Lead..... do.....	13, 951	(9)	11, 362	(9)
Pumice..... do.....	50	500		
Sand and gravel..... do.....	388, 697	312, 128	1, 448, 501	1, 092, 757
Silica (quartz)..... do.....	(1)	(1)	(1)	(1)
Silver..... troy ounces.....	3, 245, 311	941, 140	2, 082, 823	587, 356
Sodium sulphate from natural sources..... short tons.....	(1)	(1)	(1)	(1)
Stone..... do.....	467, 950	358, 419	199, 410	145, 897
Tungsten ore (60 percent concentrates)..... do.....	(1) ³	(1) ³	(1) ³	(1) ³
Tungsten ore..... do.....	98	62, 166	62	35, 281
Vanadium ore..... do.....			3, 250	(1)
Miscellaneous ⁷ do.....		497, 609		276, 255
Total value, eliminating duplications.....		41, 602, 929		15, 203, 724

¹ Value included under "Miscellaneous."

² Figures obtained through cooperation with Bureau of the Census.

³ Value not included in total value for State.

⁴ No canvass.

⁵ Not valued as ore; value of recoverable metal content included under the metals.

⁶ From copper smelting.

⁷ Includes minerals indicated by "1" above.

Mineral production of Arkansas, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Bauxite..... long tons.....	186, 697	\$1, 081, 450	89, 779	\$507, 697
Cement..... barrels.....	(1)	(1)	(1)	(1)
Clay products.....		² 494, 494		² 211, 685
Clay, raw..... short tons.....	319	³ 1, 116	(1) ³	(1) ³
Coal..... do.....	1, 153, 555	3, 511, 000	1, 033, 471	2, 831, 000
Gems and precious stones.....	(4)	(4)	(4)	(4)
Iron ore sold for magnets..... long tons.....	6	(1)	2	(1)
Lead..... short tons.....	78	5, 772	4	240
Lime..... do.....	22, 520	153, 733	(1)	(1)
Manganese ore..... long tons.....	4, 028	80, 915	1, 306	(1)
Manganiferous ore..... do.....	2, 230	(1)	208	(1)
Mercury..... flasks (76 pounds).....	(1)	(1)	(1)	(1)
Mineral waters..... gallons sold.....	(4)	(4)	(4)	(4)
Natural gas..... M cubic feet.....	13, 300, 000	2, 696, 000	10, 235, 000	2, 242, 000
Natural gasoline..... gallons.....	26, 282, 000	921, 000	18, 653, 000	557, 000
Oilstones..... short tons.....	59	38, 379	40	25, 129
Ores (lead and zinc)..... do.....	(9)	(9)	(9)	(9)
Petroleum..... barrels.....	14, 791, 000	7, 200, 000	12, 051, 000	7, 690, 000
Sand and gravel..... short tons.....	1, 555, 235	1, 044, 276	464, 560	273, 013
Slate..... do.....				(1)
Stone..... short tons.....	390, 710	410, 091	⁶ 48, 530	⁶ 82, 177
Tripoli..... do.....	(1)	(1)	1, 055	22, 397
Miscellaneous ⁷ do.....		1, 055, 269		1, 098, 387
Total value, eliminating duplications.....		18, 692, 379		15, 540, 325

¹ Value included under "Miscellaneous."

² Figures obtained through cooperation with Bureau of the Census.

³ Value not included in total value for State.

⁴ No canvass.

⁵ Figures not available.

⁶ Exclusive of unclassified stone, value for which is included under "Miscellaneous."

⁷ Includes minerals indicated by "1" and "6" above.

SUMMARY OF MINERAL PRODUCTION

A13

Mineral production of California, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Asphalt (native).....short tons.....	(1)	(1)	(1)	(1)
Barite.....do.....	17, 500	\$102, 085	7, 789	\$55, 346
Borates.....do.....	178, 550	4, 931, 295	181, 915	3, 023, 844
Briquets, fuel.....do.....	(1) ²	(1) ²	(1) ²	(1) ²
Bromine.....pounds.....	(1)	(1)	(1)	(1)
Calcium chloride.....short tons.....	(1)	(1)	(1)	(1)
Cement.....barrels.....	7, 496, 080	11, 557, 442	5, 729, 705	8, 455, 537
Chromite.....long tons.....	268	3, 509	155	2, 160
Clay products.....		\$ 10, 334, 517		\$ 5, 469, 905
Clay, raw.....short tons.....	281, 006	2, 680, 749	117, 461	2, 272, 059
Coal.....do.....	12, 685	73, 000	(1)	(1)
Copper.....pounds.....	12, 931, 995	1, 176, 812	1, 417, 876	89, 326
Diatomite.....short tons.....	(1)	(1)	(1)	(1)
Feldspar (crude).....long tons.....	4, 465	30, 857	(1)	(1)
Fuller's earth.....short tons.....	(1)	(1)	100	2, 250
Gems and precious stones.....	(1)	(1)	(1)	(1)
Gold.....troy ounces.....	523, 135	10, 814, 162	569, 167	11, 765, 726
Gypsum.....short tons.....	90, 899	472, 015	49, 997	(1)
Iodine.....pounds.....	(1)	(1)	(1)	(1)
Lead.....short tons.....	1, 879	139, 018	1, 209	72, 522
Lime.....do.....	41, 371	389, 696	29, 925	284, 467
Magnesite.....do.....	(1)	(1)	(1)	(1)
Magnesium salts (natural).....pounds.....	(1)	(1)	(1)	(1)
Manganese ore.....long tons.....	40	(1)	(1)	(1)
Marl, calcareous.....short tons.....	3, 780	16, 734	(1)	(1)
Mercury.....flasks (76 pounds).....	13, 448	1, 174, 696	5, 172	299, 588
Mineral waters.....gallons sold.....	(1)	(1)	(1)	(1)
Natural gas.....M cubic feet.....	305, 930, 000	76, 345, 000	263, 484, 000	73, 172, 000
Natural gasoline.....gallons.....	680, 339, 000	29, 505, 000	551, 897, 000	25, 085, 000
Ores (crude), etc.:				
Copper.....short tons.....	473, 389	(1)	78, 031	(1)
Copper-lead-zinc.....do.....	9, 911	(1)	(1)	(1)
Dry and siliceous (gold and silver).....do.....	1, 008, 411	(1)	978, 218	(1)
Lead.....do.....	5, 536	(1)	4, 112	(1)
Peat.....do.....	(1)	(1)	(1)	(1)
Pebbles for grinding.....do.....	21	171	4	40
Petroleum.....barrels.....	188, 830, 000	135, 960, 000	178, 128, 000	144, 600, 000
Platinum and allied metals.....troy ounces.....	213	9, 521	240	9, 960
Potassium salts.....short tons.....	(1)	(1)	(1)	(1)
Pumice.....do.....	(1)	(1)	(1)	(1)
Pyrites.....long tons.....	11, 344	108, 543	7, 459	66, 730
Salt.....short tons.....	334, 900	2, 000, 567	281, 349	1, 824, 021
Sand and gravel.....do.....	9, 673, 523	6, 222, 779	6, 593, 404	3, 692, 733
Sand and sandstone (finely ground).....do.....	(1)	(1)	(1)	(1)
Silica (quartz).....do.....	1, 553	16, 654	253	4, 897
Silver.....troy ounces.....	867, 818	251, 667	493, 533	139, 176
Slate.....do.....		45, 661		27, 542
Sodium salts (carbonate, bicarbonate, and trona) from natural sources.....short tons.....	78, 530	1, 223, 544	55, 377	888, 052
Stone.....do.....	5, 751, 820	6, 482, 202	3, 807, 080	3, 925, 122
Sulphur.....long tons.....			740	12, 920
Talc.....short tons.....	11, 605	180, 582	9, 979	139, 322
Tungsten ore (60 percent concentrates).....do.....	(1)	(1)	(1)	(1)
Zinc.....do.....	80	8, 075		
Miscellaneous ⁶.....do.....		5, 081, 231		3, 519, 968
Total value, eliminating duplications.....		304, 538, 557		286, 629, 150

¹ Value included under "Miscellaneous."

² Value not included in total value for State.

³ Figures obtained through cooperation with Bureau of the Census.

⁴ No canvass.

⁵ Not valued as ore; value of recoverable metal content included under the metals.

⁶ Includes minerals indicated by "1" above.

Mineral production of Colorado, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Briquets, fuel..... short tons.....	(1) ¹	(1) ²	(1) ³	(1) ³
Cement..... barrels.....	(1)	(1)	(1)	(1)
Clay products.....		\$1,804,526		\$1,142,499
Clay, raw..... short tons.....	65,268	² 84,159	41,529	² 49,617
Coal..... do.....	6,604,369	15,944,000	5,598,721	12,237,000
Coke..... do.....	(1) ³	(1) ³	115,944	(1) ³
Copper..... pounds.....	8,165,000	743,015	7,398,000	466,074
Feldspar (crude)..... long tons.....	2,953	14,927	5,612	20,304
Ferro-alloys..... do.....	(1) ³	(1) ³	(1) ³	(1) ³
Fluorspar..... short tons.....	529	5,921	333	3,330
Fuller's earth..... do.....	(1)	(1)	(1)	(1)
Gems and precious stones.....	(1)	(1)	(1)	(1)
Gold..... troy ounces.....	233,300	4,822,734	317,928	6,572,154
Gypsum..... short tons.....	(1)	(1)	(1)	(1)
Iron ore..... long tons.....	26,202	(1)		
Iron, pig..... do.....	(1) ³	(1) ³	(1) ³	(1) ³
Lead..... short tons.....	6,884	509,416	2,150	128,970
Lime..... do.....	4,646	50,823	(1)	(1)
Manganiferous ore..... long tons.....	3,685	21,880		
Mica, scrap..... short tons.....	113	1,395	108	1,028
Micaceous minerals (vermiculite)..... do.....	(1)	(1)		
Mineral paints, zinc and lead pigments..... do.....	(1) ³	(1) ³	(1) ³	(1) ³
Mineral waters..... gallons sold.....	(4)	(4)	(4)	(4)
Molybdenum..... pounds.....	2,644,399	(1)	(1)	(1)
Natural gas..... M cubic feet.....	2,536,000	940,000	2,547,000	757,000
Natural gasoline..... gallons.....	659,000	21,000	472,000	11,000
Ores (crude), etc.:				
Copper..... short tons.....	57,232	(5)	49,404	(5)
Copper-lead..... do.....	144	(5)	25	(5)
Dry and siliceous (gold and silver)..... do.....	811,619	(5)	885,087	(5)
Lead..... do.....	5,410	(5)	837	(5)
Lead-zinc..... do.....	162,157	(5)		
Zinc..... do.....			542	(5)
Petroleum..... barrels.....	1,545,000	825,000	1,136,000	880,000
Pyrites..... long tons.....			1,496	2,073
Sand and gravel..... short tons.....	893,033	567,222	850,966	497,595
Silver..... troy ounces.....	2,195,914	636,815	1,860,408	524,635
Stone..... short tons.....	⁶ 343,520	⁶ 565,443	133,300	248,789
Sulphur ore..... long tons.....	(1)	(1)	27	675
Tungsten ore (60 percent concentrates)..... short tons.....	98	73,563		
Uranium and vanadium ores..... do.....	(1)	(1)	(1)	(1)
Zinc..... do.....	16,187	1,230,174	109	6,540
Miscellaneous ⁷		8,420,589		4,196,539
Total value, eliminating duplications.....		32,970,230		25,800,227

- ¹ Value included under "Miscellaneous."
- ² Value not included in total value for State.
- ³ Figures obtained through cooperation with Bureau of the Census.
- ⁴ No canvass.
- ⁵ Not valued as ore; value of recoverable metal content included under the metals.
- ⁶ Exclusive of marble, value for which is included under "Miscellaneous."
- ⁷ Includes minerals indicated by "1" and "6" above.

Mineral production of Connecticut, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Clay products.....		\$1,271,557		\$504,852
Clay, raw..... short tons.....	438	² 875	53	² 954
Coke..... do.....	(2 3)	(2 3)	(2 3)	(2 3)
Feldspar (crude)..... long tons.....	(3)	(3)	(3)	(3)
Lime..... short tons.....	(3)	(3)	(3)	(3)
Mica:				
Scrap..... do.....	296	5,344	93	1,394
Sheet..... pounds.....	114,318	21,559	49,920	7,731
Mineral waters..... gallons sold.....	(4)	(4)	(4)	(4)
Sand and gravel..... short tons.....	569,136	387,414	323,803	178,406
Stone..... do.....	1,986,500	2,463,145	⁵ 1,144,720	⁵ 1,142,050
Miscellaneous ⁶		3,180,630		2,477,355
Total value, eliminating duplications.....		4,299,790		1,910,803

- ¹ Figures obtained through cooperation with Bureau of the Census.
- ² Value not included in total value for State.
- ³ Value included under "Miscellaneous."
- ⁴ No canvass.
- ⁵ Exclusive of sandstone, value for which is included under "Miscellaneous."
- ⁶ Includes minerals indicated by "3" and "5" above.

Mineral production of Delaware, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Clay products.....		(1 2)		(1 2)
Clay, raw.....short tons.....	(2 3)	(2 3)	1,995	2 \$28,253
Sand and gravel.....do.....	110,678	\$64,473	73,931	38,116
Sand and sandstone (finely ground).....do.....	(2)	(2)	(2)	(2)
Stone.....do.....	(2)	(2)	(2)	(2)
Miscellaneous 4.....		370,678		262,310
Total value, eliminating duplications.....		394,579		300,426

¹ Figures obtained through cooperation with Bureau of the Census.

² Value included under "Miscellaneous."

³ Value not included in total value for State.

⁴ Includes minerals indicated by "2" above.

Mineral production of the District of Columbia, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Clay products.....		(1 2)		(1 2)
Sand and gravel.....short tons.....	(1)	(1)	(1)	(1)
Sand-lime brick.....thousands.....			(1 2)	(1 2)
Stone.....short tons.....	(1)	(1)	(1)	(1)
Miscellaneous 3.....		\$281,980		\$1,819,017
Total value, eliminating duplications.....		281,980		1,819,017

¹ Value included under "Miscellaneous."

² Figures obtained through cooperation with Bureau of the Census.

³ Includes minerals indicated by "1" above.

Mineral production of Florida, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Cement.....barrels.....	(1)	(1)	(1)	(1)
Clay products.....		2 \$38,228		2 \$21,943
Clay, raw.....short tons.....	(1 3)	(1 3)	(1 3)	(1 3)
Fuller's earth.....do.....	(1)	(1)	(1)	(1)
Lime.....do.....	(1)	(1)	10,841	99,387
Mineral waters.....gallons sold.....	(4)	(4)	(4)	(4)
Peat.....short tons.....	(4)	(4)	(4)	(4)
Phosphate rock.....long tons.....	2,061,466	7,202,086	1,469,976	4,779,612
Sand and gravel.....short tons.....	419,560	242,383	276,068	178,654
Sand-lime brick.....thousands.....	(1 2)	(1 2)	(1 2)	(1 2)
Stone.....short tons.....	1,359,460	1,219,214	1,877,880	1,701,593
Miscellaneous 6.....		2,434,244		1,459,890
Total value, eliminating duplications.....		10,850,806		7,107,866

¹ Value included under "Miscellaneous."

² Figures obtained through cooperation with Bureau of the Census.

³ Value not included in total value for State.

⁴ No canvass.

⁵ Exclusive of unclassified stone, value for which is included under "Miscellaneous."

⁶ Includes minerals indicated by "1" and "6" above.

Mineral production of Georgia, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Asbestos.....short tons.....	326	\$3,839	300	\$3,008
Barite.....do.....	(1)	(1)	(1)	(1)
Bauxite.....long tons.....	(1)	(1)	(1)	(1)
Cement.....barrels.....	(1)	(1)	(1)	(1)
Clay products.....		² 1,126,989		² 794,892
Clay, raw.....short tons.....	277,802	³ 1,656,433	234,334	³ 1,197,078
Coal.....do.....	21,580	45,000	27,208	48,000
Fuller's earth.....do.....	(1)	(1)	(1)	(1)
Gold.....troy ounces.....	88	1,827	279	5,760
Iron ore.....long tons.....	20,745	51,513	925	(1)
Lime.....short tons.....	5,139	34,339	3,567	21,176
Manganese ore.....long tons.....	6,491	(1)	200	2,400
Manganiferous ore.....do.....	11,652	(1)	9,700	(1)
Mica:				
Scrap.....short tons.....	30	253		
Sheet.....pounds.....	8,941	1,176	479	30
Micaceous minerals (chlorite schist).....short tons.....	(1)	(1)	(1)	(1)
Mineral waters.....gallons sold.....	(4)	(4)	(4)	(4)
Ore (dry and siliceous) (gold and silver).....short tons.....	300	(4)	440	(4)
Sand and gravel.....do.....	509,068	204,593	291,867	127,655
Silver.....troy ounces.....	12	3	30	9
Slate.....do.....		(1)		(1)
Stone.....short tons.....	1,516,270	6,040,740	1,094,040	3,374,555
Talc.....do.....	(1)	(1)	(1)	(1)
Miscellaneous ⁶		2,780,321		1,915,124
Total value, eliminating duplications.....		10,290,593		6,292,609

¹ Value included under "Miscellaneous."
² Figures obtained through cooperation with Bureau of the Census.
³ Value not included in total value for State.
⁴ No canvass.
⁵ Not valued as ore; value of recoverable metal content included under the metals.
⁶ Includes minerals indicated by "1" above.

Mineral production of Idaho, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Antimony ore.....short tons.....			858	(1)
Cement.....barrels.....	(1)	(1)	(1)	(1)
Clay products.....		² \$94,139		(1)
Clay, raw.....short tons.....	259	³ 3,036	456	³ \$5,401
Coal.....do.....	2,734	7,400	(1)	(1)
Copper.....pounds.....	1,144,915	104,187	1,143,381	72,033
Diatomite.....short tons.....	(1)	(1)	100	500
Fuller's earth.....do.....	(1)	(1)		
Gems and precious stones.....		(4)		(4)
Gold.....troy ounces.....	18,361	379,563	46,885	969,207
Lead.....short tons.....	99,365	7,352,981	72,118	4,327,052
Lime.....do.....	880	8,580	(1)	(1)
Manganiferous ore.....long tons.....	578	(1)		
Ores (crude), etc.:				
Copper.....short tons.....	548	(3)	12	(3)
Copper-lead.....do.....	195,643	(3)	165,490	(3)
Dry and siliceous (gold and silver).....do.....	24,371	(3)	108,122	(3)
Lead.....do.....	701,230	(3)	585,841	(3)
Lead-zinc.....do.....	378,135	(3)	173,388	(3)
Phosphate rock.....long tons.....	60,973	224,781	23,172	103,243
Sand and gravel.....short tons.....	740,189	358,046	1,307,568	651,720
Silver.....troy ounces.....	7,220,923	2,094,068	6,716,968	1,894,185
Stone.....short tons.....	884,130	841,253	⁶ 699,400	⁵ 534,990
Zinc.....do.....	19,569	1,487,214	10,252	615,127
Miscellaneous ⁷		215,210		309,827
Total value, eliminating duplications.....		13,177,427		9,477,884

¹ Value included under "Miscellaneous."
² Figures obtained through cooperation with Bureau of the Census.
³ Value not included in total value for State.
⁴ No canvass.
⁵ Not valued as ore; value of recoverable metal content included under the metals.
⁶ Exclusive of unclassified stone, value for which is included under "Miscellaneous."
⁷ Includes minerals indicated by "1" and "6" above.

SUMMARY OF MINERAL PRODUCTION

Mineral production of Illinois, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Cement.....barrels	1 6, 425, 909	\$5, 342, 446	1 5, 829, 687	\$3, 446, 482
Clay products.....		\$10, 357, 208		\$4, 571, 807
Clay, raw.....short tons	100, 028	\$200, 995	45, 747	\$113, 236
Coal.....do	44, 303, 295	75, 527, 000	33, 474, 553	51, 316, 000
Coke.....do	2, 478, 984	\$14, 042, 457	1, 428, 334	\$6, 830, 743
Fluorspar.....do	28, 072	468, 386	9, 615	156, 279
Fuller's earth.....do	(4)	(4)	(4)	(4)
Grindstones.....do	(4)	(4)	(4)	(4)
Iron, pig.....long tons	1, 727, 834	\$29, 178, 510	731, 872	\$11, 544, 298
Lead.....short tons	205	15, 170	81	1, 860
Lime.....do	96, 105	718, 952	62, 436	450, 033
Marl, calcareous.....do	(4)	(4)	(4)	(4)
Mineral paints, zinc and lead pigments.....do	10, 298	\$1, 260, 323	7, 482	\$779, 764
Mineral waters.....gallons sold	(4)	(4)	(4)	(4)
Natural gas.....M cubic feet	2, 130, 000	999, 000	1, 769, 000	1, 016, 000
Natural gasoline.....gallons	5, 024, 000	204, 000	4, 558, 000	139, 000
Ore (lead and zinc).....short tons	(4)	(4)	(4)	(4)
Peat.....do	(4)	(4)	(4)	(4)
Petroleum.....barrels	5, 039, 000	4, 500, 000	4, 673, 000	4, 720, 000
Pyrites.....long tons	(4)	(4)	(4)	(4)
Sand and gravel.....short tons	10, 297, 943	5, 209, 474	6, 751, 324	\$3, 184, 407
Sand and sandstone (finely ground).....do	34, 555	177, 146	27, 511	132, 323
Silver.....troy ounces	1, 300	377	267	72
Stone.....short tons	5, 323, 030	3, 970, 428	3, 002, 030	2, 157, 368
Sulphuric acid (60° Baumé).....do	195, 058	\$1, 712, 609	154, 394	\$1, 173, 395
Tripoli.....do	12, 631	87, 481	6, 097	84, 795
Miscellaneous ¹.....do		488, 868		316, 085
Total value, eliminating duplications.....		108, 065, 936		71, 692, 511

¹ Exclusive of natural cement, value for which is included under "Miscellaneous."

² Figures obtained through cooperation with Bureau of the Census.

³ Value not included in total value for State.

⁴ Value included under "Miscellaneous."

⁵ No canvass.

⁶ No ore milled in northern Illinois; lead output of southern Illinois is byproduct of fluorspar milling.

⁷ From zinc smelting.

⁸ Includes minerals indicated by "1" and "4" above.

Mineral production of Indiana, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Cement.....barrels	(1)	(1)	(1)	(1)
Clay products.....		\$5, 952, 237		\$2, 165, 995
Clay, raw.....short tons	197, 582	\$128, 860	83, 335	\$54, 113
Coal.....do	14, 295, 165	20, 735, 000	13, 323, 573	17, 267, 000
Coke.....do	2, 757, 135	\$16, 431, 416	1, 435, 405	\$7, 894, 902
Iron, pig.....long tons	1, 721, 925	\$28, 458, 099	713, 415	\$11, 019, 875
Lime.....short tons	81, 925	502, 232	58, 440	351, 240
Mineral paints, zinc and lead pigments.....do	(1 ³)	(1 ³)	(1 ³)	(1 ³)
Mineral waters.....gallons sold	(4)	(4)	(4)	(4)
Natural gas.....M cubic feet	1, 337, 000	699, 000	1, 349, 000	842, 000
Natural gasoline.....gallons	1, 000	(1)	1, 000	(1)
Peat.....short tons	(4)	(4)	(4)	(4)
Petroleum.....barrels	840, 000	750, 000	806, 000	828, 000
Rubbing stones and whetstones.....short tons	(1)	(1)	(1)	(1)
Sand and gravel.....do	10, 091, 450	4, 236, 521	6, 974, 375	2, 839, 622
Sand-lime brick.....thousands	(1 ²)	(1 ²)	(1 ²)	(1 ²)
Stone.....short tons	\$2, 831, 910	\$10, 257, 555	2, 472, 450	6, 987, 755
Miscellaneous ⁶.....do		9, 539, 020		4, 641, 033
Total value, eliminating duplications.....		50, 852, 088		34, 602, 723

¹ Value included under "Miscellaneous."

² Figures obtained through cooperation with Bureau of the Census.

³ Value not included in total value for State.

⁴ No canvass.

⁵ Exclusive of sandstone, value for which is included under "Miscellaneous."

⁶ Includes minerals indicated by "1" and "6" above.

118 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Mineral production of Iowa, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Briquets, fuel.....short tons	(1) ²	(1) ²		
Cement.....barrels	5,790,087	\$5,453,320	4,373,642	\$3,907,427
Clay products.....		³ 2,276,182		³ 796,445
Clay, raw.....short tons	1,271	² 13,322	3,433	² 9,354
Coal.....do	3,388,355	8,575,000	3,862,435	9,254,000
Ferro-alloys.....long tons	(1) ²	(1) ²	(1) ²	(1) ²
Gypsum.....short tons	321,627	2,588,126	178,087	1,468,414
Iron, pig.....long tons	(1) ²	(1) ²	(1) ²	(1) ²
Lime.....short tons	(1)	(1)		
Mineral waters.....gallons sold	(4)	(4)	(4)	(4)
Sand and gravel.....short tons	3,403,396	1,511,278	5,230,562	1,706,874
Stone.....do	1,271,310	1,208,755	1,591,240	1,389,465
Miscellaneous ⁵.....do		906,621		387,064
Total value, eliminating duplications.....		21,614,611		18,522,625

¹ Value included under "Miscellaneous."

² Value not included in total value for State.

³ Figures obtained through cooperation with Bureau of the Census.

⁴ No canvass.

⁵ Includes minerals indicated by "1" above.

Mineral production of Kansas, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Asphalt (native).....short tons			1,050	\$4,200
Cement.....barrels	¹ 4,478,823	¹ \$4,112,809	¹ 2,224,079	¹ 1,880,583
Chats.....short tons	50,000	10,000	139,000	27,800
Clay products.....		² 1,268,896		² 521,838
Coal.....short tons	1,986,870	3,771,000	1,952,885	3,420,000
Gypsum.....do	(3)	(3)	56,054	326,266
Lead.....do	7,082	524,068	6,490	389,400
Mineral paints, zinc and lead pigments.....do	(3 ⁴)	(3 ⁴)	(3 ⁴)	(3 ⁴)
Mineral waters.....gallons sold	(5)	(5)	(5)	(5)
Natural gas.....M cubic feet	38,742,000	11,498,000	40,690,000	13,420,000
Natural gasoline.....gallons	32,690,000	935,000	24,792,000	614,000
Ores (crude), etc.:				
Lead.....short tons	8,000	(6)	2,000	(6)
Lead-zinc.....do	1,288,200	(6)	505,100	(6)
Zinc.....do	617,000	(6)	243,400	(6)
Petroleum.....barrels	37,018,000	25,500,000	34,848,000	31,720,000
Pumice.....short tons	47,783	152,520	39,375	117,558
Salt.....do	691,160	3,003,756	688,178	2,876,239
Sand and gravel.....do	2,893,249	1,353,175	1,851,211	873,733
Stone.....do	⁷ 1,099,400	⁷ 1,035,663	⁷ 733,350	⁷ 650,843
Zinc.....do	39,051	2,967,876	26,277	1,576,620
Miscellaneous ⁸.....do		1,891,372		674,599
Total value, eliminating duplications.....		56,804,312		58,471,164

¹ Exclusive of natural cement, value for which is included under "Miscellaneous."

² Figures obtained through cooperation with Bureau of the Census.

³ Value included under "Miscellaneous."

⁴ Value not included in total value for State.

⁵ No canvass.

⁶ Not valued as ore; value of recoverable metal content included under the metals.

⁷ Exclusive of sandstone, value for which is included under "Miscellaneous."

⁸ Includes minerals indicated by "1," "3," and "7" above.

SUMMARY OF MINERAL PRODUCTION

A19

Mineral production of Kentucky, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Asphalt (native)..... short tons	161,202	\$1,197,620	91,289	\$792,643
Cement..... barrels	(1)	(1)	(1)	(1)
Clay products.....		\$ 3,025,934		\$ 1,117,093
Clay, raw..... short tons	125,330	\$ 620,450	51,004	\$ 282,027
Coal..... do	39,963,621	50,745,000	35,299,532	34,892,000
Coke..... do	(1) ³	(1) ³	(1) ³	(1) ³
Fluorspar..... do	23,462	437,642	14,725	225,052
Fluorspar, optical..... ounces	(4)	1,054	50	59
Iron, pig..... long tons	123,194	(1) ³	74,431	(1) ³
Lime..... short tons	(1)	(1)	(1)	(1)
Mineral waters..... gallons sold	(5)	(5)	(5)	(5)
Natural gas..... M cubic feet	27,870,000	10,151,000	29,005,000	13,551,000
Natural gasoline..... gallons	5,464,000	266,000	4,877,000	177,000
Ores (lead and zinc)..... short tons			(5)	(5)
Petroleum..... barrels	6,456,000	5,295,000	6,237,000	5,906,000
Sand and gravel..... short tons	1,164,748	849,004	1,064,194	547,782
Stone..... do	2,214,000	1,955,879	1,651,540	1,278,792
Zinc..... do			46	2,760
Miscellaneous ⁷ do		4,322,445		2,208,539
Total value, eliminating duplications.....		74,868,106		59,076,459

¹ Value included under "Miscellaneous."

² Figures obtained through cooperation with Bureau of the Census.

³ Value not included in total value for State.

⁴ Weight not reported.

⁵ No canvass.

⁶ Figures not available.

⁷ Includes minerals indicated by "1" above.

Mineral production of Louisiana, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Cement..... barrels	(1)	(1)	(1)	(1)
Clay products.....		\$ 262,326		\$ 118,129
Iodine..... pounds			(1)	(1)
Mineral waters..... gallons sold	(5)	(5)	(5)	(5)
Natural gas..... M cubic feet	224,155,000	37,595,500	201,561,000	36,992,000
Natural gasoline..... gallons	58,034,000	1,731,000	46,199,000	1,090,000
Petroleum..... barrels	21,804,000	14,220,000	21,807,000	18,550,000
Salt..... short tons	529,280	1,962,690	488,805	1,919,773
Sand and gravel..... do	5,011,756	3,267,191	1,888,544	1,022,763
Sand-lime brick..... thousands	(1) ²	(1) ²		
Stone..... short tons	(1)	(1)	(1)	(1)
Miscellaneous ⁴		2,654,095		1,228,164
Total value, eliminating duplications.....		61,692,802		60,920,829

¹ Value included under "Miscellaneous."

² Figures obtained through cooperation with Bureau of the Census.

³ No canvass.

⁴ Includes minerals indicated by "1" above.

220. MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Mineral production of Maine, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Cement.....barrels..	(1)	(1)	(1)	(1)
Clay products.....		\$342,096		\$213,447
Clay, raw.....short tons..	(1 ¹)	(1 ³)	85	² 1,309
Feldspar (crude).....long tons..	10,220	65,417	8,345	41,874
Gems and precious stones.....		(4)		(4)
Lime.....short tons..	28,157	250,028	23,354	186,251
Mica, scrap.....do.....	102	1,740	80	1,160
Mineral waters.....gallons sold..	(4)	(4)	(4)	(4)
Peat.....short tons..	(4)	(4)	(4)	(4)
Sand and gravel.....do.....	4,094,781	454,967	3,736,440	396,842
Slate.....		257,619		105,192
Stone.....short tons..	300,100	2,422,766	⁵ 251,710	⁶ 1,588,031
Miscellaneous ⁶		1,096,409		641,481
Total value, eliminating duplications.....		4,889,282		3,174,278

¹ Value included under "Miscellaneous."

² Figures obtained through cooperation with Bureau of the Census.

³ Value not included in total value for State.

⁴ No canvass.

⁵ Exclusive of unclassified stone, value for which is included under "Miscellaneous."

⁶ Includes minerals indicated by "1" and "3" above.

Mineral production of Maryland, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Asbestos.....short tons..	(1)	(1)	(1)	(1)
Cement.....barrels..	(1)	(1)	(1)	(1)
Clay products.....		\$2,587,535		\$1,153,852
Clay, raw.....short tons..	25,888	³ 90,587	12,614	³ 53,912
Coal.....do.....	2,005,773	2,907,000	1,428,937	1,827,000
Coke.....do.....	817,995	(1 ³)	499,502	(1 ³)
Feldspar (crude).....long tons..			90	1,157
Iron, pig.....do.....	677,076	(1 ³)	367,614	(1 ³)
Lime.....short tons..	36,445	268,148	26,536	171,312
Mineral waters.....gallons sold..	(4)	(4)	(4)	(4)
Potassium salts.....short tons..	(1)	(1)	(1)	(1)
Sand and gravel.....do.....	2,017,788	1,701,037	1,622,298	1,200,802
Silica (quartz).....do.....	444	4,928	347	5,200
Slate.....		(1)		(1)
Stone.....short tons..	⁵ 1,098,350	⁵ 1,484,265	⁵ 993,500	⁵ 1,209,706
Talc.....do.....	(1)	(1)	(1)	(1)
Miscellaneous ⁶		16,620,014		9,022,420
Total value, eliminating duplications.....		11,330,323		7,233,821

¹ Value included under "Miscellaneous."

² Figures obtained through cooperation with Bureau of the Census.

³ Value not included in total value for State.

⁴ No canvass.

⁵ Exclusive of marble, value for which is included under "Miscellaneous."

⁶ Includes minerals indicated by "1" and "3" above.

SUMMARY OF MINERAL PRODUCTION

A21

Mineral production of Massachusetts, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Briquets, fuel.....short tons..	(1) ¹	(1) ¹	23, 011	² \$166, 834
Clay products.....		³ \$1, 763, 114		³ 965, 295
Clay, raw.....short tons..	1, 383	⁴ 9, 355	425	⁴ 5, 265
Coke.....do.....	1, 150, 270	² 9, 061, 415	987, 106	² 6, 493, 682
Fuller's earth.....do.....	(1)	(1)	(1)	(1)
Iron, pig.....long tons..	(1) ¹	(1) ¹	(1) ¹	(1) ¹
Lime.....short tons..	123, 607	1, 108, 036	68, 959	527, 305
Mineral waters.....gallons sold..	(4)	(4)	(4)	(4)
Sand and gravel.....short tons..	5, 040, 787	2, 622, 755	5, 003, 193	2, 334, 043
Sand-lime brick.....thousands..	(1) ³	(1) ³	(1) ³	(1) ³
Silica (quartz).....short tons..			373	2, 170
Stone.....do.....	2, 401, 250	5, 480, 707	1, 824, 380	4, 079, 845
Miscellaneous ⁵		2, 050, 667		447, 575
Total value, eliminating duplications.....		11, 170, 497		8, 038, 615

- ¹ Value included under "Miscellaneous."
- ² Value not included in total value for State.
- ³ Figures obtained through cooperation with Bureau of the Census.
- ⁴ No canvass.
- ⁵ Includes minerals indicated by "1" above.

Mineral production of Michigan, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Bromine.....pounds..	(1)	(1)	(1)	(1)
Calcium chloride.....short tons..	(1)	(1)	(1)	(1)
Cement.....barrels..	7, 168, 720	\$6, 984, 725	4, 886, 928	\$4, 442, 666
Clay products.....		² 3, 417, 535		² 2, 632, 226
Clay, raw.....short tons..	185	³ 1, 291	76	³ 904
Coal.....do.....	359, 403	1, 094, 000	446, 149	1, 219, 000
Coke.....do.....	2, 436, 630	² 11, 632, 284	2, 165, 109	² 10, 144, 218
Copper.....pounds..	118, 059, 491	10, 743, 414	54, 396, 108	3, 426, 955
Gems and precious stones.....	(4)	(4)	(4)	(4)
Graphite, amorphous.....short tons..	(1)	(1)	(1)	(1)
Grindstones.....do.....	(1)	(1)	(1)	(1)
Gypsum.....do.....	383, 123	3, 537, 886	248, 542	2, 099, 040
Iron ore:				
Sold to furnaces.....long tons..	5, 555, 376	15, 986, 273	968, 789	2, 703, 900
Sold for paint.....do.....	192	(1)		
Iron, pig.....do.....	519, 643	³ 8, 964, 439	280, 536	³ 4, 269, 528
Lime.....short tons..	46, 716	334, 015	38, 610	267, 520
Magnesium.....pounds..	580, 463	199, 633	791, 699	228, 653
Magnesium chloride (natural).....do.....	(1)	(1)	(1)	(1)
Magnesium sulphate (natural).....do.....	(1)	(1)	(1)	(1)
Manganiferous ore.....long tons..	2, 217	(1)	9, 582	29, 356
Marl, calcareous.....short tons..	(1)	(1)	(1)	(1)
Mineral waters.....gallons sold..	(4)	(4)	(4)	(4)
Natural gas.....M cubic feet..	472, 000	111, 000	968, 000	262, 000
Ore (copper).....short tons..	3, 570, 748	(4)	1, 142, 775	(4)
Peat.....do.....	(4)	(4)	(4)	(4)
Petroleum.....barrels..	3, 789, 000	2, 840, 000	6, 910, 000	5, 260, 000
Salt.....short tons..	2, 063, 980	5, 760, 001	1, 715, 304	4, 845, 379
Sand and gravel.....	8, 164, 571	3, 361, 729	5, 408, 663	2, 291, 106
Sand-lime brick.....thousands..	² 28, 819	² 222, 223	² 8, 420	² 75, 717
Silver.....troy ounces..	1, 437	417	71, 408	20, 137
Stone.....short tons..	6, 203, 220	4, 055, 019	⁶ 3, 695, 210	⁶ 2, 003, 492
Miscellaneous ⁷		4, 137, 988		2, 906, 804
Total value, eliminating duplications.....		62, 785, 908		34, 713, 951

- ¹ Value included under "Miscellaneous."
- ² Figures obtained through cooperation with Bureau of the Census.
- ³ Value not included in total value for State.
- ⁴ No canvass.
- ⁵ Not valued as ore; value of recoverable metal content included under the metals.
- ⁶ Exclusive of unclassified stone, value for which is included under "Miscellaneous."
- ⁷ Includes minerals indicated by "1" and "6" above.

Mineral production of Minnesota, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Cement.....barrels.....	(1)	(1)	(1)	(1)
Clay products.....		\$1,137,737		\$595,757
Clay, raw.....short tons.....	12,327	\$28,131	6,541	\$14,437
Coke.....do.....	440,489	\$3,521,295	385,699	\$2,782,282
Feldspar (crude).....long tons.....	(1)	(1)	(1)	(1)
Flint lining for tube mills.....short tons.....	(1)	(1)	(1)	(1)
Gems and precious stones.....	(1)	(1)	(1)	(1)
Iron ore.....long tons.....	17,063,591	46,020,269	2,248,727	6,263,131
Iron, pig.....do.....	17,878	(1)	1,571	(1)
Lime.....short tons.....	(1)	(1)	(1)	(1)
Manganiferous ore.....long tons.....	243,919	733,788	1,399	4,030
Mineral waters.....gallons sold.....	(1)	(1)	(1)	(1)
Pebbles for grinding.....short tons.....	(1)	(1)	(1)	(1)
Sand and gravel.....do.....	4,496,777	2,404,718	3,950,289	1,963,235
Sand-lime brick.....thousands.....	\$11,452	\$94,052	\$6,455	\$38,740
Stone.....short tons.....	\$349,390	\$3,036,920	\$302,080	\$1,876,420
Miscellaneous ⁶		2,148,430		1,535,741
Total value, eliminating duplications.....		55,275,230		12,272,622

¹ Value included under "Miscellaneous."

² Figures obtained through cooperation with Bureau of the Census.

³ Value not included in total value for State.

⁴ No canvass.

⁵ Exclusive of basalt, value for which is included under "Miscellaneous."

⁶ Includes minerals indicated by "1" and "5" above.

Mineral production of Mississippi, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Clay products.....		\$329,440		\$77,067
Clay, raw.....short tons.....	(2)	(2)	(2)	(2)
Mineral waters.....gallons sold.....	(1)	(1)	(1)	(1)
Natural gas.....M cubic feet.....	6,048,000	1,458,000	8,648,000	2,324,000
Sand and gravel.....short tons.....	1,218,372	592,064	707,949	317,477
Stone.....do.....	(2)	(2)	(2)	(2)
Miscellaneous ⁴		9,067		1,629
Total value, eliminating duplications.....		2,387,771		2,718,913

¹ Figures obtained through cooperation with Bureau of the Census.

² Value included under "Miscellaneous."

³ Value not included in total value for State

⁴ No canvass.

⁵ Includes minerals indicated by "2" above.

SUMMARY OF MINERAL PRODUCTION

A23

Mineral production of Missouri, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Asphalt (native)..... short tons			9,863	\$52,945
Barite..... do	93,417	\$539,152	85,458	463,347
Briquets, fuel..... do	(1 ²)		(1 ²)	(1 ²)
Cement..... barrels	5,103,287	5,052,840	4,846,871	3,666,220
Chats..... short tons	1,343,463	335,865	1,300,000	260,000
Clay products.....		6,442,039		3,462,036
Clay, raw..... short tons	219,181	738,607	126,490	504,403
Coal..... do	3,620,497	7,248,000	4,069,598	6,654,000
Coke..... do	(1 ²)		(1 ²)	(1 ²)
Iron ore..... long tons	112,055	337,144	25,418	72,144
Lead..... short tons	160,121	11,848,954	117,159	7,029,540
Lime..... do	224,416	1,481,240	174,427	1,034,850
Mineral paints, zinc and lead pigments..... do	7,360	(1 ²)	4,780	(1 ²)
Mineral waters..... gallons sold	(4)	(4)	(4)	(4)
Natural gas..... M cubic feet	1,534,000	685,000	932,000	502,000
Ores (crude), etc.:				
Lead..... short tons	5,140,600	(4)	3,754,200	(4)
Lead-zinc..... do	30,800	(4)	23,500	(4)
Zinc..... do	69,000	(4)	8,900	(4)
Petroleum..... barrels			10,000	9,000
Pyrites..... long tons			3,958	(1)
Sand and gravel..... short tons	4,807,626	2,646,756	3,526,373	2,114,440
Sand and sandstone (finely ground)..... do	(3)	(3)		
Sand-lime brick..... thousands	40,000	11,600	1,128	318
Silver..... troy ounces	3,526,230	4,767,396	3,303,290	3,769,087
Stone..... short tons	(1)		(1)	(1)
Tripoli..... do	3,205	243,580	986	59,160
Zinc..... do		2,546,040		1,492,870
Miscellaneous ⁶				
Total value, eliminating duplications.....		41,805,772		29,245,055

¹ Value included under "Miscellaneous."

² Value not included in total value for State.

³ Figures obtained through cooperation with Bureau of the Census.

⁴ No canvass.

⁵ Not valued as ore; value of recoverable metal content included under the metals.

⁶ Includes minerals indicated by "1" above.

A24 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Mineral production of Montana, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Arsenious oxide..... short tons..	8, 019	\$463, 497	6, 400	\$334, 080
Cement..... barrels..	(1)	(1)	(1)	(1)
Clay products.....		\$ 135, 803		(1 2)
Clay, raw..... short tons..	4, 274	\$ 6, 904	1, 199	\$ 2, 291
Coal..... do.....	2, 378, 052	4, 299, 000	2, 125, 225	3, 527, 000
Copper..... pounds..	184, 555, 735	16, 794, 572	84, 847, 349	5, 345, 383
Gems and precious stones.....		(4)		(4)
Gold..... troy ounces..	40, 112	829, 192	40, 602	839, 318
Gypsum..... short tons..	(1)	(1)	(1)	(1)
Lead..... do.....	4, 430	327, 827	1, 079	64, 733
Lime..... do.....	2, 028	26, 666	1, 016	13, 353
Manganese ore..... long tons..	25, 812	492, 282	15, 479	(1)
Manganiferous ore..... do.....	14, 311	(1)		
Micaceous minerals (vermiculite)..... short tons..	(1)	(1)	(1)	(1)
Mineral waters..... gallons sold..	(4)	(4)	(4)	(4)
Natural gas..... M cubic feet..	10, 949, 000	3, 299, 000	13, 295, 000	4, 359, 000
Ores (crude), etc:				
Copper..... short tons..	1, 878, 757	(4)	668, 679	(4)
Copper-lead..... do.....	79	(4)	104	(4)
Dry and siliceous (gold and silver)..... do.....	87, 867	(4)	65, 586	(4)
Lead..... do.....	3, 031	(4)	1, 907	(4)
Lead-zinc..... do.....	50, 949	(4)	7, 880	(4)
Zinc..... do.....	65, 000	(4)	20, 858	(4)
Petroleum..... barrels..	2, 830, 000	2, 730, 000	2, 457, 000	2, 560, 000
Phosphate rock..... long tons..	67, 893	301, 511	20, 090	79, 271
Sand and gravel..... short tons..	322, 201	178, 739	3, 265, 528	255, 014
Silver..... troy ounces..	3, 829, 837	1, 110, 653	1, 686, 213	475, 512
Stone..... short tons..	\$ 86, 870	\$ 117, 883	222, 570	239, 072
Sulphuric acid..... do.....	(1 2)	(1 2)	(1 2)	(1 2)
Tungsten ore (60 percent concentrates)..... do.....			30	(1)
Zinc..... do.....	6, 747	512, 809	2, 197	131, 791
Miscellaneous 4		988, 696		870, 111
Total value, eliminating duplications.....		32, 359, 904		19, 016, 566

1 Value included under "Miscellaneous."

2 Figures obtained through cooperation with Bureau of the Census.

3 Value not included in total value for State.

4 No canvass.

5 Not valued as ore; value of recoverable metal content included under the metals.

6 Exclusive of sandstone, value for which is included under "Miscellaneous."

7 From copper smelting.

8 Includes minerals indicated by "1" and "4" above.

Mineral production of Nebraska, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Briquets, fuel..... short tons..			(1 2)	(1 2)
Cement..... barrels..	(1)	(1)	(1)	(1)
Clay products.....		\$ 386, 951		(1 3)
Clay, raw..... short tons..	2, 641	\$ 4, 034	5, 787	\$ 86, 748
Mineral waters..... gallons sold..	(4)	(4)	(4)	(4)
Pumice..... short tons..	(1)	(1)	(1)	(1)
Sand and gravel..... do.....	3, 103, 917	1, 425, 956	1, 557, 663	607, 343
Stone..... do.....	74, 030	117, 611	84, 050	96, 570
Miscellaneous 4		1, 692, 908		847, 732
Total value, eliminating duplications.....		3, 623, 426		1, 548, 486

1 Value included under "Miscellaneous."

2 Value not included in total value for State.

3 Figures obtained through cooperation with Bureau of the Census.

4 No canvass.

5 Includes minerals indicated by "1" above.

SUMMARY OF MINERAL PRODUCTION

A25

Mineral production of Nevada, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Antimony ore..... short tons			42	(1)
Barite..... do	1,400	\$9,600	(1)	(1)
Clay products.....		(1) ²		(1) ²
Clay, raw..... short tons	2,023	\$ 11,545	641	\$ 3,891
Coal..... do	(1)	(1)		
Copper..... pounds	72,634,497	6,609,739	31,487,606	1,983,719
Diatomite..... short tons	347	10,490	(1)	(1)
Feldspar (crude)..... long tons	(1)	(1)	50	300
Fluorspar..... short tons	395	(1)	49	(1)
Fuller's earth..... do	(1)	(1)	(1)	(1)
Gems and precious stones.....		(4)		(4)
Gold..... troy ounces	142,294	2,941,473	129,720	2,681,547
Graphite, amorphous..... short tons	(1)	(1)	(1)	(1)
Gypsum..... do	131,079	792,486	80,938	429,998
Lead..... do	7,930	586,843	440	26,430
Lime..... do	(1)	(1)	(1)	(1)
Marl, calcareous..... do	1,007	4,635	(1)	(1)
Mercury..... flasks (76 pounds)	2,217	193,657	474	27,456
Mineral waters..... gallons sold	(4)	(4)	(4)	(4)
Ores (crude), etc.:				
Copper..... short tons	2,936,899	(5)	1,357,464	(5)
Copper-lead..... do	3,824	(5)	434	(5)
Dry and siliceous (gold and silver)..... do	483,157	(5)	493,191	(5)
Lead..... do	22,297	(5)	3,262	(5)
Lead-zinc..... do	119,220	(5)	594	(5)
Zinc..... do	75	(5)	36	(5)
Potassium salts..... do	(1)	(1)		
Salt..... do	(1)	(1)	(1)	(1)
Sand and gravel..... do	2,186,249	1,029,804	990,415	408,423
Silver..... troy ounces	2,562,071	743,001	1,304,365	367,831
Sodium sulphate from natural sources..... short tons	(1)	(1)	(1)	(1)
Stone..... do	58,600	64,048	236,590	213,014
Sulphur..... long tons	(1)	(1)		
Tungsten ore (60 percent concentrates)..... short tons	(1)	(1)	241	140,786
Zinc..... do	10,431	792,731	127	7,644
Miscellaneous ⁶		1,185,278		281,135
Total value, eliminating duplications.....		14,963,785		6,568,283

¹ Value included under "Miscellaneous."

² Figures obtained through cooperation with Bureau of the Census.

³ Value not included in total value for State.

⁴ No canvass.

⁵ Not valued as ore; value of recoverable metal content included under the metals.

⁶ Includes minerals indicated by "1" above.

A26 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Mineral production of New Hampshire, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Clay products.....		¹ \$349, 508		¹ \$186, 686
Feldspar (crude)..... long tons..	12, 573	102, 140	8, 718	61, 416
Garnet, abrasive..... short tons..	(²)	(²)	(²)	(²)
Mica:				
Scrap..... do.....	295	5, 465	344	5, 585
Sheet..... pounds.....	441, 164	36, 368	146, 014	17, 978
Mineral waters..... gallons sold..	(³)	(³)	(³)	(³)
Sand and gravel..... short tons..	1, 221, 259	1, 031, 494	1, 696, 441	224, 101
Silica (quartz)..... do.....	(²)	(²)		
Stone..... do.....	188, 310	1, 217, 020	208, 710	846, 188
Miscellaneous.....		54, 137		9, 600
Total value, eliminating duplications.....		2, 796, 132		1, 351, 554

¹ Figures obtained through cooperation with Bureau of the Census.

² Value included under "Miscellaneous."

³ No canvass.

Mineral production of New Jersey, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Briquets, fuel..... short tons..	(^{1 2})	(^{1 2})	(^{1 2})	(^{1 2})
Cement..... barrels.....	(¹)	(¹)	(¹)	(¹)
Clay products.....		³ \$19, 901, 266		³ \$9, 430, 892
Clay, raw..... short tons.....	135, 537	² 515, 821	62, 114	² 248, 582
Coke..... do.....	930, 912	(^{1 2})	805, 720	(^{1 2})
Ferro-alloys..... long tons.....	(^{1 2})	(^{1 2})	(^{1 2})	(^{1 2})
Graphite, artificial..... pounds.....	(^{1 2})	(^{1 2})	(^{1 2})	(^{1 2})
Iron ore..... long tons.....	239, 722	984, 021	14, 966	(¹)
Lime..... short tons.....	(¹)	(¹)	(¹)	(¹)
Manganiferous residuum..... long tons..	96, 990	(¹)	25, 320	(¹)
Marl, greensand..... short tons.....	8, 252	196, 327	9, 231	201, 173
Mineral waters..... gallons sold..	(⁴)	(⁴)	(⁴)	(⁴)
Ore (zinc)..... short tons.....	640, 560	(⁵)	559, 651	(⁵)
Peat..... do.....	(⁴)	(⁴)	(⁴)	(⁴)
Sand and gravel..... do.....	4, 329, 994	3, 433, 176	2, 646, 090	1, 993, 281
Sand and sandstone (finely ground)..... do..	(¹)	(¹)	34, 212	141, 607
Sand-lime brick..... thousands.....	(^{1 3})	(^{1 3})	(^{1 3})	(^{1 3})
Stone..... short tons.....	⁶ 2, 381, 700	⁶ 2, 994, 241	1, 514, 800	1, 743, 302
Talc..... do.....	(¹)	(¹)	(¹)	(¹)
Zinc ⁷ do.....	94, 285	(¹)	81, 460	7, 993, 650
Miscellaneous ⁸		20, 604, 631		6, 744, 465
Total value, eliminating duplications.....		41, 632, 683		23, 073, 173

¹ Value included under "Miscellaneous."

² Value not included in total value for State.

³ Figures obtained through cooperation with Bureau of the Census.

⁴ No canvass.

⁵ Not valued as ore; value of recoverable metal content included under the metal.

⁶ Exclusive of granite, value for which is included under "Miscellaneous."

⁷ Value reported for zinc in New Jersey is estimated smelting value of recoverable zinc content of ore after freight, haulage, smelting, and manufacturing charges are added.

⁸ Includes minerals indicated by "¹" and "⁶" above.

SUMMARY OF MINERAL PRODUCTION

A27

Mineral production of New Mexico, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Asphalt (native)..... short tons	(1)	(1)	(1)	(1)
Clay products.....		\$ 123, 008		\$ 60, 937
Clay, raw..... short tons	1, 444	\$ 6, 444	266	\$ 1, 559
Coal..... do	1, 552, 822	4, 597, 000	1, 263, 386	3, 321, 000
Columbite..... pounds	(1)	(1)	115	(1)
Copper..... do	61, 503, 100	5, 596, 782	28, 419, 000	1, 790, 397
Fluorspar..... short tons	1, 026	(1)	529	(1)
Fluorspar, optical.....	(1)	176		
Gems and precious stones.....		(1)		(1)
Gold..... troy ounces	31, 161	644, 160	23, 208	479, 753
Iron ore..... long tons	168, 075	(1)		
Lead..... short tons	11, 269	833, 869	10, 114	606, 810
Lime..... do	(1)	(1)	990	8, 800
Lithium minerals..... do			(1)	(1)
Manganese ore..... long tons	1, 072	(1)		
Mica:				
Scrap..... short tons	(1)	(1)	537	8, 100
Sheet..... pounds	(1)	(1)	(1)	(1)
Mineral waters..... gallons sold	(1)	(1)	(1)	(1)
Molybdenum..... pounds	(1)	(1)	(1)	(1)
Natural gas..... M cubic feet	19, 354, 000	2, 401, 000	17, 604, 000	2, 448, 000
Natural gasoline..... gallons	17, 775, 000	419, 000	17, 507, 000	377, 000
Ores (crude), etc.:				
Copper..... short tons	2, 642, 654	(1)	1, 184, 528	(1)
Copper-lead..... do	3, 347	(1)	977	(1)
Dry and siliceous (gold and silver)..... do	97, 502	(1)	29, 878	(1)
Lead..... do	1, 982	(1)	607	(1)
Lead-zinc..... do	225, 531	(1)	228, 754	(1)
Zinc..... do	32, 875	(1)	19, 974	(1)
Petroleum..... barrels	15, 227, 000	6, 490, 000	12, 455, 000	7, 650, 000
Potassium salts..... short tons	(1)	(1)	(1)	(1)
Salt..... do	(1)	(1)	(1)	(1)
Sand and gravel..... do	339, 640	275, 086	834, 521	570, 555
Silver..... troy ounces	1, 041, 859	302, 139	1, 142, 351	322, 143
Stone..... short tons	375, 650	537, 740	308, 640	253, 051
Uranium ore..... do	(1)	(1)		
Zinc..... do	27, 866	2, 117, 816	25, 593	1, 535, 580
Miscellaneous ¹		1, 011, 936		831, 757
Total value, eliminating duplications.....		25, 349, 712		20, 263, 883

¹ Value included under "Miscellaneous."² Figures obtained through cooperation with Bureau of the Census.³ Value not included in total value for State.⁴ Weight not reported.⁵ No canvass.⁶ Not valued as ore; value of recoverable metal content included under the metals.⁷ Exclusive of unclassified stone, value for which is included under "Miscellaneous."⁸ Includes minerals indicated by "1" and "7" above.

Mineral production of New York, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Aluminum.....pounds..	(1 2)	(1 2)	(1 2)	(1 2)
Cement.....barrels..	3 9,833,048	3 \$10,638,666	3 5,993,374	3 \$6,317,269
Clay products.....		4 11,572,398		4 4,170,130
Clay, raw.....short tons..	4,399	2 27,777	707	2 11,959
Coke.....do.....	3,578,311	2 22,115,932	3,130,078	2 19,246,204
Diatomite.....do.....	294	20,032	(1)	(1)
Emery.....do.....	512	5,557	250	2,781
Feldspar (crude).....long tons..	6,160	29,959	6,255	34,705
Ferro-alloys.....do.....	83,124	2 7,652,809	55,668	2 4,082,224
Garnet, abrasive.....short tons..	(1)	(1)	(1)	(1)
Graphite, artificial.....pounds..	(1 2)	(1 2)	(1 2)	(1 2)
Gypsum.....short tons..	744,613	6,111,853	408,208	4,213,793
Iron ore:				
Sold to furnaces.....long tons..	259,184	1,067,489	30,600	(1)
Sold for paint.....do.....	(1)	(1)	(1)	(1)
Iron, pig.....do.....	1,014,320	2 15,568,275	594,350	2 8,546,837
Lead.....short tons..	(1)	(1)	(1)	(1)
Lime.....do.....	49,574	412,351	29,391	231,504
Millstones.....		2,030		1,850
Mineral waters.....gallons sold..	(5)	(5)	(5)	(5)
Natural gas.....M cubic feet..	7,868,000	5,363,000	8,813,000	6,124,000
Natural gasoline.....gallons..	132,000	9,000	117,000	10,000
Ores (crude), etc.:				
Lead-zinc.....short tons..	176,434	(5)	117,064	(5)
Zinc.....do.....	93,148	(5)	72,615	(5)
Peat.....do.....	(5)	(5)	(5)	(5)
Petroleum.....barrels..	3,363,000	6,800,000	3,508,000	6,630,000
Pyrites.....long tons..	26,604	(1)	16,871	(1)
Salt.....short tons..	1,788,940	5,293,470	1,556,642	4,490,792
Sand and gravel.....do.....	17,155,174	10,612,014	9,232,390	5,644,328
Sand-lime brick.....thousands..	(1 4)	(1 4)	(1 4)	(1 4)
Silica (quartz).....short tons..	(1)	(1)	(1)	(1)
Slate.....		325,476		267,488
Stone.....short tons..	12,528,020	15,598,054	8,312,260	9,349,273
Talc.....do.....	84,977	1,059,790	62,833	764,692
Zinc.....do.....	24,100	1,831,600	16,794	1,007,640
Miscellaneous 7.....		22,189,728		10,699,372
Total value, eliminating duplications.....		78,007,467		49,881,167

1 Value included under "Miscellaneous."

2 Value not included in total value for State.

3 Exclusive of natural cement, value for which is included under "Miscellaneous."

4 Figures obtained through cooperation with Bureau of the Census.

5 No canvass.

6 Not valued as ore; value of recoverable metal content included under the metals.

7 Includes minerals indicated by "1" and "3" above.

SUMMARY OF MINERAL PRODUCTION

A29

Mineral production of North Carolina, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Aluminum.....pounds..	(1 2)	(1 2)	(1 2)	(1 2)
Barite.....short tons..			100	\$465
Clay products.....		\$1,154,732		\$570,124
Clay, raw.....short tons..	12,287	2 195,700	7,107	2 103,365
Coal.....do.....	2,363	9,000	1,900	6,000
Columbite.....pounds..			275	(1)
Copper.....do.....	(1)	(1)	(1)	(1)
Feldspar (crude).....long tons	86,429	505,525	58,465	300,877
Gems and precious stones.....		(4)		(4)
Gold.....troy ounces..	368	7,598	367	7,591
Lime.....short tons..	(1)	(1)	(1)	(1)
Marl, calcareous.....do.....	1,000	2,250	(1)	(1)
Mica:				
Scrap.....do.....	5,312	79,601	4,837	56,842
Sheet.....pounds.....	389,426	51,657	127,696	18,322
Micaceous minerals (muscovite schist).....short tons	(1)	(1)		(1)
Millstones.....				
Mineral waters.....gallons sold	(4)	(4)	(4)	(4)
Ores (crude):				
Copper.....short tons..	63,650	(5)	20,105	(5)
Dry and siliceous (gold and silver).....do.....	150	(5)	555	(5)
Sand and gravel.....do.....	414,282	238,053	177,074	99,640
Silica (quartz).....do.....	1,807	11,460	1,535	7,045
Silver.....troy ounces..	20,333	5,897	10,045	2,832
Stone.....short tons..	1,140,900	2,485,640	6 429,990	6 924,022
Talc.....do.....	15,283	170,250	(1)	(1)
Miscellaneous 7.....		6,351,727		3,849,151
Total value, eliminating duplications.....		5,554,190		2,466,311

¹ Value included under "Miscellaneous."

² Value not included in total value for State.

³ Figures obtained through cooperation with Bureau of the Census.

⁴ No canvass.

⁵ Not valued as ore; value of recoverable metal content included under the metals.

⁶ Exclusive of marble, value for which is included under "Miscellaneous."

⁷ Includes minerals indicated by "1" and "6" above.

Mineral production of North Dakota, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Briquets, fuel.....short tons..	(1 2)	(1 2)	(1 2)	(1 2)
Clay products.....		\$76,085		(1 2)
Clay, raw.....short tons..	2	2 33	5	2 \$81
Coal.....do.....	1,519,307	2,155,000	1,739,658	2,200,000
Mineral waters.....gallons sold	(4)	(4)	(4)	(4)
Sand and gravel.....short tons..	89,022	40,369	1,652,264	166,552
Miscellaneous.....		23,000		87,200
Total value, eliminating duplications.....		2,271,454		2,385,735

¹ Value included under "Miscellaneous."

² Value not included in total value for State.

³ Figures obtained through cooperation with Bureau of the Census.

⁴ No canvass.

A30 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Mineral production of Ohio, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Bromine.....pounds.....	(1)	(1)	(1)	(1)
Calcium chloride.....short tons.....	(1)	(1)	(1)	(1)
Cement.....barrels.....	² 6, 211, 789	² \$6, 146, 302	² 4, 225, 601	² \$3, 719, 250
Clay products.....		³ 39, 419, 590		³ 19, 666, 770
Clay, raw.....short tons.....	268, 835	⁴ 534, 811	130, 143	⁴ 256, 988
Coal.....do.....	20, 410, 995	25, 371, 000	13, 909, 451	15, 418, 000
Coke.....do.....	3, 932, 939	⁴ 17, 588, 581	2, 346, 686	⁴ 10, 310, 300
Ferro-alloys.....long tons.....	59, 074	⁴ 2, 032, 617	32, 587	⁴ 963, 457
Grindstones and pulpstones.....short tons.....	5, 198	171, 785	4, 291	122, 759
Gypsum.....do.....	(1)	(1)	(1)	(1)
Iron, pig.....long tons.....	4, 290, 669	⁴ 69, 001, 692	2, 505, 268	⁴ 37, 886, 811
Lime.....short tons.....	656, 441	4, 007, 004	475, 485	2, 511, 368
Marl, calcareous.....do.....	(1)	(1)	(1)	(1)
Mineral paints, zinc and lead pigments.....do.....	(1 ⁴)	(1 ⁴)	(1 ⁴)	(1 ⁴)
Mineral waters.....gallons sold.....	(5)	(5)	(5)	(5)
Natural gas.....M cubic feet.....	56, 326, 000	32, 061, 000	51, 466, 000	28, 640, 000
Natural gasoline.....gallons.....	5, 199, 000	271, 000	5, 163, 000	229, 000
Petroleum.....barrels.....	5, 327, 000	5, 610, 000	4, 644, 000	5, 430, 000
Rubbing stones, scythestones, and whetstones short tons.....	154	20, 377	141	17, 874
Salt.....do.....	1, 398, 000	2, 526, 952	1, 196, 993	2, 429, 613
Sand and gravel.....do.....	8, 387, 377	5, 216, 816	5, 695, 546	3, 440, 534
Sand and sandstone (finely ground).....do.....	(1)	(1)	(1)	(1)
Sand-lime brick.....thousands.....	(1 ³)	(1 ³)	(1 ³)	(1 ³)
Silica (quartz).....short tons.....	(1)	(1)	(1)	(1)
Stone.....do.....	9, 416, 610	8, 093, 741	⁶ 6, 319, 870	⁶ 5, 107, 775
Sulphuric acid ⁷.....do.....	(1 ⁴)	(1 ⁴)	(1 ⁴)	(1 ⁴)
Miscellaneous ⁸.....do.....		5, 083, 532		3, 461, 184
Total value, eliminating duplications.....		130, 927, 783		87, 996, 538

¹ Value included under "Miscellaneous."

² Exclusive of natural cement in 1931 and of puzzolan and natural cement in 1932, value for which is included under "Miscellaneous."

³ Figures obtained through cooperation with Bureau of the Census.

⁴ Value not included in total value for State.

⁵ No canvass.

⁶ Exclusive of unclassified stone, value for which is included under "Miscellaneous."

⁷ From zinc smelting.

⁸ Includes minerals indicated by "1," "3," and "6" above.

SUMMARY OF MINERAL PRODUCTION

A31

Mineral production of Oklahoma, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Asphalt (native)..... short tons..	(1)	(1)	(1)	(1)
Briquets, fuel..... do.....	(1 2)	(1 2)	(1 2)	(1 2)
Calcium chloride..... do.....	(1)	(1)	(1)	(1)
Cement..... barrels.....	(1)	(1)	(1)	(1)
Chats..... short tons.....	146,000	\$21,900	110,000	\$16,500
Clay products..... do.....	(1 2)	(1 2)	6,097	\$79,835
Clay, raw..... short tons.....	1,908,394	4,614,000	1,255,466	2,646,000
Coal..... do.....	(1)	(1)	(1)	(1)
Gypsum..... do.....	13,210	977,540	10,634	658,040
Lead..... do.....	(4)	(4)	(4)	(4)
Mineral waters..... gallons sold.....	263,685,000	32,593,000	255,487,000	28,108,000
Natural gas..... M cubic feet.....	454,886,000	12,619,000	378,584,000	8,803,000
Natural gasoline..... gallons.....				
Ores (crude), etc.:				
Lead..... short tons.....			500	(9)
Lead-zinc..... do.....	1,620,800	(9)	1,258,200	(9)
Zinc..... do.....	2,208,100	(9)	329,000	(9)
Petroleum..... barrels.....	180,574,000	119,200,000	153,244,000	137,920,000
Potassium salts..... short tons.....			(1)	(1)
Pumice..... do.....	1,000	8,000	812	6,500
Salt..... do.....	(1)	(1)	(1)	(1)
Sand and gravel..... do.....	937,746	529,851	616,250	306,415
Stone..... do.....	1,731,680	1,410,782	788,780	589,617
Sulphuric acid 6..... do.....	(1 2)	(1 2)	(1 2)	(1 2)
Tripoli..... do.....	(1)	(1)	(1)	(1)
Zinc..... do.....	78,132	5,938,032	63,437	3,806,220
Miscellaneous 7..... do.....		4,407,955		2,492,555
Total value, eliminating duplications.....		181,904,857		185,120,909

- 1 Value included under "Miscellaneous."
- 2 Value not included in total value for State.
- 3 Figures obtained through cooperation with Bureau of the Census.
- 4 No canvass.
- 5 Not valued as ore; value of recoverable metal content included under the metals.
- 6 From zinc smelting.
- 7 Includes minerals indicated by "1" above.

Mineral production of Oregon, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Briquets, fuel..... short tons.....	(1 2)	(1 2)	(1 2)	(1 2)
Cement..... barrels.....	(1)	(1)	(1)	(1)
Clay products..... do.....		\$268,821		(1 2)
Clay, raw..... short tons.....	51	4,170	(1 2)	(1 2)
Coal..... do.....	(4)	(4)	(1)	(1)
Copper..... pounds.....	1,700	155	32,199	\$2,029
Diatomite..... short tons.....	(1)	(1)		
Gems and precious stones..... do.....		(4)		(9)
Gold..... troy ounces.....	15,350	317,315	19,861	410,568
Lead..... short tons.....	2	129	4	238
Lime..... do.....	(1)	(1)		
Mercury..... flasks (76 pounds).....	5,011	437,716	2,523	146,145
Mineral waters..... gallons sold.....	(9)	(9)	(9)	(9)
Ores (crude), etc.:				
Copper..... short tons.....			176	(9)
Dry and siliceous (gold and silver)..... do.....	7,092	(9)	4,973	(9)
Lead..... do.....			1	(9)
Lead-zinc..... do.....			45	(9)
Platinum and allied metals..... troy ounces.....	15	700	83	3,463
Pumice..... short tons.....			140	2,520
Sand and gravel..... do.....	1,861,049	1,014,092	1,780,715	839,813
Silver..... troy ounces.....	7,254	2,104	8,616	2,430
Stone..... short tons.....	1,641,090	1,515,556	831,150	692,266
Zinc..... do.....			6	362
Miscellaneous 7..... do.....		1,996,489		1,349,144
Total value, eliminating duplications.....		5,045,307		2,989,333

- 1 Value included under "Miscellaneous."
- 2 Value not included in total value for State.
- 3 Figures obtained through cooperation with Bureau of the Census.
- 4 No canvass.
- 5 Not valued as ore; value of recoverable metal content included under the metals.
- 6 Exclusive of limestone, value for which is included under "Miscellaneous."
- 7 Includes minerals indicated by "1" and "4" above.

A32 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Mineral production of Pennsylvania, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Briquets, fuel..... short tons.....	93, 177	¹ \$550, 160	49, 209	¹ \$256, 163
Cement..... barrels.....	² 28, 412, 975	² 30, 952, 302	² 16, 937, 209	² 16, 670, 336
Clay products.....		³ 23, 453, 227		³ 12, 012, 271
Clay, raw..... short tons.....	458, 820	¹ 1, 205, 609	208, 133	¹ 551, 609
Coal:				
Anthracite..... do.....	59, 645, 652	296, 354, 586	49, 855, 221	222, 375, 129
Bituminous..... do.....	97, 658, 698	155, 060, 000	74, 775, 862	100, 361, 000
Coke..... do.....	8, 380, 249	¹ 32, 458, 184	4, 544, 187	¹ 17, 260, 086
Copper ⁴ pounds.....	(⁵)	(⁵)	(⁵)	(⁵)
Feldspar (crude)..... long tons.....	(⁵)	(⁵)	25	171
Ferro-alloys..... do.....	173, 565	¹ 15, 067, 302	96, 247	¹ 6, 733, 066
Gems and precious stones.....		(⁵)		(⁵)
Gold ⁴ troy ounces.....	252	5, 200	80	1, 660
Iron ore:				
Sold to furnaces..... long tons.....	436, 920	913, 163	74, 420	157, 400
Sold for paint..... do.....	818	(⁵)	(⁵)	(⁵)
Iron, pig..... do.....	5, 099, 016	¹ 86, 877, 965	2, 069, 553	¹ 32, 764, 148
Lime..... short tons.....	497, 258	3, 378, 088	374, 244	2, 327, 131
Marl, calcareous..... do.....	(⁵)	(⁵)	(⁵)	(⁵)
Mineral paints, zinc and lead pigments..... do.....	(¹ ⁵)	(¹ ⁵)	(¹ ⁵)	(¹ ⁵)
Mineral waters..... gallons sold.....	(⁵)	(⁵)	(⁵)	(⁵)
Natural gas..... M cubic feet.....	74, 797, 000	37, 827, 000	61, 611, 000	32, 080, 000
Natural gasoline..... gallons.....	14, 339, 000	706, 000	11, 685, 000	535, 000
Peat..... short tons.....	(⁵)	(⁵)	(⁵)	(⁵)
Petroleum..... barrels.....	11, 892, 000	23, 550, 000	12, 412, 000	23, 400, 000
Sand and gravel..... short tons.....	8, 238, 926	6, 977, 246	5, 352, 078	3, 829, 686
Sand and sandstone (finely ground)..... do.....	(⁵)	(⁵)	(⁵)	(⁵)
Sand-lime brick..... thousands.....	(⁵ ⁵)	(⁵ ⁵)	(⁵ ⁵)	(⁵ ⁵)
Silver ⁴ troy ounces.....	2, 600	754	830	234
Slate.....		2, 791, 752		1, 355, 684
Stone..... short tons.....	⁷ 11, 123, 680	⁷ 11, 926, 265	⁷ 10, 842, 100	⁷ 9, 264, 631
Sulphuric acid (60° Baumé) ⁸ do.....	(¹ ⁵)	(¹ ⁵)	93, 834	¹ 713, 138
Talc..... do.....	(⁵)	(⁵)	(⁵)	(⁵)
Tripoli (rottenstone)..... do.....	(⁵)	(⁵)	103	3, 671
Miscellaneous ⁹		8, 337, 597		4, 663, 079
Total value, eliminating duplications.....		594, 642, 786		424, 734, 073

¹ Value not included in total value for State.

² Exclusive of natural cement in 1931 and of puzzolan and natural cement in 1932, value for which is included under "Miscellaneous."

³ Figures obtained through cooperation with Bureau of the Census.

⁴ Copper, gold, and silver were recovered from pyritiferous magnetite. The quantity of such ore was 488,788 short tons in 1931 and 69,811 short tons in 1932; it is included in the figures shown for iron ore.

⁵ Value included under "Miscellaneous."

⁶ No canvass.

⁷ Exclusive of marble, value for which is included under "Miscellaneous."

⁸ From zinc smelting.

⁹ Includes minerals indicated by "1," "3," and "4" above.

Mineral production of Rhode Island, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Clay products.....		(¹ ²)		(¹ ²)
Coke..... short tons.....	(¹ ³)	(¹ ³)	(¹ ³)	(¹ ³)
Lime..... do.....	2, 042	\$24, 846	1, 927	\$22, 410
Mineral waters..... gallons sold.....	(⁴)	(⁴)	(⁴)	(⁴)
Sand and gravel..... short tons.....	522, 480	168, 103	903, 807	132, 739
Stone..... do.....	129, 580	516, 053	41, 740	290, 547
Miscellaneous ⁵		1, 601, 221		1, 537, 186
Total value, eliminating duplications.....		792, 911		506, 325

¹ Value included under "Miscellaneous."

² Figures obtained through cooperation with Bureau of the Census.

³ Value not included in total value for State.

⁴ No canvass.

⁵ Exclusive of limestone, value for which is included under "Miscellaneous."

⁶ Includes minerals indicated by "1" and "3" above.

SUMMARY OF MINERAL PRODUCTION

A33

Mineral production of South Carolina, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Barite..... short tons.....			(1)	(1)
Clay products.....		² \$407,855		(1) (1) ²
Clay, raw..... short tons.....	80,480	³ 586,720	73,269	³ \$503,991
Gold..... troy ounces.....	23	470	71	1,468
Mica, sheet..... pounds.....	(1)	(1)		
Mineral waters..... gallons sold.....	(4)	(4)	(4)	(4)
Ore (dry and siliceous) (gold and silver)..... short tons.....			150	(5)
Sand and gravel..... do.....	582,308	191,782	(1)	(1)
Silver..... troy ounces.....	1	(9)	5	1
Stone..... short tons.....	1,721,720	2,431,320	450,150	717,095
Miscellaneous.....		32		232,129
Total value, eliminating duplications.....		3,031,459		950,693

¹ Value included under "Miscellaneous."

² Figures obtained through cooperation with Bureau of the Census.

³ Value not included in total value for State.

⁴ No canvass.

⁵ Not valued as ore; value of recoverable metal content included under the metals.

⁶ 29 cents.

Mineral production of South Dakota, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Cement..... barrels.....	(1)	(1)	(1)	(1)
Clay, raw..... short tons.....	650	² \$2,700	330	² \$2,475
Coal..... do.....	27,485	64,000	49,074	87,000
Columbite..... pounds.....	(1)	(1)		
Feldspar (crude)..... long tons.....	11,062	39,013	6,067	22,256
Gems and precious stones.....		(3)		(3)
Gold..... troy ounces.....	432,075	8,931,791	480,338	9,929,459
Gypsum..... short tons.....	(1)	(1)	(1)	(1)
Lead..... do.....			4	210
Lime..... do.....	2,682	29,000	(1)	(1)
Lithium minerals..... do.....	(1)	(1)	(1)	(1)
Mica:				
Scrap..... do.....	(1)	(1)		
Sheet..... pounds.....	(1)	(1)	852	149
Mineral waters..... gallons sold.....	(3)	(3)	(3)	(3)
Natural gas..... M cubic feet.....	12,000	4,000	10,000	4,000
Ores (crude), etc.:				
Dry and siliceous (gold and silver)..... short tons.....	1,404,153	(4)	1,409,893	(4)
Pumice..... do.....	600	12,000	(1)	(1)
Sand and gravel..... do.....	2,369,279	931,137	2,065,282	248,173
Sand-lime brick..... thousands.....	(15)	(15)	(15)	(15)
Silver..... troy ounces.....	113,562	32,933	126,195	35,587
Stone..... short tons.....	222,510	636,841	196,100	442,507
Tin (metallic equivalent)..... pounds.....	189	50	1,000	220
Miscellaneous.....		657,974		348,468
Total value, eliminating duplications.....		11,338,739		11,118,029

¹ Value included under "Miscellaneous."

² Value not included in total value for State.

³ No canvass.

⁴ Not valued as ore; value of recoverable metal content included under the metals.

⁵ Figures obtained through cooperation with Bureau of the Census.

⁶ Includes minerals indicated by "1" above.

Mineral production of Tennessee, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Aluminum..... pounds.....	(1 2)	(1 2)	(1 2)	(1 2)
Barite..... short tons.....	10, 170	\$62, 903	2, 825	\$15, 792
Cement..... barrels.....	3, 287, 966	3, 810, 271	1, 551, 750	1, 644, 446
Clay products.....		2, 003, 132		(1 2)
Clay, raw..... short tons.....	46, 941	2, 260, 793	35, 787	2, 151, 727
Coal..... do.....	4, 721, 548	6, 942, 000	3, 537, 882	4, 670, 000
Coke..... do.....	100, 513	2, 409, 647	83, 483	2, 204, 271
Copper..... pounds.....	(1)	(1)	(1)	(1)
Ferro-alloys..... long tons.....	(1 2)	(1 2)	(1 2)	(1 2)
Gold..... troy ounces.....	403	8, 325	160	3, 315
Iron ore..... long tons.....	8, 717	36, 156		
Iron, pig..... do.....	13, 094	2, 293, 111	4, 623	(1 2)
Iron sinter from copper sulphide ore..... do.....	(1)	(1)	(1)	(1)
Lead..... short tons.....	(1)	(1)	(1)	(1)
Lime..... do.....	113, 268	566, 694	106, 706	496, 200
Manganese ore..... long tons.....	70	(1)		
Mineral waters..... gallons sold.....	(4)	(4)	(4)	(4)
Natural gas..... M cubic feet.....	25, 000	9, 000	22, 000	8, 000
Ores (crude), etc.:				
Copper..... short tons.....	510, 838	(5)	221, 485	(5)
Lead-zinc..... do.....	11, 700	(5)	6, 000	(5)
Zinc..... do.....	767, 800	(5)	625, 400	(5)
Petroleum..... barrels.....	6, 000	5, 000	5, 000	4, 000
Phosphate rock..... long tons.....	343, 622	1, 545, 607	192, 747	766, 797
Pyrites..... do.....	(1)	(1)	(1)	(1)
Sand and gravel..... short tons.....	1, 824, 415	1, 089, 178	1, 830, 685	1, 136, 386
Silver..... troy ounces.....	41, 000	11, 890	19, 300	5, 443
Stone..... short tons.....	1, 552, 390	4, 109, 842	1, 235, 220	3, 121, 740
Sulphuric acid 6..... do.....	(1 2)	(1 2)	(1 2)	(1 2)
Tripoli..... do.....	(1)	(1)	(1)	(1)
Zinc..... do.....	(1)	(1)	(1)	(1)
Miscellaneous 7.....		18, 211, 797		11, 386, 708
Total value, eliminating duplications.....		24, 461, 447		14, 561, 792

1 Value included under "Miscellaneous."

2 Value not included in total value for State.

3 Figures obtained through cooperation with Bureau of the Census.

4 No canvass.

5 Not valued as ore: value of recoverable metal content included under the metals.

6 From copper smelting.

7 Includes minerals indicated by "1" above.

SUMMARY OF MINERAL PRODUCTION

A35

Mineral production of Texas, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Asphalt (native)..... short tons..	228, 956	\$705, 437	132, 636	\$312, 663
Briquets, fuel..... do.....	(1 2)	(1 2)	(1 2)	(1 2)
Cement..... barrels..	6, 265, 016	8, 280, 913	3, 797, 559	4, 862, 416
Clay products.....		2, 118, 949		3 777, 591
Clay, raw..... short tons..	21, 263	2 147, 476	28, 945	2 202, 304
Coal..... do.....	716, 020	1, 070, 000	636, 590	904, 000
Copper..... pounds.....			7, 000	441
Fuller's earth..... short tons..	35, 540	350, 809	49, 881	463, 374
Gems and precious stones.....		(4)		(4)
Gold..... troy ounces.....			9	179
Gypsum..... short tons..	239, 391	2, 120, 208	110, 360	1, 094, 092
Lead..... do.....			17	1, 020
Lime..... do.....	45, 553	384, 392	35, 903	340, 859
Manganese ore..... long tons..	155	(1)		
Mercury..... flasks (76 pounds).....	(1)	(1)	(1)	(1)
Mineral waters..... gallons sold.....	(4)	(4)	(4)	(4)
Natural gas..... M cubic feet.....	464, 580, 000	73, 704, 600	456, 832, 000	89, 066, 000
Natural gasoline..... gallons.....	426, 695, 000	11, 887, 000	371, 106, 000	8, 168, 000
Ores (crude), etc.:				
Copper..... short tons..			104	(5)
Lead..... do.....			81	(5)
Petroleum..... barrels..	332, 437, 000	170, 950, 000	312, 478, 000	259, 700, 000
Potassium salts..... short tons..			(1)	(1)
Salt..... do.....	103, 040	468, 562	139, 730	482, 118
Sand and gravel..... do.....	6, 081, 134	3, 809, 267	3, 909, 349	2, 213, 686
Sand-lime brick..... thousands.....	(1 2)	(1 2)	(1 2)	(1 2)
Silver..... troy ounces.....			1, 422	401
Stone..... short tons..	1, 347, 100	1, 285, 558	6 920, 070	6 1, 366, 243
Sulphur..... long tons..	1, 376, 524	24, 760, 739	1, 108, 112	19, 946, 016
Miscellaneous 7.....		331, 968		283, 275
Total value, eliminating duplications.....		302, 201, 046		389, 963, 183

1 Value included under "Miscellaneous."

2 Value not included in total value for State.

3 Figures obtained through cooperation with Bureau of the Census.

4 No canvass.

5 Not valued as ore; value of recoverable metal content included under the metals.

6 Exclusive of basalt, value for which is included under "Miscellaneous."

7 Includes minerals indicated by "1" and "6" above.

Mineral production of Utah, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Arsenious oxide.....short tons..	2,344	\$135,483	750	\$39,150
Asphalt (native).....do.....	(1)	(1)	25,980	527,516
Cement.....barrels.....	(1)	(1)	(1)	(1)
Clay products.....		² 329,051		(1 ³)
Clay, raw.....short tons.....	5,599	³ 10,894	12,731	³ 119,614
Coal.....do.....	3,350,044	7,442,000	2,852,127	5,685,000
Coke.....do.....	(1 ³)	(1 ³)	109,373	(1 ³)
Copper.....pounds.....	151,236,505	13,762,522	64,964,111	4,092,739
Diatomite.....short tons.....			5	25
Fuller's earth.....do.....	(1)	(1)	(1)	(1)
Gems and precious stones.....		(1)		(1)
Gold.....troy ounces.....	198,740	4,108,323	135,256	2,795,997
Gypsum.....short tons.....	22,178	133,533	(1)	(1)
Iron ore:				
Sold to furnaces.....long tons.....	183,668	(1)	136,874	(1)
Sold for paint.....do.....	400	(1)	(1)	(1)
Iron, pig.....do.....	(1 ³)	(1 ³)	(1 ³)	(1 ³)
Lead.....short tons.....	79,212	5,861,668	62,776	3,766,589
Lime.....do.....	18,192	172,534	9,092	93,060
Manganiferous ore.....long tons.....	1,501	16,601		
Natural gas.....M cubic feet.....	(1)	(1)	(1)	(1)
Ores (crude), etc.:				
Copper.....short tons.....	8,212,141	(1)	3,196,677	(1)
Copper-lead.....do.....	79	(1)	8	(1)
Dry and siliceous (gold and silver).....do.....	133,917	(1)	111,984	(1)
Lead.....do.....	140,960	(1)	88,780	(1)
Lead-zinc.....do.....	467,520	(1)	371,093	(1)
Petroleum.....barrels.....	(1)	(1)	(1)	(1)
Potassium salts.....short tons.....	(1)	(1)		
Salt.....do.....	74,010	159,778	61,230	132,930
Sand and gravel.....do.....	1,453,335	763,902	1,488,085	575,539
Silver.....troy ounces.....	8,290,966	2,404,380	6,962,097	1,963,311
Stone.....short tons.....	170,710	201,735	143,150	230,645
Sulphuric acid ⁴.....do.....	(1 ³)	(1 ³)	(1 ³)	(1 ³)
Uranium and vanadium ores.....do.....	(1)	(1)	(1)	(1)
Zinc.....do.....	37,291	2,834,081	29,666	1,779,957
Miscellaneous ⁷.....do.....		4,818,760		3,321,011
Total value, eliminating duplications.....		40,301,788		22,620,230

¹ Value included under "Miscellaneous."

² Figures obtained through cooperation with Bureau of the Census.

³ Value not included in total value for State.

⁴ No canvass.

⁵ Not valued as ore; value of recoverable metal content included under the metals.

⁶ From copper smelting.

⁷ Includes minerals indicated by "1" above.

Mineral production of Vermont, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Asbestos.....short tons.....	(1)	(1)	(1)	(1)
Clay products.....		(1 ³)		(1 ³)
Clay, raw.....short tons.....	(1 ³)	(1 ³)	(1 ³)	(1 ³)
Lime.....do.....	30,226	\$271,417	29,187	\$207,032
Micaceous minerals (mica schist).....do.....	(1)	(1)	(1)	(1)
Mineral waters.....gallons sold.....	(1)	(1)	(1)	(1)
Sand and gravel.....short tons.....	148,046	72,324	238,234	111,920
Scythstones.....do.....	(1)	(1)	(1)	(1)
Slate.....		1,508,518		885,543
Stone.....short tons.....	346,630	6,051,294	⁵ 267,010	⁵ 4,777,754
Talc.....do.....	38,424	318,322	30,361	250,130
Miscellaneous ⁶.....do.....		222,036		187,506
Total value, eliminating duplications.....		8,421,911		6,401,143

¹ Value included under "Miscellaneous."

² Figures obtained through cooperation with Bureau of the Census.

³ Value not included in total value for State.

⁴ No canvass.

⁵ Exclusive of unclassified stone, value for which is included under "Miscellaneous."

⁶ Includes minerals indicated by "1" and "6" above.

SUMMARY OF MINERAL PRODUCTION

37

Mineral production of Virginia, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Barite.....short tons.....	(1)	(1)	(1)	(1)
Briquets, fuel.....do.....	(1 ²)	(1 ²)	(1 ²)	(1 ²)
Cement.....barrels.....	(1)	(1)	(1)	(1)
Clay products.....		³ \$1,400,728		³ \$864,609
Clay, raw.....short tons.....	2,672	² 14,286	3,186	² 11,771
Coal.....do.....	9,698,680	14,060,000	7,692,180	9,280,000
Coke.....do.....	99,305	² 364,854	56,143	² 185,871
Feldspar (crude).....long tons.....	9,331	48,545	6,759	31,990
Ferro-alloys.....do.....	(1 ²)	(1 ²)	(1 ²)	(1 ²)
Gold.....troy ounces.....			31	637
Gypsum.....short tons.....	(1)	(1)	(1)	(1)
Iron, pig.....long tons.....	26,519	(1 ²)	1,710	(1 ²)
Lead.....short tons.....	(1)	(1)	(1)	(1)
Lime.....do.....	100,659	654,665	78,771	435,085
Manganese ore.....long tons.....	1,505	30,807	525	9,855
Marl, calcareous.....short tons.....	6,544	17,034	1,654	2,656
Mica:				
Scrap.....do.....	371	4,044	(1)	(1)
Sheet.....pounds.....	6,554	601	(1)	(1)
Millstones.....		500		1,200
Mineral waters.....gallons sold.....	(4)	(4)	(4)	(4)
Ores (crude), etc.:				
Dry and siliceous (gold and silver).....short tons.....			50	(5)
Lead-zinc.....do.....	(9)	(9)	300,723	(5)
Zinc.....do.....	6,700	(9)	4,000	(5)
Phosphate rock.....long tons.....			(1)	(1)
Pyrites.....do.....	(1)	(1)	(1)	(1)
Salt.....short tons.....	(1)	(1)	(1)	(1)
Sand and gravel.....do.....	1,229,683	809,432	1,089,609	620,542
Silver.....troy ounces.....			8	2
Slate.....		⁷ 185,638		⁷ 76,264
Stone.....short tons.....	3,044,530	2,907,238	⁸ 2,399,640	⁸ 2,704,009
Talc and soapstone.....do.....	(1)	(1)	(1 ⁹)	(1 ⁹)
Titanium minerals:				
Ilmenite.....do.....	(1)	(1)	(1)	(1)
Rutile.....do.....	(1)	(1)	(1)	(1)
Zinc.....do.....	(1)	(1)	(1)	(1)
Miscellaneous ¹⁰		7,897,812		3,524,304
Total value, eliminating duplications.....		26,150,041		16,927,446

1 Value included under "Miscellaneous."
2 Value not included in total value for State.
3 Figures obtained through cooperation with Bureau of the Census.
4 No canvass.
5 Not valued as ore; value of recoverable metal content included under the metals.
6 Bureau of Mines not at liberty to publish figures.
7 Exclusive of granules, etc., value for which is included under "Miscellaneous."
8 Includes in 1932 for the first time soapstone used as dimension stone; such soapstone in earlier years included under "Talc and soapstone."
9 Exclusive of soapstone used as dimension stone; such soapstone is included in 1932 for the first time in figures for stone.
10 Includes minerals indicated by "1" and "7" above.

Mineral production of Washington, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Asbestos.....short tons..	(1)	(1)	(1)	(1)
Briquets, fuel.....do.....	19,770	² \$136,258	(1 ²)	(1 ²)
Cement.....barrels..	(1)	(1)	(1)	(1)
Clay products.....		³ 1,503,238		³ \$722,583
Clay, raw.....short tons..	21,322	² 20,801	10,371	² 11,295
Coal.....do.....	1,846,461	5,800,000	1,691,426	4,759,000
Coke.....do.....	30,686	² 215,782	33,346	² 231,950
Copper.....pounds.....	202,503	18,423	5,524	348
Diatomite.....short tons..	779	11,186	465	6,015
Gold.....troy ounces..	2,904	60,035	5,082	105,057
Iron ore.....long tons..	1,032	(1)		
Lead.....short tons..	1,386	102,531	921	55,268
Lime.....do.....	20,619	215,033	18,862	199,617
Magnesite.....do.....	(1)	(1)	(1)	(1)
Magnesium sulphate (natural).....pounds.....			(1)	(1)
Mercury.....flasks (76 pounds).....	560	48,917	407	23,575
Mineral waters.....gallons sold..	(4)	(4)	(4)	(4)
Natural gas.....M cubic feet..	(1)	(1)	(1)	(1)
Ores (crude), etc.:				
Copper.....short tons..	5,063	(9)		
Dry and siliceous (gold and silver).....do.....	5,779	(9)	8,496	(9)
Lead.....do.....	239	(9)	353	(9)
Lead-zinc.....do.....	80,968	(9)	33,423	(9)
Pulpstones.....do.....	(1)	(1)	(1)	(1)
Sand and gravel.....do.....	3,195,156	1,405,551	5,158,240	1,687,217
Sand-lime brick.....thousands..	(1 ³)	(1 ³)	(1 ³)	(1 ³)
Silver.....troy ounces..	22,410	6,499	17,412	4,910
Stone.....short tons..	1,836,150	1,743,453	⁶ 2,483,090	⁶ 2,195,076
Tungsten ore (60 percent concentrates).....do.....	(1)	(1)	(1)	(1)
Zinc.....do.....	4,974	378,005	2,245	134,680
Miscellaneous ⁷.....do.....		3,507,732		2,981,444
Total value, eliminating duplications.....		14,800,608		12,816,678

¹ Value included under "Miscellaneous."
² Value not included in total value for State.
³ Figures obtained through cooperation with Bureau of the Census.
⁴ No canvass.
⁵ Not valued as ore; value of recoverable metal content included under the metals.
⁶ Exclusive of marble, value for which is included under "Miscellaneous."
⁷ Includes minerals indicated by "1" and "6" above.

Mineral production of West Virginia, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Briquets, fuel.....short tons.....	(1) ²	(1) ²	40,996	² \$157,792
Bromine.....pounds.....	(1)	(1)	(1)	(1)
Calcium chloride.....short tons.....	(1)	(1)	(1)	(1)
Cement.....barrels.....	(1)	(1)	(1)	(1)
Clay products.....		³ \$14,099,394		³ 9,557,550
Clay, raw.....short tons.....	27,415	² 41,342	12,240	² 17,549
Coal.....do.....	101,473,172	132,762,000	85,608,735	90,786,000
Coke.....do.....	1,378,666	² 3,204,644	951,479	² 2,147,431
Ferro-alloys.....long tons.....	(1) ²	(1) ²	(1) ²	(1) ²
Grindstones and pulpstones.....short tons.....	2,870	150,664	2,441	102,062
Iron, pig.....long tons.....	593,831	(1) ²	245,869	(1) ²
Lime.....short tons.....	170,420	985,687	82,757	427,241
Manganese ore.....long tons.....	29	(1)	(1)	(1)
Marl, calcareous.....short tons.....	(1)	(1)	(1)	(1)
Mineral waters.....gallons sold.....	(4)	(4)	(4)	(4)
Natural gas.....M cubic feet.....	124,797,000	58,123,000	100,540,000	44,557,000
Natural gasoline.....gallons.....	52,844,000	2,436,000	43,773,000	1,612,000
Petroleum.....barrels.....	4,472,000	7,070,000	3,876,000	6,050,000
Salt.....short tons.....	35,480	218,762	49,629	243,185
Sand and gravel.....do.....	2,128,786	2,118,434	1,151,986	1,171,377
Sand and sandstone (finely ground).....do.....	(1)	(1)	(1)	(1)
Stone.....do.....	2,467,050	2,380,694	⁵ 1,264,040	⁵ 1,312,551
Sulphuric acid ⁶.....do.....	(1) ²	(1) ²	(1) ²	(1) ²
Miscellaneous ⁷.....do.....	(1) ²	10,697,883	(1) ²	4,647,267
Total value, eliminating duplications.....		221,734,789		156,643,214

¹ Value included under "Miscellaneous."

² Value not included in total value for State.

³ Figures obtained through cooperation with Bureau of the Census.

⁴ No canvass.

⁵ Exclusive of unclassified stone, value for which is included under "Miscellaneous."

⁶ From zinc smelting.

⁷ Includes minerals indicated by "1" and "5" above.

Mineral production of Wisconsin, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Briquets, fuel.....short tons.....	(1) ²	(1) ²	258,631	² \$2,006,019
Cement.....barrels.....	(1)	(1)	(1)	(1)
Clay products.....		³ \$1,709,048		³ 1,398,883
Coke.....short tons.....	(1) ²	(1) ²	(1) ²	(1) ²
Iron ore:				
Sold to furnaces.....long tons.....	629,977	1,658,670	360,037	905,601
Sold for paint.....do.....	76	204		
Lead.....short tons.....	952	70,448	910	54,600
Lime.....do.....	42,621	372,244	27,283	209,868
Marl, calcareous.....do.....	735	735	(1)	(1)
Mineral paints, zinc and lead pigments.....do.....	(1) ²	(1) ²	(1) ²	(1) ²
Mineral waters.....gallons sold.....	(4)	(4)	(4)	(4)
Ores (crude), etc.:				
Lead-zinc.....short tons.....	318,700	(9)	310,300	(9)
Pyrites.....long tons.....	9,764	(1)	6,527	(1)
Sand and gravel.....short tons.....	5,151,686	1,960,984	3,620,710	1,307,299
Sand and sandstone (finely ground).....do.....	(1)	(1)	(1)	(1)
Sand-lime brick.....thousands.....	(1) ²	(1) ²	(1) ²	(1) ²
Silica (quartz).....short tons.....	(1)	(1)	(1)	(1)
Stone.....do.....	⁶ 2,627,140	⁶ 4,080,275	1,682,510	2,190,938
Sulphuric acid ⁷.....do.....	(1) ²	(1) ²	(1) ²	(1) ²
Talc.....do.....	3,583	11,646		
Zinc.....do.....	10,088	766,688	7,522	451,320
Miscellaneous ⁸.....do.....		7,585,526		3,656,731
Total value, eliminating duplications.....		11,843,343		7,414,456

¹ Value included under "Miscellaneous."

² Value not included in total value for State.

³ Figures obtained through cooperation with Bureau of the Census.

⁴ No canvass.

⁵ Not valued as ore; value of recoverable metal content included under the metals.

⁶ Exclusive of basalt, value for which is included under "Miscellaneous."

⁷ From zinc smelting.

⁸ Includes minerals indicated by "1" and "6" above.

440 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Mineral production of Wyoming, 1931 and 1932

Product	1931		1932	
	Quantity	Value	Quantity	Value
Cement.....barrels	(1)	(1)	(1)	(1)
Clay products.....do		(1 2)		(1 2)
Clay, raw.....short tons	16, 080	3 \$143, 969	13, 492	3 \$108, 177
Coal.....do	4, 993, 686	11, 996, 000	4, 170, 963	9, 317, 000
Copper.....pounds	9, 000	819	397	25
Gold.....troy ounces	(1) 56	1, 165	257	5, 305
Gypsum.....short tons	(1)	(1)	(1)	(1)
Iron ore.....long tons	180, 771	(1)		
Lead.....short tons			5	294
Mineral waters.....gallons sold	(4)	(4)	(4)	(4)
Natural gas.....M cubic feet	39, 770, 000	4, 153, 500	28, 933, 000	4, 064, 000
Natural gasoline.....gallons	51, 523, 000	1, 797, 000	44, 391, 000	1, 833, 000
Ores (crude), etc.:				
Copper.....short tons	18	(4)		
Dry and siliceous (gold and silver).....do	5	(4)	615	(4)
Lead.....do			25	(4)
Petroleum.....barrels	14, 834, 000	11, 120, 000	13, 418, 000	10, 942, 000
Phosphate rock.....long tons	1, 000	4, 500		
Sand and gravel.....short tons	(1)	(1)	1, 553, 338	507, 487
Silver.....troy ounces	17	5	195	55
Sodium sulphate from natural sources.....short tons	6, 490	29, 662	2, 128	11, 706
Stone.....do	6 167, 090	6 236, 696	6 309, 780	6 320, 378
Talc.....do			(7)	(7)
Miscellaneous 8		1, 553, 316		282, 038
Total value, eliminating duplications.....		30, 892, 663		27, 343, 288

1 Value included under "Miscellaneous."

2 Figures obtained through cooperation with Bureau of the Census.

3 Value not included in total value for State.

4 No canvass.

5 Not valued as ore; value of recoverable metal content included under the metals.

6 Exclusive of unclassified stone, value for which is included under "Miscellaneous."

7 Figures not available.

8 Includes minerals indicated by "1" and "6" above.

CLAY

(DETAILED STATISTICS)

By R. W. METCALF

PRODUCTION

The largest use for clay is in the manufacture of clay products. Clay for this purpose is widely distributed throughout the United States, and there are clay-working plants in every State. The tables of production that follow represent chiefly the clay that was mined and sold as clay, mined under royalty, or shipped into another State for fabrication; they do not include the clay that was burned into clay products by the producers themselves, unless it was mined under royalty or in a different State from that in which it was used. The quantity of clay thus sold is small compared with the total output and includes mainly clay used for making high-grade pottery and tile, paper, and refractory products. The values given for domestic production are f.o.b. mines or works; for imports, at the principal markets of the countries from which the clay was exported; and for exports, at the port of shipment.

Clay sold by producers in the United States, 1928-32, by kinds

Year	Kaolin or china clay and paper clay		Ball clay		Slip clay		Fire clay	
	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value
1928.....	496, 142	\$4, 088, 003	120, 878	\$984, 075	5, 699	\$30, 796	2, 785, 158	\$7, 480, 609
1929.....	518, 169	4, 281, 301	118, 190	987, 306	6, 369	33, 582	3, 178, 805	8, 107, 586
1930.....	533, 800	3, 893, 814	93, 488	739, 787	4, 398	26, 465	2, 547, 162	6, 070, 663
1931.....	443, 300	2, 946, 953	83, 007	639, 798	1, 916	13, 613	1, 473, 161	3, 741, 038
1932.....	344, 994	2, 011, 208	47, 573	312, 751	525	5, 105	725, 993	2, 057, 060

Year	Stoneware clay		Bentonite		Miscellaneous clay		Total	
	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value
1928.....	95, 626	\$207, 275	(1)	(1)	522, 829	\$1, 409, 981	4, 026, 332	\$14, 200, 739
1929.....	87, 456	181, 901	(1)	(1)	438, 031	1, 254, 068	4, 347, 020	14, 850, 744
1930.....	75, 832	146, 513	107, 405	\$858, 927	600, 818	785, 326	3, 962, 903	12, 521, 495
1931.....	57, 466	131, 915	78, 815	472, 045	381, 830	406, 823	2, 519, 495	8, 352, 185
1932.....	49, 736	82, 521	71, 613	503, 673	151, 382	229, 291	1, 391, 816	5, 201, 609

¹ Sales of bentonite included under "Miscellaneous clay" prior to 1930 when separate figures first became available.

Clay sold by producers in the United States in 1932, by States and kinds

State	Number of operators reporting sales	Kaolin or china clay and paper clay		Ball clay		Fire clay		Stoneware clay		Miscellaneous clay ¹		Total			
		Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value		
Alabama	11					33,629	\$47,155				119	\$24	33,748	\$47,179	
Arizona	1										6,096	22,000	6,096	22,000	
Arkansas	1					(²)	(²)				(²)	(²)	(²)	(²)	
California	40	244	\$3,191	(²)	(²)	66,815	147,656	(²)	(²)		49,404	116,804	117,461	272,059	
Colorado	12					24,537	34,379				16,992	15,238	41,529	49,617	
Connecticut	1					53	954						53	954	
Delaware	1	1,995	28,253										1,995	28,253	
Florida	2	(²)	(²)										(²)	(²)	
Georgia	2	234,244	1,196,988					90	\$90				234,334	1,197,078	
Idaho	3					456	5,401						456	5,401	
Illinois	15			583	\$5,353	35,620	90,783	9,544	17,100				45,747	113,236	
Indiana	12					41,186	34,609	200	270	41,949	19,234	83,335	54,113	137,448	
Iowa	6					858	7,255			2,575	2,099	3,433	9,364	11,800	
Kentucky	15			18,259	154,689	32,745	127,338					51,004	282,027	334,776	
Maine	3					(²)	(²)			(²)	(²)	85	1,309	1,394	
Maryland	17	625	938	(²)	(²)	4,314	25,208			(²)	(²)	12,614	53,912	66,526	
Massachusetts	7					(²)	(²)			(²)	(²)	425	5,265	5,690	
Michigan	3					(²)	(²)			(²)	(²)	76	904	980	
Minnesota	3							6,425	14,082	(²)	355	6,541	14,437	20,982	
Mississippi	1					(²)	(²)			(²)	(²)	76	904	980	
Missouri	3											6,541	14,437	20,982	
Montana	1											(²)	(²)	(²)	
Nebraska	29	150	1,145	434	3,381	125,406	499,002	(²)	875			126,490	504,403	630,893	
Nevada	2					250	1,673					1,199	2,291	2,490	
New Jersey	5									949	618	1,567	2,285	2,852	
New Mexico	2									5,787	6,748	12,535	15,235	17,773	
New York	3									641	3,891	4,532	5,423	6,354	
North Carolina	2							2,870	15,113	8,804	13,583	22,387	38,966	41,153	
North Dakota	4	6,857	102,865			1,070	5,408					62,114	248,582	253,990	
Ohio	2	2	30									266	1,559	1,825	
Oklahoma	46					2	43			(²)	(²)	707	11,959	12,666	
Oregon	2					118,305	241,058	11,615	14,055	250	500	7,107	103,365	110,472	
Pennsylvania	2									1	8	9	81	90	
South Carolina	57	13,417	54,082			118,305	241,058	11,615	14,055	223	1,875	130,143	256,988	260,131	
South Dakota	9	71,994	461,025			(²)	(²)	(²)	(²)	6,097	69,875	69,875	69,875	69,875	
Tennessee	2					(²)	(²)	(²)	(²)			(²)	(²)	(²)	
Texas	8					186,052	480,716	16,545	16,603	12,119	20,208	208,133	551,609	559,727	
Utah	1					1,275	42,966					73,269	503,991	505,266	
Vermont	6	(²)	(²)			19,602	112,102					330	2,475	2,805	
	1					8,415	31,831					7,770	7,794	15,564	
						6,250	6,250					27,977	196,054	203,024	209,274
						(²)	(²)			(²)	(²)	12,731	119,614	122,345	

Virginia.....	3	(?)	(?)			324	869			(?)	(?)	3,186	11,771
Washington.....	5					(?)	(?)	(?)	(?)	9,497	8,488	10,371	11,295
West Virginia.....	5					12,240	17,549					12,240	17,549
Wyoming.....	8					10	10			13,482	108,167	13,492	108,177
Undistributed.....		15,466	162,691	7,625	31,818	2,897	20,318	1,947	4,333	12,342	122,031	13,844	154,257
1932 { Total.....	407	344,994	2,011,208	47,578	312,751	³ 725,993	³ 2,057,060	49,736	82,521	⁴ 223,520	⁴ 738,069	1,391,816	5,201,609
Average value per ton.....			5.83		6.57		2.83		1.66				3.74
1931 { Total.....	435	443,300	2,946,953	83,007	639,798	⁵ 1,473,161	⁵ 3,741,038	57,466	131,915	⁶ 462,561	⁶ 892,481	2,519,495	8,352,185
Average value per ton.....			6.65		7.71		2.54		2.30				3.32

¹ Includes adobe, shale, etc. Slip clay and bentonite are also included in this column as a matter of statistical convenience.

² Included under "Undistributed."

³ These totals include 6,789 tons of diaspore and burley clay, valued at \$51,798, from Missouri.

⁴ These totals include 525 tons of slip clay, valued at \$5,105, from Michigan and New York and 71,613 tons of bentonite, valued at \$503,673, from Arizona, California, Nevada, Oklahoma, South Dakota, Texas, Utah, and Wyoming. Of the total bentonite California reported 21,145 tons, valued at \$89,831; Nevada, 150 tons, valued at \$700; Oklahoma, 5,798 tons, valued at \$68,382; South Dakota, 330 tons, valued at \$2,475; and Wyoming, 12,632 tons, valued at \$107,567.

⁵ These totals include 19,662 tons of diaspore and burley clay, valued at \$103,507, from Missouri.

⁶ These totals include 1,916 tons of slip clay, valued at \$13,613, and 78,815 tons of bentonite, valued at \$472,045.

Clay sold by producers in the United States in 1932, by uses, in short tons

Use	Kaolin	Ball clay	Slip clay	Fire clay	Stone-ware clay	Ben-tonite	Miscel-laneous clay	Total
White-bodied ware made from white-burning clays.....	21,849	26,484	-----	402	630	-----	146	49,511
Art pottery.....	1,254	1,536	-----	2	253	-----	252	3,297
High-grade tile.....	4,931	8,971	-----	28,078	833	-----	1,516	44,329
Chemical stoneware.....	-----	895	-----	188	1,517	-----	-----	2,400
Stoneware.....	-----	-----	201	6,298	46,197	-----	-----	52,696
Enameling.....	2	174	-----	-----	-----	-----	-----	176
Paper filler.....	206,665	-----	-----	46	-----	-----	110	206,821
Paper coating.....	23,624	-----	-----	-----	-----	-----	-----	23,624
Rubber.....	33,474	-----	-----	-----	-----	-----	-----	33,719
Oilcloth or linoleum.....	4,728	245	-----	-----	-----	-----	-----	5,326
Paint filler or extender.....	5,469	598	-----	118	-----	-----	223	5,830
Paint pigment.....	57	20	-----	-----	-----	-----	-----	361
Architectural terra cotta.....	-----	304	-----	-----	-----	-----	-----	304
Asbestos products.....	391	2,695	-----	10,303	38	-----	484	13,520
Plaster and plaster products.....	1,192	50	-----	385	-----	-----	15	841
Slip for glazing purposes.....	-----	-----	-----	372	-----	-----	304	1,868
Cement.....	12,394	426	-----	175	-----	290	56	231
Artificial lime.....	1,765	27	-----	2,054	-----	-----	35,117	50,281
Artificial abrasives.....	-----	41	324	74	-----	-----	-----	1,792
Crayons.....	122	-----	-----	-----	-----	-----	-----	439
Chemicals.....	339	-----	-----	100	-----	-----	-----	122
Saggers.....	864	272	-----	29,134	-----	-----	-----	439
Pins, stilts, and spurs for potters' use.....	-----	-----	-----	465	-----	-----	-----	30,270
Wads.....	-----	4,594	-----	4,503	-----	-----	-----	465
Gas retorts.....	-----	-----	-----	131	-----	-----	-----	9,097
Fire brick and block.....	14,806	-----	-----	282,670	256	-----	107	131
Fire-clay mortar.....	7,699	-----	-----	121,052	-----	-----	-----	297,839
Bauxite and high-alumina brick.....	-----	-----	-----	2,700	-----	-----	-----	128,731
Glasshouse pots.....	-----	-----	-----	19,200	77	-----	950	2,700
Glasshouse supplies, blocks, tiles, etc.....	390	-----	-----	-----	-----	-----	-----	20,227
Zinc retorts and condensers.....	-----	-----	-----	397	-----	-----	7	794
Clay crucibles.....	-----	-----	-----	6,288	-----	-----	-----	6,288
Graphite crucibles and stoppers.....	-----	-----	-----	176	-----	-----	-----	176
Foundries, steel works, etc.....	1,850	-----	-----	76	-----	-----	-----	76
Unspecified ¹	1,129	241	-----	103,790	-----	7,256	3,662	116,558
Total, 1932.....	344,994	47,573	525	725,993	49,736	71,613	151,382	1,391,816
Total, 1931.....	443,300	83,007	1,916	1,473,161	57,466	78,815	381,830	2,519,495

¹ Includes clay for building brick, cement mortar, conduits, converters, cosmetics, face brick, filtering or decolorizing oil, flowerpots, flue lining, glazed brick, hollow building tile, insecticides, insulation, modeling, packing hoofs of horses, peanut coating, polish, roofing tile, rotary-drilling mud, sewer pipe, stopping clay, stove lining, taxidermy, turpentine cups, and water softener.

IMPORTS AND EXPORTS¹*Clay imported for consumption in the United States, 1928-32*

Year	Kaolin or china clay		Common blue and Gross-Almerode glass-pot clay		All other clays				Total	
	Short tons	Value	Short tons	Value	Unwrought		Wrought		Short tons	Value
					Short tons	Value	Short tons	Value		
1928....	307,304	\$2,962,269	10,259	\$90,742	51,163	\$429,788	1,653	\$23,564	370,379	\$3,506,36
1929....	279,981	2,700,296	28,008	268,011	49,324	420,689	12,283	154,158	369,596	3,543,154
1930....	236,251	2,197,540	18,900	154,428	24,883	209,175	14,984	143,817	285,018	2,704,960
1931....	151,426	1,056,393	15,183	116,446	15,615	125,326	8,376	237,859	190,600	1,536,024
1932....	99,807	461,191	5,880	45,445	13,290	90,140	8,133	280,404	127,110	877,180

¹ Includes "clays or earths, artificially activated with acid or other material," as follows: 1930 (June 18 to Dec. 31), 2,663 short tons, valued at \$100,779; 1931, 4,912 tons, \$184,381; 1932, 7,328 tons, \$267,560; not separately classified prior to change in tariff.

Domestic clay exported from the United States, 1928-32

Year	Fire clay		All other		Total	
	Short tons	Value	Short tons	Value	Short tons	Value
1928.....	60,138	\$494,241	60,911	\$896,350	121,049	\$1,390,591
1929.....	76,561	588,770	76,789	1,117,312	153,350	1,706,082
1930.....	62,660	519,788	73,870	1,108,586	136,530	1,628,374
1931.....	45,314	329,112	61,389	915,743	106,703	1,244,855
1932.....	22,086	228,073	59,273	826,550	81,359	1,054,623

¹ Figures on imports and exports compiled by C. Galihier, of the Bureau of Mines, from records of the Bureau of Foreign and Domestic Commerce.



MICA

(DETAILED STATISTICS)

By F. W. HORTON AND B. H. STODDARD¹

Domestic mica sold or used by producers in the United States, 1928-32

Year	Sheet mica						Scrap mica		Total	
	Uncut punch mica		Uncut mica larger than punch		Total uncut sheet mica		Short tons	Value	Short tons	Value
	Pounds	Value	Pounds	Value	Pounds	Value				
1928	1,468,482	\$90,931	213,295	\$140,025	1,681,777	\$230,956	7,760	\$132,422	8,601	\$363,378
1929	1,752,044	98,989	283,084	187,332	2,035,128	286,321	6,253	117,901	7,271	404,222
1930	1,253,782	61,230	211,703	116,077	1,465,485	177,307	6,732	109,100	7,465	286,407
1931	757,647	33,317	205,306	78,513	962,953	111,830	6,621	99,415	7,102	211,245
1932	258,512	7,976	80,485	37,906	338,997	45,882	7,040	83,777	7,209	129,659

Mica sold or used by producers in chief producing States, 1928-32

State and year	Sheet mica						Scrap mica		Total	
	Uncut punch mica		Uncut mica larger than punch		Total uncut sheet mica		Short tons	Value	Short tons	Value
	Pounds	Value	Pounds	Value	Pounds	Value				
New Hampshire:										
1928	727,775	\$45,354	46,368	\$18,116	774,143	\$63,470	1,291	\$25,232	1,678	\$88,702
1929	913,552	48,885	71,226	33,772	984,778	82,657	1,657	35,977	2,149	118,634
1930	616,204	29,275	56,860	24,029	673,064	53,304	449	8,743	786	62,047
1931	349,168	17,342	91,996	19,026	441,164	36,368	295	5,465	516	41,835
1932	121,487	3,607	24,527	14,371	146,014	17,978	344	5,585	417	23,563
North Carolina:										
1928	640,585	33,326	136,810	96,380	777,395	129,706	4,419	69,638	4,808	199,344
1929	737,473	40,081	156,727	110,212	894,200	150,293	3,245	53,855	3,692	204,148
1930	610,216	30,567	138,858	81,884	749,074	112,451	4,744	75,400	5,119	187,851
1931	310,366	12,894	79,060	38,763	389,426	51,657	5,312	79,601	5,507	131,258
1932	85,803	2,906	41,893	15,416	127,696	18,322	4,837	56,842	4,901	75,164

Range of prices per pound for domestic rough-trimmed uncut sheet mica in 1932

Size	Clear	Stained	Size	Clear	Stained
Punch	\$0.03-\$0.04	\$0.02-\$0.03	3 by 4 inches	\$0.80-\$1.25	\$0.60-\$1.05
1½ by 2 inches	.10-.20	.08-.15	3 by 5 inches	1.00-1.45	.90-1.25
2 by 2 inches	.25-.38	.10-.30	4 by 6 inches	1.25-1.75	1.00-1.50
2 by 3 inches	.30-.70	.20-.50	6 by 8 inches	2.00-2.50	1.40-1.75
3 by 3 inches	.80-.90	.40-.80	8 by 10 inches	3.00	(*)

* None reported for 1932.

¹ Figures on imports and exports compiled by C. Galiber, of the Bureau of Mines, from records of the Bureau of Foreign and Domestic Commerce.

Grading of Indian mica

Grade	Area of usable mica (in square inches), based on rectangular sizes	Sizes of rectangles that can be cut (in inches)				Approximate corresponding sizes in United States classification (in inches)
		Width		Length		
		Minimum	Maximum	Minimum	Maximum	
6.....	1 to 2%					Punch
5½.....	2½ to 2%					1½ by 2
5.....	3 to 5%	1	2	2	2½	2 by 2
4.....	6 to 9%	1½	2½	2½	3	2 by 3
3.....	10 to 14%	1½	3	3	4½	3 by 3
2.....	15 to 23%	1½	3½	4½	6	3 by 4
1.....	24 to 35%	3	5	5	7	3 by 5
A-1.....	36 to 47%	4	6	7	9	4 by 6
Special.....	48 to 59%					5 by 8
Extra special.....	60 to 79%					6 by 8
Extra extra special.....	80 and over.....					8 by 8
						8 by 10

Ground mica sold in the United States, 1928-32, by methods of grinding

Year	Dry ground		Wet ground		Total	
	Pounds	Value	Pounds	Value	Pounds	Value
1928.....	5,743,052	\$95,151	6,633,965	\$358,458	12,377,017	\$453,609
1929.....	3,637,192	62,029	5,395,005	328,332	9,032,197	390,361
1930 ¹	11,912,232	190,635	3,149,545	161,623	15,061,777	352,258
1931 ¹	10,724,952	168,783	4,888,100	267,653	15,613,052	436,436
1932 ¹	10,505,884	126,714	4,903,962	184,126	15,409,846	310,840

¹ Includes sales of mica suitable for roofing purposes without grinding.

Ground mica sold to various industries in the United States in 1932

Industry	Quantity		Value
	Pounds	Percent of total	
Roofing ¹	8,766,375	57	\$93,967
Wall paper.....	3,503,497	23	135,806
Rubber.....	1,336,518	9	44,987
Fancy paint.....	1,116,200	7	19,533
Miscellaneous ²	687,256	4	16,547
	15,409,846	100	310,840

¹ Includes sales of mica suitable for roofing purposes without grinding.

² Figures cover mica used for molded electric insulation, surfacing on asphalt shingles, ornamental tile, Christmas-tree snow, manufacture of axle greases and oil, annealing, concrete and foundry facing, pipeline enamel, plastic specialties, and other purposes.

Mica splittings consumed in the United States, 1928-32, by sources

Year	India		Canada		Madagascar		South America		United States	
	Pounds	Value	Pounds	Value	Pounds	Value	Pounds	Value	Pounds	Value
1928.....	2,508,035	\$977,530	381,131	\$145,859	253,048	\$170,555	(1)	(1)	(1)	(1)
1929.....	2,969,224	2,012,974	506,712	237,832	285,403	197,438	(1)	(1)	20,948	\$1,645
1930.....	2,450,642	1,064,160	422,221	125,330	163,017	75,647				
1931.....	1,713,954	648,169	163,091	52,258	162,545	63,443			6,500	802
1932.....	671,647	193,854	73,810	13,655	157,528	61,321			(2)	(2)

¹ Bureau of Mines not at liberty to publish figures.

² Small quantity of domestic splittings included under India.

*Total stocks of mica splittings on hand December 31, 1932*¹

	Pounds	Value		Pounds	Value
Indian.....	1,360,196	\$391,506	Madagascan.....	268,909	\$114,290
Canadian.....	188,029	54,436	South American.....	(²)	(²)

¹ No figures available for earlier years.² Bureau of Mines not at liberty to publish figures.*Mica imported for consumption in the United States in 1932, by kinds*

Kind	Pounds	Value
Unmanufactured:		
Waste and scrap, valued at not more than 5 cents per pound.....	2,720,731	\$11,908
Unrimmed phlogopite mica from which rectangular pieces not exceeding in size 1 inch by 2 inches may be cut.....	34,308	2,166
Other:		
Valued at not above 15 cents per pound.....	119,872	13,965
Valued at above 15 cents per pound.....	95,831	50,457
	2,970,742	78,496
Manufactured:		
Cut mica.....	23,097	16,824
Films and splittings:		
Not cut or stamped to dimensions:		
Not above 12 ten-thousandths of an inch in thickness.....	927,305	174,789
Over 12 ten-thousandths of an inch in thickness.....	16,781	9,833
Cut or stamped to dimensions.....	542	298
Mica plates and built-up mica.....	12,956	6,871
All manufactures of which mica is the component material of chief value.....	1,287	173
Mica ground or pulverized.....	111,771	383
	1,093,739	209,171
	4,064,481	287,667

Mica imported into the United States in 1932, by kinds and by countries

[General imports]

Country	Unmanufactured								Manufactured											
	Waste and scrap, valued at not more than 5 cents per pound (duty 25 percent)		Untrimmed phlogopite mica from which rectangular pieces not exceeding in size 1 inch by 2 inches may be cut (duty 15 percent)		Other				Cut mica (duty 40 percent)	Films and splittings				Cut or stamped to dimensions (duty 45 percent)	Mica plates and built-up mica (duty 40 percent)	All manufactures of which mica is the component material of chief value (duty 40 percent)		Mica ground or pulverized (duty 20 percent)		
					Valued at not above 15 cents per pound (duty 4 cents per pound)		Valued at above 15 cents per pound (duty 4 cents per pound + 25 percent)			Not cut or stamped to dimensions		Cut or stamped to dimensions (duty 45 percent)								
					Pounds	Value	Pounds	Value		Pounds	Value	Pounds	Value							Pounds	Value	Pounds	Value
Africa:																				
Madagascar.....											50,881	\$6,919								
Mozambique.....	1,060	\$95,676																		
Union of South Africa.....	233,770	889																		
Argentina.....					4,251	\$544	10,322	\$2,780												
Brazil.....	7,275	27			10,891	963	18,704	9,487												
Canada.....	747,000	3,209	205	\$12	1,665	164	50	14	15	\$27	97,088	22,694								
Ceylon.....					245	149														
France.....					1,058	125	3,170	1,795	126	292	99,813	20,662	42	\$135						
Germany.....					2,196	1,997	6,706	7,955	7,977	7,955	6,250	941			4,687	\$3,967			75	\$39
India, British.....	671,987	2,107			100,125	11,596	32,584	19,294	14,439	7,977	599,731	84,006	15,300	\$9,274	500	163			1,100	94
Italy.....											4,000	649								
Japan.....																				
Soviet Russia in Europe.....																				
United Kingdom.....					8,944	1,009	41,044	17,631	2,282	1,155	8,750	1,759	1,481	559			8,269	2,904	112	40
	2,720,731	11,908	205	12	126,934	14,401	108,315	53,147	23,568	17,406	866,513	137,630	16,781	9,833	542	298	12,956	6,871	1,287	173

Mica and manufactures of mica exported in 1932 amounted to 3,098,737 pounds, valued at \$132,755. As the classes of mica are not shown in export schedules, it is impossible to state what kinds of mica are exported.

Mica and manufactures of mica exported from the United States in 1932, by countries

Country	Pounds	Value	Country	Pounds	Value
North America:			Europe—Continued.		
Bermudas.....	45	\$36	France.....	34,212	\$2,487
Canada.....	1,921,594	49,311	Germany.....	136,033	6,132
Central America:			Italy.....	5,374	4,348
British Honduras.....	36	13	Netherlands.....	3,291	3,467
Guatemala.....	6	6	Soviet Russia.....	5,334	8,460
Honduras.....	3	16	Spain.....	386	634
Nicaragua.....	28	23	Sweden.....	267	70
Panama.....	177	426	United Kingdom.....	779,890	37,337
Salvador.....	1	2	Asia:		
Mexico.....	4,249	2,715	Ceylon.....	91	16
Miquelon and St. Pierre			China.....	1,186	834
Islands.....	48	17	East Indies:		
Newfoundland and Labra-			British:		
dor.....	32	42	India.....	360	246
West Indies:			Netherland.....	238	272
British:			Japan (including Chosen).....	9,200	1,944
Jamaica.....	39	90	Persia.....	44	10
Other.....	1	8	Philippine Islands.....	211	421
Cuba.....	743	1,424	Siam.....	15	18
Dominican Republic.....	45	34	Africa:		
Netherland.....	4	62	British:		
South America:			Union of South Africa.....	575	334
Argentina.....	6,392	1,075	Portuguese:		
Bolivia.....	79	109	Mozambique.....	20	4
Brazil.....	689	861	Oceania:		
Chile.....	37	126	British:		
Colombia.....	17	57	Australia.....	400	11
Ecuador.....	71	59	New Zealand.....	18	55
Peru.....	12	38	French.....	5	12
Uruguay.....	10	40			
Venezuela.....	9	16			
Europe:				3,098,737	132,755
Belgium.....	187,220	9,043			

World production of mica, 1928-32, in metric tons

[Compiled by M. T. Latus, of the Bureau of Mines]

Country	1928	1929	1930	1931	1932
North America:					
Canada (sales).....	3,320	3,677	1,061	1,214	280
Guatemala.....	113	11	(²)	(²)	(²)
United States (sales).....	7,803	6,596	6,772	6,443	6,540
South America:					
Argentina ³	120	119	100	51	55
Bolivia ¹	11	2	15	1	8
Brazil ¹	44	45	52	54	42
Colombia.....			15	(²)	(²)
Europe:					
Italy.....				12	9
Norway ¹	85	59	53	48	103
Russia ⁴	266	(²)	(²)	(²)	(²)
Sweden.....	12	66	73	65	(²)
Asia:					
Ceylon.....		(⁵)		2	2
Chosen.....	29	26	29	18	20
India, British ⁶	4,850	5,897	4,212	2,691	(²)
Russia ⁴	1,227	(²)	(²)	(²)	(²)
Africa:					
Kenya Colony and Protectorate.....	(⁵)	2			(²)
Madagascar ⁷	861	380	348	235	(²)
Rhodesia:					
Northern.....	4	3	4	1	
Southern.....	186	172	164	67	13
Tanganyika Territory.....	34	29	21	9	12
Union of South Africa (Transvaal) (sales).....	3,419	1,464	501	477	250
Oceania:					
Australia:					
New South Wales.....		3			
Northern Territory (Central Australia).....	23	24	26	28	30
South Australia.....	2			2	

¹ Exports.² Data not available.³ Rail and river shipments.⁴ Year ended Sept. 30.⁵ Less than 1 ton.⁶ Exports. The figures for output are incomplete, and a more accurate idea of the size of the industry is to be obtained from the export figures. (Rec. Geol. Surv. of India, vol. 59, pt. 3, p. 273. Calcutta, 1926.) Output is reported as follows: 1928, 2,292 tons; 1929, 2,704 tons; 1930, 2,679 tons; 1931, 1,979 tons.⁷ Exports reported as follows: 1928, 635 tons; 1929, 427 tons; 1930, 397 tons; 1931, 120 tons.

SLATE

(DETAILED STATISTICS)

By OLIVER BOWLES AND A. T. COONS ¹

Slate sold by producers in the United States, 1928-32, by uses

[Value is at point of shipment]

Year	Roofing slate		Mill stock		Other uses (value) ¹	Total	
	Squares (100 square feet)	Value	Square feet	Value		Short tons (approximate)	Value
1928	483,280	\$5,411,332	9,220,170	\$3,408,304	\$2,652,655	646,360	\$11,472,291
1929	462,120	4,920,766	9,936,480	3,702,145	2,622,267	670,070	11,245,178
1930	340,140	3,359,939	7,917,220	2,755,530	1,796,149	463,610	7,911,618
1931	277,700	2,364,861	5,794,380	1,754,054	1,379,421	368,420	5,498,336
1932	144,410	1,072,255	2,840,020	810,443	1,221,602	284,240	3,104,300

¹ Chiefly slate granules.

Roofing slate, mill stock,^a and slate granules (including slate "flour") sold by producers in the United States, 1931 and 1932, by uses

Use	1931		1932	
	Quantity	Value	Quantity	Value
Roofing	277,700	\$2,364,861	144,410	\$1,072,255
Approximate equivalent in short tons	103,210		56,140	
Electrical	492,640	333,032	155,410	120,514
Approximate equivalent in short tons	4,000		1,330	
Structural and sanitary	1,648,200	622,699	966,940	322,858
Approximate equivalent in short tons	13,820		8,000	
Grave vaults and covers	392,180	92,830	340,860	79,956
Approximate equivalent in short tons	3,610		3,170	
Blackboards and bulletin boards	2,357,070	640,593	1,137,800	260,766
Approximate equivalent in short tons	6,230		2,940	
Billiard-table tops	110,730	48,663	55,310	22,931
Approximate equivalent in short tons	980		510	
School slates	1,483,600	16,237	345,230	3,418
Approximate equivalent in square feet	793,560		183,700	
Approximate equivalent in short tons	800		220	
Flagstones, walkways, etc.	765,620	66,904	289,450	23,786
Approximate equivalent in short tons	5,790		2,180	
Granules and "flour"	229,980	1,312,517	209,750	1,197,816
Total (quantities approximate, in short tons)	368,420	5,498,336	284,240	3,104,300

^a Mill stock sold, including school slates, was as follows: 1931, 5,794,380 square feet, valued at \$1,754,054; 1932, 2,840,020 square feet, valued at \$810,443.

¹ Figures on imports and exports compiled by C. Galiher, of the Bureau of Mines, from records of the Bureau of Foreign and Domestic Commerce, except as otherwise indicated.

14 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Slate sold by producers in the United States in 1932, by States and uses

State	Operators	Roofing		Mill stock		Other uses (value) ¹	Total value
		Squares (100 square feet)	Value	Square feet	Value		
Arkansas.....	2	(?)	(?)	-----	-----	(?)	(?)
California.....	4	(?)	(?)	-----	-----	(?)	\$27,542
Georgia.....	2	(?)	(?)	-----	-----	(?)	(?)
Maine.....	3	2,280	\$19,697	115,780	\$85,495	-----	105,192
Maryland.....	2	(?)	(?)	-----	-----	(?)	(?)
New York.....	18	2,050	19,675	7,000	4,000	\$243,813	267,488
Pennsylvania.....	36	86,550	492,917	2,546,840	632,711	230,056	1,355,684
Vermont.....	40	43,260	439,892	170,400	88,237	357,414	885,543
Virginia.....	4	7,870	76,264	-----	-----	(?)	(?)
Undistributed ²	-----	2,400	23,810	-----	-----	390,319	462,851
Total, 1932.....	111	144,410	1,072,255	2,840,020	810,443	1,221,602	3,104,300
Total, 1931.....	120	277,700	2,364,861	5,794,380	1,754,054	1,379,421	5,498,336

¹ For details see preceding table of general sales and following table for Pennsylvania.

² Included under "Undistributed."

³ Includes output of States entered as (?) above.

Slate sold by producers in Pennsylvania in 1932, by counties and uses

County	Operators	Roofing slate		Mill stock ¹			
		Squares (100 square feet)	Value	Structural and sanitary ²		Electrical	
				Square feet	Value	Square feet	Value
Lehigh.....	9	11,540	\$55,952	68,610	\$16,204	26,000	\$14,425
Northampton and York ³	27	75,010	436,965	1,072,140	312,349	3,360	2,649
Total, 1932.....	36	86,550	492,917	1,140,750	328,553	29,360	17,074
Total, 1931.....	37	183,600	1,254,080	1,771,760	550,005	95,130	44,420

County	Mill stock—Continued				Other (value) ⁴	Total value
	Blackboards and bulletin boards		School slates			
	Square feet	Value	Square feet	Value		
Lehigh.....	288,970	\$54,645	183,700	\$3,418	-----	\$144,644
Northampton and York ³	848,830	206,121	-----	-----	\$252,956	1,211,040
Total, 1932.....	1,137,800	260,766	183,700	3,418	252,956	1,355,684
Total, 1931.....	2,357,070	640,593	793,560	16,237	286,417	2,791,752

¹ Exclusive of billiard-table material, value for which is included under "Other."

² Includes slate for grave covers and vaults.

³ York County produced roofing granules and "flour" only.

⁴ In 1931 includes 104,560 square feet of billiard-table material, valued at \$45,446; in 1932 includes 55,230 square feet of billiard-table material, valued at \$22,900.

Crushed slate (granules and flour) sold by producers in the United States, 1928-32

Year	Granules		Flour		Total	
	Short tons	Value	Short tons	Value	Short tons	Value
1928.....	(¹)	(¹)	(¹)	(¹)	413, 980	\$2, 468, 471
1929.....	395, 830	\$2, 321, 330	33, 110	\$176, 413	428, 940	2, 497, 743
1930.....	255, 070	1, 549, 301	34, 630	146, 116	289, 700	1, 695, 417
1931.....	198, 450	1, 182, 684	31, 530	129, 833	229, 980	1, 312, 517
1932.....	174, 140	1, 058, 713	35, 610	139, 103	209, 750	1, 197, 816

¹ Not reported separately.*Value of slate imported for consumption in the United States, 1928-32*

1928.....	\$44, 778	1931.....	\$46, 581
1929.....	95, 073	1932.....	17, 317
1930.....	48, 065		

Slate imported into the United States, 1931 and 1932, by countries and uses

[General imports]

Country	1931					1932				
	Not manufactured		Manufactured			Total value	Manufactured ¹			
	Cubic feet	Value	Roofing		Other uses (value)		Roofing		Other uses (value)	Total value
			Square feet	Value			Square feet	Value		
Czechoslovakia.....					\$1, 986			\$2, 902	\$2, 902	
Denmark.....					100					
France.....			4, 000	\$405	405					
Germany.....					2, 463					
Hong Kong.....								13	13	
Italy.....			69, 873	2, 884	33, 539	36, 423	5, 168	\$519	9, 353	
Japan.....					75	75		220	9, 872	
Norway.....	3, 562	\$1, 088	21, 500	850	1, 892	3, 830	7, 350	155	220	
United Kingdom.....					572	572	63, 691	3, 773	155	
	3, 562	1, 088	95, 373	4, 139	40, 627	45, 854	76, 209	4, 447	12, 488	
									3, 773	
									16, 935	

¹ No imports of unmanufactured material reported for 1932.*Roofing slate exported from the United States, 1928-32*

Year	Number of squares	Value	Year	Number of squares	Value
1928.....	12, 236	\$119, 187	1931.....	4, 174	\$45, 020
1929.....	10, 376	121, 367	1932.....	1, 792	12, 215
1930.....	5, 278	64, 343			

16 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Roofing slate exported from the United States, 1930-32, by countries

Country	1930		1931		1932	
	Number of squares	Value	Number of squares	Value	Number of squares	Value
Australia.....	137	\$1,000				
Bermudas.....					4	\$75
Canada.....	4,010	54,069	3,405	\$37,816	1,487	11,124
Mexico.....	79	475			1,242	1,320
New Zealand.....	256	2,175	262	1,795	59	696
Panama.....	7	53	50	1,166		
Philippine Islands.....	60	899				
United Kingdom.....	605	4,362	300	2,341		
West Indies:						
British: Trinidad and Tobago.....	66	648	66	562		
Cuba.....	47	479				
Dominican Republic.....	2	30				
Haiti.....			91	1,340		
Netherland.....	9	153				
	5,278	64,343	4,174	45,020	1,792	12,215

¹ Reported as "surfaced roofing."

Slate other than roofing exported from the United States, 1930-32, by uses ¹

Use	1930		1931		1932	
	Quantity	Value	Quantity	Value	Quantity	Value
School slates.....cases ² ..	16,280	\$95,935	11,470	\$57,746	2,886	\$17,975
Electrical slate.....square feet..	18,830	20,406	6,950	4,026	780	777
Blackboards.....do.....	177,760	59,810	183,130	62,883	55,394	16,973
Billiard tables.....do.....	15,760	9,802	25,730	12,480	13,214	6,128
Structural.....do.....	12,670	5,280	20,360	6,930	2,499	1,100
Slate granules and "flour".....short tons..	27,540	162,000	13,880	79,000	(³)	(³)
		353,233		223,065		³ 42,958

¹ Collected by the Bureau of Mines from shippers of the products named.

² Cases weigh 130 to 165 pounds each; average is 135 pounds.

³ Figures for granules and flour not available.

GYP SUM

(DETAILED STATISTICS)

By C. GALIHER AND R. W. METCALF

SUMMARY

Salient statistics on gypsum and gypsum products in the United States, 1928-32

	1928	1929	1930	1931	1932
Crude gypsum:					
Mined.....short tons..	5, 102, 250	5, 016, 132	3, 471, 393	2, 559, 017	1, 416, 274
Imported:					
Short tons.....	1, 028, 816	1, 036, 385	902, 358	713, 880	374, 072
Value.....	\$1, 340, 920	\$1, 060, 874	\$916, 663	\$713, 313	\$346, 766
Gypsum and gypsum products sold by domestic plants:¹					
Crude gypsum:					
Short tons.....	1, 120, 751	1, 149, 378	1, 083, 106	851, 443	516, 136
Value.....	\$2, 351, 280	\$2, 428, 758	\$2, 277, 404	\$1, 882, 557	\$1, 216, 388
Average value per ton.....	\$2. 10	\$2. 11	\$2. 10	\$2. 21	\$2. 36
Gypsum products:					
For building purposes:					
Short tons.....	4, 198, 478	² 3, 926, 784	² 2, 641, 873	³ 2, 058, 121	³ 1, 145, 097
Value.....	\$35, 877, 860	² \$35, 229, 772	² \$31, 740, 539	³ \$26, 227, 225	³ \$16, 088, 875
Average value per ton.....	\$8. 55	² \$8. 97	² \$12. 01	³ \$12. 74	³ \$14. 05
For manufacturing uses:					
Short tons.....	248, 827	² 255, 533	² 197, 665	³ 74, 265	³ 48, 664
Value.....	\$1, 913, 729	² \$1, 808, 941	² \$1, 630, 528	³ \$610, 882	³ \$488, 043
Average value per ton.....	\$7. 69	² \$7. 08	² \$8. 28	³ \$8. 23	³ \$10. 03
Total gypsum products sold:					
Short tons.....	4, 447, 305	4, 182, 317	2, 839, 538	2, 132, 386	1, 193, 761
Value.....	\$37, 791, 589	\$37, 038, 713	\$33, 377, 067	\$26, 838, 107	\$16, 576, 918
Average value per ton.....	\$8. 50	\$8. 86	\$11. 75	\$12. 59	\$13. 89
Gypsum products imported:					
Short tons ⁴	7, 508	5, 409	7, 708	7, 364	3, 302
Value ⁴	\$200, 876	\$152, 509	\$174, 456	\$113, 198	\$47, 313
Gypsum and gypsum products exported:					
Crude, crushed, or ground:					
Short tons.....	2, 365	4, 230	3, 603	4, 502	3, 580
Value.....	\$23, 764	\$30, 870	\$22, 918	\$37, 816	\$18, 931
Plaster board and wall board:					
Square feet.....	15, 216, 727	18, 420, 455	16, 677, 518	6, 386, 649	1, 981, 685
Value.....	\$403, 227	\$442, 983	\$431, 072	\$157, 897	\$46, 175
Plaster, calcined, and manuf- actures, n.e.s.:					
Short tons.....	16, 423	24, 579	20, 008	6, 773	1, 339
Value.....	\$392, 984	\$481, 316	\$397, 810	\$196, 724	\$72, 094

¹ Produced from rock of both domestic and foreign origin.

² Some gypsum products (from imported rock) for manufacturing uses included with those for building purposes.

³ Calcined gypsum sold for miscellaneous uses and to other manufacturers included with that for building purposes.

⁴ Value includes that of manufactured plaster of paris for which weight is not recorded.

PRODUCTION AND SALES

Gypsum mined and uncalcined and calcined gypsum sold or used by producers in the United States, 1928-32

Year	Number of operators	Total quantity mined (short tons)	Sold or used by producers				Total value
			Without calcining		Calcined		
			Short tons	Value	Short tons	Value	
1928.....	58	5,102,250	999,412	\$1,902,034	3,641,385	\$30,134,129	\$32,036,163
1929.....	59	5,016,132	1,065,697	2,096,779	3,361,580	29,196,190	31,292,969
1930.....	56	3,471,393	989,591	1,886,254	2,191,376	25,165,230	27,051,484
1931.....	54	2,559,017	773,185	1,565,367	1,593,753	19,235,990	20,801,357
1932.....	53	1,416,274	444,816	929,567	890,495	11,976,719	12,906,286

Gypsum mined and uncalcined and calcined gypsum sold or used by producers in the United States in 1932, by States

State	Number of operators	Total quantity mined (short tons)	Sold or used by producers				Total value
			Without calcining		Calcined		
			Short tons	Value	Short tons	Value	
California.....	4	49,997	14,145	\$55,825	(¹)	(¹)	(¹)
Iowa.....	7	178,087	63,931	91,267	105,788	\$1,377,147	\$1,468,414
Kansas.....	2	56,054	18,140	22,995	26,699	303,271	326,266
Michigan.....	5	248,542	92,243	174,648	140,402	1,924,392	2,099,040
Nevada.....	4	80,938	32,344	89,991	41,963	340,007	429,998
New York.....	10	408,208	134,246	282,041	271,114	3,931,752	4,213,793
Texas.....	5	110,360	21,412	63,835	82,435	1,030,257	1,094,092
Other States ²	16	284,088	68,355	148,965	* 222,094	* 3,069,893	* 3,274,683
	53	1,416,274	444,816	929,567	890,495	11,976,719	12,906,286

¹ Included under "Other States."

² Arizona, Colorado, Montana, Ohio, Oklahoma, South Dakota, Utah, Virginia, and Wyoming.

³ This figure includes also sales from California.

Crude gypsum and gypsum products made from domestic crude gypsum sold or used by producers in the United States, 1931 and 1932, by uses

Use	1931		1932	
	Short tons	Value	Short tons	Value
Without calcining:				
To portland cement mills.....	664,305	\$1,266,146	386,266	\$751,650
For agriculture.....	28,350	138,725	15,664	89,086
For other purposes ¹	80,530	160,496	42,886	88,831
Total without calcining.....	773,185	1,565,367	444,816	929,567
Calcined:				
For building purposes:				
Base-coat plasters.....	759,784	6,070,031	468,181	3,962,376
Sanded plasters.....	99,449	501,761	44,026	337,145
Finished plasters.....	82,371	794,289	39,341	445,930
Molding plasters.....	58,773	541,857	29,592	313,454
Keenes cement.....	27,449	394,219	14,607	217,549
Plaster board and lath.....	² 133,329	2,411,730	³ 69,547	1,314,562
Wall board.....	³ 219,367	6,735,040	³ 119,332	4,342,063
Partition tile.....	⁴ 102,232	716,873	⁴ 36,586	262,587
Insulating materials.....	4,688	76,211	1,688	26,589
Other building purposes ⁵	28,929	304,836	15,250	213,064
Total for building purposes.....	1,516,371	18,636,847	832,150	11,435,319
For manufacturing uses:				
To plate-glass works.....	24,865	122,127	12,173	99,672
To terra cotta works.....	6,160	43,299	1,588	12,615
For other manufacturing uses ⁶	18,255	249,251	27,044	308,913
Total for manufacturing uses.....	49,280	414,677	40,805	421,200
For other purposes⁷.....	28,102	184,466	17,540	120,200
Total calcined.....	1,593,753	19,235,990	890,495	11,976,719
Grand total value.....		20,801,357		12,906,286

¹ Includes gypsum sold for filler, for insulating materials, and rock dust.

² 1931: 166,654,196 square feet; 1932: 86,321,679 square feet.

³ 1931: 270,416,778 square feet; 1932: 154,481,024 square feet.

⁴ 1931: 19,478,632 square feet; 1932: 6,594,387 square feet.

⁵ Includes joint filler, pyrofill, "roof tile" and "other tile", structolite, and stucco for roof construction.

⁶ Includes gypsum for casting and for dental work, hydrocal, and "orthopedic" gypsum.

⁷ Includes calcined gypsum sold to other manufacturers and for miscellaneous uses.

Keenes cement sold by producers in the United States, 1928-32

Year	Manu- factur- ers	Short tons	Value	Year	Manu- factur- ers	Short tons	Value
1928.....	6	54,020	\$848,504	1931.....	5	27,449	\$394,219
1929.....	6	52,330	767,621	1932.....	4	14,607	217,549
1930.....	4	39,446	571,044				

20 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Calcined gypsum used in products by producers in the United States in 1932, by States and uses, in short tons

State	Board	Tile	Plaster	Other products	Total
Iowa.....	(1)	(1)	58,206	(1)	(1)
Kansas.....			15,777	14,479	30,256
Michigan.....	(1)	(1)	56,316	(1)	(1)
New York.....	75,535	23,740	139,324	5,954	244,553
Texas.....	11,694	1,180	65,499		78,373
Other States ²	³ 84,688	³ 16,021	218,441	³ 8,533	³ 442,205
	171,917	40,941	553,563	28,966	795,387

¹ Included under "Other States."

² Arizona, California, Colorado, Indiana (crude gypsum from Michigan), Montana, Nevada, Ohio, Oklahoma, South Dakota, Utah, Virginia, and Wyoming.

This figure includes also gypsum used in Iowa and Michigan.

Calcining kettles and kilns reported by gypsum producers in the United States in 1932, by States

State	Number of producers	Kettles		Rotary kilns ¹		Total daily ca acity (short tons)
		Number	Daily ca acity (short tons)	Number	Daily ca acity (short tons)	
California.....	3	8	790			790
Iowa.....	6	28	4,844			4,844
Kansas.....	2	4	290	3	315	605
Michigan.....	5	22	2,666	1	240	2,906
New York.....	6	22	3,215	8	3,260	6,475
Texas.....	4	23	1,968			1,968
Other States ²	18	49	5,795	6	2,240	8,035
Total, 1932.....	44	156	19,568	18	6,055	25,623
Total, 1931.....	43	164	20,003	25	8,140	28,143

¹ Includes vertical kilns reported in Utah.

² Arizona, Colorado, Indiana (crude gypsum from Michigan), Montana, Nevada, Ohio, Oklahoma, South Dakota, Utah, Virginia, and Wyoming.

FOREIGN TRADE¹

Crude gypsum imported into the United States, 1930-32, by countries

[General imports]

Country	1930		1931		1932	
	Short tons	Value	Short tons	Value	Short tons	Value
Canada.....	824,964	\$837,296	667,614	\$671,985	358,589	\$332,908
Hong Kong.....			1	20		
Italy.....					6	39
Mexico.....	77,394	79,367	46,265	41,308	15,477	13,819
	902,358	916,663	713,880	713,313	374,072	346,766

¹ Figures on imports and exports (unless otherwise indicated) compiled by C. Galher, of the Bureau of Mines, from records of the Bureau of Foreign and Domestic Commerce.

Gypsum imported for consumption in the United States, 1928-32

Year	Crude		Ground or calcined		Manufactured plaster of paris (value)	Keenes cement		Total value
	Short tons	Value	Short tons	Value		Short tons	Value	
1928-----	1,028,816	\$1,340,920	6,907	\$99,833	\$87,814	601	\$13,729	\$1,541,796
1929-----	1,036,385	1,060,874	4,979	69,703	71,479	430	11,327	1,213,383
1930-----	902,358	916,663	6,562	75,959	61,322	1,146	37,175	1,091,119
1931-----	713,880	713,313	7,236	73,361	36,825	128	3,012	826,511
1932-----	374,072	346,766	3,250	28,323	17,948	52	1,042	394,079

Crude gypsum imported and uncalcined and calcined gypsum, from imported rock, sold or used in the United States, 1928-32, as reported to the Bureau of Mines by the importers

Year	Number of importers	Crude imported (short tons)	Sold or used by the importer				Total value
			Without calcining		Calcined		
			Short tons	Value	Short tons	Value	
1928-----	8	954,000	121,339	\$449,246	805,920	\$7,657,460	\$8,106,706
1929-----	8	1,017,791	83,681	331,979	820,737	7,842,523	8,174,502
1930-----	8	794,970	93,515	391,150	648,162	8,211,837	8,602,987
1931-----	8	630,892	78,258	317,190	538,633	7,602,117	7,919,307
1932-----	14	351,723	71,320	286,821	303,266	4,600,199	4,887,020

Imported crude gypsum and gypsum products made from imported crude gypsum sold or used in the United States, 1931 and 1932, by uses, as reported to the Bureau of Mines by the importers

Use	1931		1932	
	Short tons	Value	Short tons	Value
Without calcining:				
To portland cement mills-----	48,326	\$161,563	35,545	\$86,249
For agriculture-----	17,353	93,648	31,760	166,944
For other purposes-----	12,579	61,979	4,015	33,628
Total without calcining-----	78,258	317,190	71,320	286,821
Calcined:				
For building purposes:				
Base-coat plasters-----	273,071	2,614,718	164,036	1,554,590
Sanded plasters-----	37,858	253,645	18,519	136,991
Finished plasters-----	69,996	1,027,489	34,169	487,117
Molding plasters-----	23,595	418,465	11,732	178,733
For other building purposes-----	109,128	3,091,595	66,951	2,175,925
Total for building purposes-----	513,648	7,405,912	295,407	4,533,356
For manufacturing uses ¹ -----	24,985	196,205	7,859	66,843
Total calcined-----	538,633	7,602,117	303,266	4,600,199
Grand total value-----		7,919,307		4,887,020

¹ Includes plaster board and lath, wall board, partition tile, other tile, insulating materials, and other building purposes.
² Includes gypsum sold to terra cotta works, to potteries, for other manufacturing uses, and to other gypsum manufacturers.

Gypsum and gypsum products exported from the United States, 1928-32

Year	Crude, crushed, or ground		Plaster board and wall board		Plaster, calcined, and manufactures, n.e.s.	
	Short tons	Value	Square feet	Value	Short tons	Value
1928.....	2,365	\$23,764	15,216,727	\$403,227	16,423	\$392,984
1929.....	4,230	30,870	18,420,455	442,983	24,579	481,316
1930.....	3,603	22,918	16,677,518	431,072	20,008	397,810
1931.....	4,502	37,816	6,386,649	157,897	6,773	196,724
1932.....	3,580	18,931	1,981,685	46,175	1,339	72,094

WORLD PRODUCTION

World production of gypsum, 1928-32, by countries, in metric tons

[Compiled by M. T. Latus, of the Bureau of Mines]

Country ¹	1928	1929	1930	1931	1932
Algeria.....	79,874	107,221	94,780	91,120	(?)
Argentina ²	41,606	36,630	49,458	39,473	32,527
Australia:					
New South Wales.....	12,761	10,585	2,914	1,766	2,481
South Australia.....	93,004	97,148	41,482	24,596	45,684
Victoria.....	10,728	13,407	5,902	1,590	2,951
Western Australia.....	4,282	5,374	1,606	1,226	3,706
Austria ⁴	45,000	43,000	37,350	48,000	36,000
Canada.....	1,189,895	1,111,956	997,942	800,931	(?)
Chile.....	9,113	15,434	17,178	13,173	(?)
China.....	⁶ 50,000	51,500	62,100	71,500	(?)
Cuba.....	23,950	25,400	27,200	(?)	(?)
Cyprus ⁸	11,609	12,757	10,452	9,934	10,995
Egypt ⁶	130,000	130,000	130,000	130,000	130,000
Estonia.....	7,982	8,093	1,963	7,851	8,299
France.....	2,202,730	2,557,950	3,055,420	2,832,280	(?)
Germany:					
Bavaria.....	54,482	} ⁹ 845,000	} ⁹ 705,000	} ⁹ 490,000	} ⁹ 398,500
Prussia.....	452				
Other States.....	(?)				
Greece.....			1,365	3,200	(?)
India, British.....	59,998	53,572	57,220	54,493	(?)
Italy.....	640,587	683,755	685,530	587,845	529,821
Japan.....	68,515	(?)	(?)	(?)	(?)
Latvia ¹⁰	28,020	26,875	35,272	31,431	36,812
Luxemburg.....	2,506	7,206	10,619	9,263	9,403
New Caledonia.....	15,000	7,116	3,131	11,550	11,900
Palestine.....	1,341	1,499	1,661	491	1,481
Peru.....	20,148	¹¹ 15,299	¹¹ 14,000	8,000	(?)
Poland.....	(?)	(?)	40,000	24,000	(?)
Rumania.....	47,785	76,625	51,252	53,003	(?)
Russia ¹²	411,365	(?)	(?)	(?)	(?)
Spain.....	1,054,018	975,662	1,582,604	827,282	697,230
Sweden.....	116	122	135	50	(?)
Tunisia.....	16,000	19,540	20,000	(?)	26,000
Union of South Africa.....	14,871	17,245	17,098	14,847	7,113
United Kingdom:					
Great Britain.....	644,831	981,566	851,468	767,011	1,011,399
Northern Ireland.....	17	1,453	193	(?)	41
United States.....	4,628,659	4,550,635	3,149,178	2,321,489	1,284,815
Yugoslavia ¹³	1,170	2,340	1,463	836	(?)
	11,600,000	13,000,000	12,200,000	9,800,000	(?)

¹ Gypsum is also produced in Switzerland where large beds are privately worked, but no statistics are available.

² Data not available.

³ Rail and river shipments.

⁴ Estimate furnished by Bundesministerium für Handel und Verkehr.

⁵ Data for crude gypsum mined not available. Shipments of crude (lump, crushed, and ground) and calcined gypsum amounted to 397,915 tons.

⁶ Approximate production.

⁷ Data not available; estimate included in World total.

⁸ Exports of crude and calcined gypsum.

⁹ Figures supplied by Engineer Louis Martin, manager, Bauberatungstelle der deutschen Gips-Industrie e. v., Arnstadt, Germany.

¹⁰ Exports.

¹¹ Sales and shipments.

¹² Year ended Sept. 30.

¹³ Serbia only.

*Gypsum trade in Canada, 1930-32*¹

	1930		1931		1932	
	Short tons	Value	Short tons	Value	Short tons	Value
Production (shipments):						
By classes:						
Crude:						
Lump or run-of-mine.....	56,628	\$116,401	47,147	\$103,396	98,672	\$114,504
Crushed.....	845,210	973,623	693,764	791,910	268,645	314,336
Fine ground.....	8,160	38,894	4,418	21,392	1,826	10,459
Calcined.....	160,970	1,689,870	118,423	1,194,819	69,486	641,080
	1,070,968	2,818,788	863,752	2,111,517	438,629	1,080,379
By Provinces:						
Nova Scotia.....	827,063	982,287	707,817	878,487	341,508	398,861
New Brunswick.....	82,674	513,677	58,957	451,264	(?)	(?)
Ontario.....	94,946	776,069	53,358	374,469	(?)	(?)
Manitoba.....	34,157	298,297	23,076	231,124	(?)	(?)
British Columbia.....	32,128	248,458	20,544	176,173	(?)	(?)
	1,070,968	2,818,788	863,752	2,111,517	438,629	1,080,379
Imports:						
Crude gypsum.....	898	25,882	484	13,491	55	1,381
Ground, not calcined.....	219	5,352	158	4,476	171	3,434
Calcined.....	16,608	190,832	11,050	120,516	1,384	31,165
	17,725	222,066	11,692	138,483	1,610	35,980
Exports:						
Crude gypsum.....	719,381	871,567	618,765	741,376	372,314	470,247
Plaster of paris, prepared wall plaster.....	7,281	119,092	3,086	50,774	799	13,979
	726,662	990,659	621,851	792,150	373,113	484,226

¹ Report on the Mineral Production of Canada, Ottawa.² Data not available.

PHOSPHATE ROCK

(DETAILED STATISTICS)

By BERTRAND L. JOHNSON AND B. H. STODDARD ¹

Salient statistics of the phosphate-rock industry in the United States, 1930-32

	1930		1931		1932	
	Long tons	Value	Long tons	Value	Long tons	Value
Mined.....	3,951,353	(¹)	2,577,535	(¹)	1,739,197	(¹)
Sold or used by producers:						
Florida:						
Land pebble.....	² 3,166,318	² \$10,273,076	1,990,806	\$6,756,428	³ 1,402,334	³ \$4,382,344
Soft rock.....	(¹)	(¹)	13,436	65,118	10,083	24,017
Hard rock.....	81,753	517,229	57,224	380,540	57,579	373,251
Total Florida.....	3,248,071	10,790,305	2,061,466	7,202,086	1,469,976	4,779,612
Tennessee.....	611,045	2,938,525	343,622	1,545,607	⁴ 193,666	⁴ 776,367
Idaho.....	59,932	234,543	60,978	234,781	23,172	103,243
Montana.....	6,005	27,457	67,893	301,511	20,090	79,271
Virginia.....					(¹)	(¹)
Wyoming.....	1,339	6,000	1,000	4,500		
Total United States.....	3,926,392	13,996,830	2,534,959	9,288,485	1,706,904	5,738,493
Imports.....	32,658	377,177	13,496	162,517	⁵ 12,982	⁵ 93,847
Exports.....	1,225,722	5,630,547	951,305	4,277,070	613,035	2,795,654
Consumption, apparent ⁶	2,733,323	(¹)	1,597,150	(¹)	1,106,851	(¹)
Stocks in producers' hands, Dec. 31:						
Florida.....	800,000	(¹)	733,400	(¹)	923,230	(¹)
Tennessee.....	168,000	(¹)	207,650	(¹)	⁴ 203,580	(¹)
Other.....	740	(¹)	1,920	(¹)	3,040	(¹)
Total stocks.....	968,740	(¹)	942,970	(¹)	1,129,850	(¹)

¹ No figures available.

² Small quantity of soft rock included with land pebble.

³ Includes small quantity of tailings.

⁴ Virginia included with Tennessee.

⁵ Includes imports of Russian apatite.

⁶ Quantity sold or used by producers plus imports minus exports.

Phosphate rock mined in the United States, 1928-32, by States, in long tons

Year	Florida	Tennessee	Western States	Total
1928.....	2,905,826	573,601	43,803	3,523,230
1929.....	3,125,941	653,265	42,634	3,821,840
1930.....	3,261,539	618,341	71,473	3,951,353
1931.....	2,076,803	370,070	130,662	2,577,535
1932.....	1,497,419	[*] 201,317	40,461	1,739,197

^{*} Includes small quantity of apatite from Virginia.

¹ Figures on imports and exports compiled by C. Galihier, of the Bureau of Mines, from records of the Bureau of Foreign and Domestic Commerce.

Phosphate rock sold or used by producers in the United States, 1928-32

Year	Long tons	Value	Year	Long tons	Value
1928.....	3,501,406	\$12,443,179	1931.....	2,534,959	\$9,288,485
1929.....	3,760,855	13,153,259	1932.....	1,706,904	5,738,493
1930.....	3,926,392	13,996,830			

Florida phosphate rock sold or used by producers, 1928-32

Year	Hard rock			Soft rock		
	Long tons	Value at mines		Long tons	Value at mines	
		Total	Average		Total	Average
1928.....	95,918	\$383,672	\$4.00	(1)	(1)	(1)
1929.....	72,424	267,218	3.69	(1)	(1)	(1)
1930.....	81,753	517,229	6.33	(1)	(1)	(1)
1931.....	57,224	380,540	6.65	13,436	\$65,118	\$4.85
1932.....	57,579	373,251	6.48	10,063	24,017	2.39

Year	Land pebble			Total		
	Long tons	Value at mines		Long tons	Value at mines	
		Total	Average		Total	Average
1928.....	2,787,528	\$9,040,350	\$3.24	2,883,446	\$9,424,022	\$3.27
1929.....	3,015,874	9,633,856	3.19	3,088,298	9,901,074	3.21
1930.....	3,166,318	10,273,076	3.24	3,248,071	10,790,305	3.32
1931.....	1,990,806	6,756,428	3.39	2,061,466	7,202,086	3.49
1932.....	1,402,334	4,382,344	3.13	1,469,976	4,779,612	3.25

¹ Soft rock included with land pebble.
² Includes small quantity of tailings.

Tennessee phosphate rock¹ sold or used by producers, 1928-32

Year	Long tons	Value at mines		Year	Long tons	Value at mines	
		Total	Average			Total	Average
		1928.....	577,095			\$2,856,850	\$4.95	1931.....	343,622	$1,545,607	$4.50
1929.....	633,939	3,097,104	4.89	1932.....	193,666	776,367	4.01
1930.....	611,045	2,938,525	4.81				

¹ Separate figures for brown rock and blue rock cannot be given without disclosing confidential data regarding blue-rock production.
² Includes small quantity of apatite from Virginia.

Western States phosphate rock sold or used by producers, 1928-32

Year	Idaho			Montana			Wyoming			Total		
	Long tons	Value at mines		Long tons	Value at mines		Long tons	Value at mines		Long tons	Value at mines	
		Total	Average		Total	Average		Total	Average		Total	Average
1928....	37,477	\$147,908	\$3.95	40	\$400	\$10.00	3,388	\$14,399	\$4.25	40,865	\$162,307	\$3.97
1929....	35,899	141,931	3.95	40	400	10.00	2,679	12,750	4.76	38,618	155,081	4.02
1930....	59,932	234,543	3.91	6,065	27,457	4.57	1,339	6,000	4.48	67,276	268,000	3.98
1931....	60,978	234,781	3.85	67,893	301,511	4.44	1,000	4,500	4.50	129,871	540,792	4.16
1932....	23,172	103,243	4.46	20,090	79,271	3.95				43,262	182,514	4.22

PHOSPHATE ROCK

27

Phosphate rock sold by producers, 1931 and 1932, for consumption in the United States, by major uses, in long tons

Use	1931	1932	Use	1931	1932
Superphosphates.....	1,335,236	858,657	Stock and poultry feed.....	2,572	211
Phosphates, phosphoric acid, and ferrophosphorus..	232,908	222,617	Undistributed.....	6,430	7,355
Direct application to soil...	21,597	7,033		1,629,925	1,115,540
Fertilizer filler.....	31,182	19,667			

Phosphate rock, produced in the United States, shipped in 1932, by grades

B.P.L. ¹ content (percent)	Long tons	B.P.L. ¹ content (percent)	Long tons
Below 60.....	(²)	75 minimum.....	106,391
60 to 66.....	3,291	77 basis, 76 minimum.....	51,705
68 basis, 66 minimum.....	371,428	77 minimum.....	63,659
68 minimum.....	(²)	78 basis, 76 minimum.....	(²)
69 minimum.....	(²)	Above 85 (apatite).....	(²)
70 basis, 69 minimum.....	(²)	Undistributed.....	136,054
70 minimum.....	342,283		
72 minimum.....	311,462		
75 basis, 74 minimum.....	320,631	Total value.....	1,706,904
			\$5,738,493

¹ Bone phosphate of lime.

² Included under "Undistributed"; Bureau of Mines not at liberty to publish figures.

Average value f.o.b. mine shipping point per long ton of phosphate rock shipped, 1928-32

[From reports of producers]

Year	Florida		Tennessee ¹	Western States			Total
	Hard rock	Land pebble		Idaho	Montana	Wyoming	
1928.....	\$4.00	\$3.24	\$4.95	\$3.95	-----	\$4.25	\$3.97
1929.....	3.69	² 3.19	4.89	3.95	\$10.00	4.76	4.02
1930.....	6.33	² 3.24	4.81	3.91	4.57	4.48	3.98
1931.....	6.65	3.39	4.50	3.85	4.44	4.50	4.16
1932.....	6.48	³ 3.13	3.98	4.46	3.95	-----	4.22

¹ Chiefly brown rock.

² Includes soft rock.

³ Includes small quantity of tailings.

Phosphate rock, crude, imported into the United States, 1928-32, by countries

Country	1928		1929		1930		1931		1932	
	Long tons	Value	Long tons	Value	Long tons	Value	Long tons	Value	Long tons	Value
Canada.....	104	\$3,284	741	\$14,144	830	\$16,278	-----	-----	-----	-----
Cuba.....	11,752	141,544	6,000	73,972	6,360	72,797	-----	-----	-----	-----
France.....	(¹)	5	-----	-----	-----	-----	-----	-----	-----	-----
Germany.....	-----	-----	-----	-----	-----	-----	-----	-----	25	\$160
Morocco, French.....	20,572	103,199	16,400	96,102	6,000	30,000	-----	-----	-----	-----
Netherlands.....	-----	-----	180	2,060	-----	-----	-----	-----	-----	-----
Oceania: French.....	13,371	183,170	19,348	261,411	19,417	257,742	12,985	\$161,219	6,300	69,741
Soviet Russia in Europe.....	-----	-----	-----	-----	51	360	511	1,298	² 6,607	² 23,808
United Kingdom.....	-----	-----	-----	-----	-----	-----	-----	-----	50	138
West Indies: Netherlands.....	13	36	2,250	21,482	-----	-----	-----	-----	-----	-----
	45,812	431,238	44,899	469,171	32,658	377,177	13,496	162,517	12,982	93,847

¹ Less than 1 ton.

² Apatite.

Phosphatic fertilizers (other than crude phosphate rock) imported for consumption in the United States, 1928-32

Fertilizer	1928		1929		1930		1931		1932	
	Long tons	Value	Long tons	Value	Long tons	Value	Long tons	Value	Long tons	Value
Bone dust, or animal carbon, and bone ash, fit only for fertilizing.....	82,460	\$2,566,686	55,877	\$1,624,483	59,680	\$1,474,500	48,979	\$1,080,348	30,118	\$508,802
Guano.....	22,584	1,046,834	45,905	2,202,709	40,431	1,655,886	13,849	503,861	24,231	489,992
Slag, basic, ground or unground.....	2,822	31,879	3,998	54,456	3,913	54,463	1,464	15,903	2,189	21,005

Phosphate rock, ground or unground, not acidulated, exported from the United States, 1928-32

Year	Long tons		Value		Year	Long tons		Value	
	1928	1929	1928	1929		1931	1932	1931	1932
1928.....	898,764		\$4,453,101		1931.....	951,305		\$4,277,070	
1929.....	1,142,746		5,386,919		1932.....	613,035		2,795,654	
1930.....	1,225,722		5,630,547						

Phosphate rock, ground or unground, not acidulated, exported from the United States, 1928-32, by countries

HIGH-GRADE ROCK

Country	1928		1929		1930		1931		1932	
	Long tons	Value	Long tons	Value	Long tons	Value	Long tons	Value	Long tons	Value
Australia.....					946	\$10,406				
Belgium.....	9,000	\$63,000	7,100	\$48,700	14,930	97,145	17,625	\$114,562	7,100	\$46,150
Canada.....	3,559	26,488	3,140	25,517	2,187	21,237	66,993	359,396	29,469	156,652
Cuba.....	49,318	331,419	21,936	153,831	15,652	107,539	12,325	83,649	9,590	67,130
Lithuania.....					8,400	54,600	4,200	27,300	11,500	80,500
Mexico.....			3	43						
Netherlands.....	11,425	79,975	10,465	72,605	4,125	28,087	4,150	29,050	1,650	11,550
Norway.....	2,100	14,700	2,200	15,400						
Panama.....					2	43				
Poland and Danzig.....	3,600	25,200	9,500	66,500					2,500	16,250
Sweden.....	10,700	74,900	13,130	90,435	19,750	128,375			4,200	27,300
	89,702	615,682	67,474	473,031	65,992	447,432	105,293	613,957	66,009	405,532

LAND PEBBLE AND OTHER

Belgium.....	25,492	\$128,313	29,102	\$141,765	16,705	\$85,522	4,403	\$16,211		
Canada.....	18,666	119,519	25,244	192,222	45,561	303,410	54,519	260,029	18,723	\$94,830
China.....			3,599	12,897						390
Czechoslovakia.....	12,157	65,108	17,196	77,702	9,901	54,449			27	
Cuba.....	3,000	15,300								
Estonia.....	15,947	73,721	35,287	161,660	28,991	126,991	25,006	112,537	21,337	90,483
France.....			3,600	12,600					2,197	9,144
Germany.....			2,200	6,622	1,502	4,806				
India (British).....	166,931	803,549	246,748	1,110,183	281,547	1,216,147	172,728	697,167	68,058	311,280
Irish Free State.....			1,403	5,261	1,403	5,261				
Italy.....			10,456	44,653	10,456	44,653	3,300	12,243		
Japan.....	96,256	513,526	122,224	589,656	96,169	464,181	62,327	289,906	65,523	292,173
Latvia.....	183,815	656,839	230,548	827,316	287,372	1,051,927	220,389	830,486	143,446	520,095
Lithuania.....	12,206	62,885	16,228	75,957	4,150	20,211				
Mexico.....	3,994	24,993	7,510	44,060	3,142	8,852				
Netherlands.....	1	14	2	41	44	725	50	210		
Norway.....	129,035	636,641	162,224	787,384	164,562	760,437	166,029	755,876	96,507	436,875
Panama.....							402	2,312	300	1,050
Poland and Danzig.....									1	20
Salvador.....	22,337	128,097	39,129	217,644	36,999	203,053	12,035	70,237	6,386	33,875
Soviet Russia in Europe.....			32	1,765						
Spain.....			4,000	23,000						
Sweden.....	76,051	369,328	76,818	374,946	64,984	321,162	77,962	366,066	77,696	360,697
United Kingdom.....	29,160	178,921	32,325	161,631	52,853	277,052	31,047	175,471	41,325	214,102
Yugoslavia and Albania.....	7,739	29,020	9,677	38,744	29,615	114,768	9,201	41,292	2,200	10,120
	6,275	31,675	11,579	56,393	23,774	119,458	6,614	33,070	3,300	14,988
	809,062	3,837,419	1,075,272	4,913,888	1,159,730	5,183,115	846,012	3,663,113	547,026	2,390,122

High-grade hard-rock phosphate exported from the United States, 1931 and 1932, by customs districts

Customs district	1931		1932		Customs district	1931		1932	
	Long tons	Value	Long tons	Value		Long tons	Value	Long tons	Value
Buffalo.....	1, 121	\$14, 413	151	\$1, 767	Rochester.....	1, 500	\$15, 000	-----	-----
Florida.....	38, 300	254, 561	36, 540	248, 880	St. Lawrence....	63	444	-----	-----
Michigan.....	64	557	55	630					
Montana-Idaho.	64, 245	328, 982	29, 263	154, 255		105, 293	613, 957	66, 009	\$405, 532

World production of phosphate rock, 1928-32, by countries, in metric tons

[Compiled by M. T. Latus, of the Bureau of Mines]

Country	1928	1929	1930	1931	1932
Algeria.....	875, 947	747, 035	846, 686	564, 898	569, 571
Angaur Island ¹	65, 358	65, 494	56, 345	60, 202	(?)
Australia:					
New South Wales.....	138	71	26	96	229
South Australia.....				523	654
Belgium.....	15, 510	40, 330	40, 380	49, 100	(?)
Canada.....	582	1, 075	³ 36		1, 194
China.....	(?)	⁴ 8, 000	⁴ 8, 000	⁴ 8, 000	(?)
Christmas Island (Straits Settlements) ²	113, 687	119, 756	121, 858	66, 906	85, 548
Egypt.....	200, 563	215, 311	313, 478	257, 011	349, 780
Estonia.....	6, 859	8, 352	4, 850	4, 580	(?)
France.....	219, 200	179, 620	159, 800	107, 980	(?)
India (British).....	³ 818	³ 22	308	³ 111	(?)
Indo-China.....	19, 629	18, 772	30, 300	12, 871	373
Japan.....	58, 776	14, 573	27, 713	21, 148	(?)
Madagascar.....	8, 450	13, 441	11, 150	8, 000	(?)
Makatea Island ³	136, 306	242, 990	176, 075	111, 422	120, 650
Morocco, French ⁶	1, 337, 079	1, 608, 249	1, 779, 008	900, 731	987, 317
Nauru and Ocean Islands ⁷	509, 970	585, 844	512, 265	392, 172	438, 466
Netherland India.....		3, 172	1, 258	110	2, 724
Netherland West Indies: Curacao ⁵	104, 194	103, 289	87, 497	80, 928	65, 407
New Caledonia.....	7, 000	(?)	(?)	(?)	1, 000
Philippine Islands.....	1, 550	1, 492	(?)	260	(?)
Poland.....	20, 311	39, 294	40, 000	(?)	(?)
Rumania.....		1, 626	1, 829	(?)	(?)
Russia ⁸	121, 711	⁹ 45, 000	(?)	(?)	(?)
Seychelles Islands ⁵	15, 408	12, 789	15, 977	4, 730	14, 213
Spain.....	7, 897	7, 626	5, 400	7, 734	9, 989
Taiwan.....			57	(?)	(?)
Tunisia.....	2, 789, 000	2, 511, 000	3, 326, 000	2, 148, 000	1, 678, 000
Union of South Africa.....				1, 906	1, 183
United States (sold or used by producers).....	3, 557, 604	3, 821, 217	3, 989, 411	2, 575, 645	1, 734, 300

¹ Exports during fiscal year ended Mar. 31 of year following that stated.

² Data not available.

³ Apatite only.

⁴ Estimated. (Imp. Inst., London.)

⁵ Exports.

⁶ Shipments, including exports as follows: 1928, 1,323,293 tons; 1929, 1,591,933 tons; 1930, 1,760,812 tons; 1931, 882,909 tons; 1932, 972,692 tons.

⁷ Exports during fiscal year ended June 30 of year stated.

⁸ Year ended Sept. 30.

⁹ Powdered.

SUPERPHOSPHATES

Summary of statistics for superphosphate industry in the United States, 1931 and 1932, in long tons

	1931 ¹	1932
Production: ²		
Bulk superphosphate.....16 percent A. P. A. ³ basis..	2,744,528	1,767,660
Base and mixed goods.....16 percent A. P. A. only..	⁴ 68,951	80,559
Shipments: ²		
Bulk superphosphates, to consumers.....16 percent A. P. A. basis..	1,030,665	709,727
Bulk superphosphates, to others.....do.....	⁴ 548,120	840,010
Base and mixed goods.....16 percent A. P. A. only..	⁴ 427,035	876,012
Stocks (Dec. 31): ²		
Bulk superphosphates.....16 percent A. P. A. basis..	1,313,522	1,076,520
Base and mixed goods.....16 percent A. P. A. only..	521,509	341,727
Exports of superphosphates ⁵	81,587	23,883
Imports of superphosphates ⁵	5,337	21,881
Sales of phosphate rock by producers for superphosphate production.....	1,335,236	858,657

¹ Revised figures except those for imports and exports of superphosphates and sales of phosphate rock by producers for superphosphate production.

² Bureau of Census Monthly Statistics Superphosphate Industry.

³ Available phosphoric acid.

⁴ May to December, inclusive.

⁵ Bureau of Foreign and Domestic Commerce.

GOLD, SILVER, COPPER, AND LEAD IN SOUTH DAKOTA

(DETAILED STATISTICS—MINE REPORT)

By CHAS. W. HENDERSON

SUMMARY

Metal mines in South Dakota in 1932 produced \$9,929,459 in gold, 126,195 ounces of silver, and 7,000 pounds of lead. Details are shown in the tables that follow.

The total recorded production of gold, silver, copper, and lead (in terms of recovered metals) in South Dakota from 1875 to 1932, inclusive, has been \$308,084,981 in gold, 8,009,821 fine ounces of silver, 195,691 pounds (revised figures) of copper, and 568,313 pounds (revised figures) of lead.

*Mine production of gold, silver, and lead in South Dakota, 1928-32, in terms of recovered metals*¹

Year	Mines producing			Ore (short tons)	Gold (lode and placer)		Silver (lode and placer)		Lead		Total value
	Lode	Placer	Total		Fine ounces	Value	Fine ounces	Value	Pounds	Value	
1928	5	4	9	1,422,233	317,378.94	\$6,560,805	90,547	\$52,970	74,000	\$4,292	\$6,618,067
1929	2	-----	2	1,463,159	316,836.85	6,549,599	85,182	45,402	-----	-----	6,595,001
1930	2	8	10	1,365,156	407,221.14	8,418,008	105,236	40,516	-----	-----	8,458,524
1931	6	83	89	1,404,153	432,075.39	8,931,791	113,562	32,953	-----	-----	8,964,724
1932	8	217	225	1,409,893	480,337.58	9,929,459	126,195	35,587	7,000	210	9,965,256

¹ For total production of gold and silver in South Dakota, by years, see Henderson, C. W., *Mineral Resources*, 1913, pt. I, p. 42; *Mineral Resources*, 1922, pt. I, p. 194; and subsequent volumes of same series.

*Gold and silver produced at placer mines in South Dakota, 1928-32*¹

Year	Gold		Silver		Total value
	Fine ounces	Value	Fine ounces	Value	
1928	11.13	\$230	-----	-----	\$230
1930	47.41	980	5	\$2	982
1931	96.17	1,988	-----	-----	1,988
1932	1,095.16	22,639	85	24	22,663

¹No production in 1929.

The value of metal production herein reported has been calculated at the figures given in the table that follows. Gold is figured at the mint value for fine gold; that is, \$20.671835 an ounce. The silver price is the average New York price for bar silver. The copper, lead, and zinc prices are weighted averages, for each year, of all grades of primary metal sold by producers.

Prices of silver, copper, lead, and zinc, 1928-32

Year	Silver	Copper	Lead	Zinc	Year	Silver	Copper	Lead	Zinc
	<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>		<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>
1928.....	\$0.585	\$0.144	\$0.058	\$0.061	1931.....	\$0.290	\$0.091	\$0.037	\$0.038
1929.....	.533	.176	.063	.066	1932.....	.282	.063	.030	.030
1930.....	.385	.130	.050	.048					

MINING AND METALLURGIC INDUSTRY

Production at the Homestake mine (the largest gold producer in the United States) was continuous during 1932. A review of the Homestake and other operations is noted under the review by counties

ORE CLASSIFICATION

Ore sold or treated in South Dakota in 1932, with content in terms of recovered metals

Source	Ore	Gold	Silver	Lead
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>
Dry gold ore.....	1,402,293	479,213.81	122,822	---
Dry silver ore.....	7,600	28.61	3,288	7,000
	1,409,893	479,242.42	126,110	7,000
Total, 1931.....	1,404,153	481,979.22	113,562	---

METALLURGIC RECOVERY

Gold and silver bullion produced at mills in South Dakota by amalgamation, 1928-32

Year	Ore treated	Gold in bullion	Silver in bullion	Quicksilver used
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>
1928.....	1,417,029	211,921.22	51,649	10,550
1929.....	1,437,935	210,869.03	51,676	9,225
1930.....	1,364,466	270,448.01	65,265	12,021
1931.....	1,404,106	288,155.99	67,857	15,305
1932.....	1,402,275	310,637.81	73,639	7,633

Gold and silver bullion produced at mills in South Dakota by cyanidation, 1928-32

Year	Material treated			Gold in bullion	Silver in bullion	Sodium cyanide used ¹
	Crude ore	Sands and slimes	Total			
	<i>Short tons</i>	<i>Short tons</i>	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>
1928.....	5,109	1,371,096	1,376,205	105,444.56	37,421	335,675
1929.....	25,224	1,358,870	1,384,094	105,967.82	33,506	353,859
1930.....	700	1,348,144	1,348,844	136,725.72	39,966	382,110
1931.....	47	1,400,191	1,400,238	143,823.23	45,705	375,535
1932.....	---	1,396,330	1,396,330	168,561.00	50,166	² 437,773

¹ In terms of 96 to 98 percent strength.

² Actually 872,381 pounds of cyanamid (49 percent strength) and 1,583 pounds of sodium cyanide (96 to 98 percent strength); cyanamid reduced to equivalent of 96 to 98 percent strength to conform with earlier use of figures for high-strength NaCN and KCN.

REVIEW BY COUNTIES

CUSTER COUNTY

Mine production of gold, silver, and lead in Custer County, S.Dak., 1928-32, in terms of recovered metals ¹

Year	Mines producing		Ore	Gold (lode and placer)	Silver (lode and placer)	Lead	Total value
	Lode	Placer					
1928.....	1	-----	<i>Short tons</i> 95	\$42	<i>Fine ounces</i> 1,477	<i>Pounds</i> 74,000	\$5,198
1930.....	-----	4	-----	131	-----	-----	131
1931.....	-----	41	-----	942	-----	-----	942
1932.....	-----	80	-----	14,425	50	-----	14,439

¹ No production in 1929.

Gold production, all by placer mining, in Custer County increased from 45.57 fine ounces (\$942) in 1931 to 697.81 fine ounces (\$14,425) in 1932, chiefly from the Grand Hills Mining Co. steam shovel—Ainlay bowl installation on French Creek near Custer—and from a special machine fed by a 1-yard power shovel operated by the Eureka Mining Co., Inc., on French Creek 3½ miles west of Custer. The Grand Hills Mining Co. worked about 10 hours a day from June 15 until December 1, 1932, and the Eureka Mining Co. operated about 10 days, beginning November 18, 1932.

LAWRENCE COUNTY

Mine production of gold, silver, and lead in Lawrence County, S.Dak., 1928-32, in terms of recovered metals

Year	Mines producing			Ore	Gold (lode and placer)	Silver (lode and placer)	Lead	Total value
	Lode	Placer	Total					
1928.....	1	4	5	<i>Short tons</i> 1,416,949	\$6,533,894	<i>Fine ounces</i> 88,829	<i>Pounds</i> -----	\$6,585,859
1929.....	1	-----	1	1,437,935	6,491,184	84,987	-----	6,536,482
1930.....	1	4	5	1,364,456	8,410,937	105,184	-----	8,451,433
1931.....	2	22	24	1,403,964	8,928,512	113,507	-----	8,961,429
1932.....	3	17	20	1,409,211	9,908,029	126,103	7,000	9,943,800

Details of operations at the Homestake mine in 1932 were reviewed in the Minerals Yearbook, 1932-33, issued by the Bureau of Mines in August 1933. Other producing lode mines in Lawrence County were the Sitting Bull and Richmond, of the Double Rainbow Mines, Inc., and the Monarch, owned by the Monarch Mining Co. Placer mining was carried on by panning and sluicing on Bear and Whitewood Creeks and by power shovel and sluices by the Bear Creek Association on Bear Creek near Tinton.

*Ore milled, receipts, and dividends, Homestake mine, 1928-32*¹

Year	Ore milled	Receipts for bullion product		Dividends
		Total	Per ton	
	<i>Short tons</i>			
1928.....	1,416,949	\$6,566,784.69	\$4.6345	\$1,758,120
1929.....	1,437,935	6,517,837.95	4.5328	1,758,120
1930.....	1,364,456	8,426,195.21	6.1755	2,009,280
1931.....	1,403,939	8,935,307.15	6.3645	2,122,302
1932.....	1,401,593	9,911,858.40	7.0719	2,662,296

¹ From 1876 to 1932, inclusive, this mine yielded bullion and concentrates which brought \$253,394,489 and paid \$62,653,282 in dividends.

PENNINGTON COUNTY

Mine production of gold and silver in Pennington County, S.Dak., 1928-32, in terms of recovered metals

Year	Mines producing		Ore	Gold (lode and placer)	Silver (lode and placer)	Total value
	Lode	Placer				
			<i>Short tons</i>		<i>Fine ounces</i>	
1928.....	3		5,189	\$26,869	241	\$27,010
1929.....	1		25,224	58,415	195	58,519
1930.....	1		700	6,940	52	6,960
1931.....	4	20	189	2,337	55	2,353
1932.....	5	120	682	7,005	42	7,017

Lode mines operating in Pennington County in 1932 were the Cochran group and the Greenback, Western Bell, and Woodchuck. Placer mining was done by panning, sluicing, and drift mining on Battle, Castle, and Spring Creeks.

GOLD, SILVER, COPPER, AND LEAD IN WYOMING

(DETAILED STATISTICS—MINE REPORT)

By CHAS. W. HENDERSON

SUMMARY

Metal mines in Wyoming in 1932 yielded gold, silver, copper, and lead valued in terms of recovered metals at \$5,679 compared with gold, silver, and copper valued at \$1,989 in 1931. The gold, both lode and placer, came chiefly from the Atlantic City district, Fremont County; the bulk of it was marketed in the form of amalgamation and placer bullion, but 338 pounds of precipitates containing 37.40 ounces of gold were shipped from a small cyanide plant near South Pass City to a smelter. Most of the silver and all the copper and lead were contained in 25 tons of lead-silver ore shipped from Encampment, Carbon County. The remainder of the ore was classed as dry gold.

Mine production of gold, silver, copper, and lead in Wyoming, 1928-32, in terms of recovered metals

Year	Ore (short tons)	Gold	Silver		Copper		Lead		Total value
			Fine ounces	Value	Pounds	Value	Pounds	Value	
1928.....	129	\$677	53	\$31	2,604	\$375	-----	-----	\$1,083
1929.....	143	995	26	14	4,301	757	-----	-----	1,766
1930.....	1,285	9,153	122	47	11,600	1,508	-----	-----	10,713
1931.....	23	1,165	17	5	9,000	819	-----	-----	1,989
1932.....	640	5,305	195	55	397	25	9,800	\$294	5,679

The value of metal production herein reported has been calculated at the figures given in the table that follows. Gold is figured at the mint value for fine gold; that is, \$20.671835 an ounce. The silver price is the average New York price for bar silver. The copper, lead, and zinc prices are weighted averages, for each year, of all grades of primary metal sold by producers.

Prices of silver, copper, lead, and zinc, 1928-32

Year	Silver	Copper	Lead	Zinc	Year	Silver	Copper	Lead	Zinc
	<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>		<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>
1928.....	\$0.585	\$0.144	\$0.058	\$0.061	1931.....	\$0.290	\$0.091	\$0.037	\$0.038
1929.....	.533	.176	.063	.066	1932.....	.282	.063	.030	.030
1930.....	.385	.130	.050	.048					

Mine production of gold, silver, copper, and lead in Wyoming in 1932, by counties, in terms of recovered metals

County	Mines producing		Ore	Gold			Silver			Copper	Lead	Total value
	Lode	Placer		Lode	Placer	Total	Lode	Placer	Total			
Albany	1	3	Short tons 1	Fine ounces 0.87	Fine ounces 23.99	Fine ounces 24.86	Fine ounces 7.98	Fine ounces 4	Fine ounces 4	Pounds 397	Pounds 9,800	\$515
Carbon	3		47	7.98								532
Converse		1			2.47	2.47						51
Crook		1			3.63	3.63						75
Fremont	6	12	592	168.59	37.54	206.13	18	3	21			4,267
Teton		2			5.51	5.51						114
Washakie		2			6.05	6.05						125
	10	21	640	177.44	79.19	256.63	188	7	195	397	9,800	5,679

REVIEW BY COUNTIES AND DISTRICTS

ALBANY COUNTY

Albany district.—One ton of gold ore from the Albany district was sold to the Boulder Ore Sampling Works at Boulder, Colo., in 1932.

Centennial and La Plata districts.—At the Utopia group of claims, 1 mile west of Centennial, a 35-ton concentrating mill was completed during 1932 for the treatment of gold ores. The property is being developed under a 15-year lease by the Associated Miners. Ten tons of concentrates were produced from the treatment of 100 tons of crude ore but were not sold during the year.

Douglas Creek district (Holmes, Keystone).—In the Douglas Creek district two small placers, worked by a drag-line excavator and sluice boxes, yielded gold bullion which was sold to the Denver Mint.

Keystone district.—The Home placer was the only producing mine in the Keystone district in 1932.

CARBON COUNTY

Encampment or Upper Platte district.—At the Bonanza King mine 12 tons of copper-silver-gold ore were treated in 1932 by differential screening; the product—a concentrate reported as assaying 50 per cent copper—was held at the mine. Gold bullion was shipped from one property in the district to the Denver Mint in 1932.

Spring Creek district.—One car of lead ore was shipped in 1932 from the Alma and Meta mines, 22 miles southwest of Saratoga, to the Murray (Utah) plant of the American Smelting & Refining Co.

CONVERSE COUNTY

A small quantity of placer gold was produced in Converse County in 1932 and sold to the Denver Mint.

CROOK COUNTY

Hurricane district.—Placer miners extended their operations from Tinton, S.Dak., across the line into Wyoming in 1932 and recovered placer bullion by panning, rocking, and sluicing on Sand and Spotted Tail Creeks.

FREMONT COUNTY

Atlantic City district.—Production, all gold and silver, from lode mines in the Atlantic City district in 1932 came from the Atasta Gold Mining Lode, Carissa mine, Gold Nugget Mining Co. property, McGrath or "1914"-Sullivan property (mill clean-up), and the Ramona-Hiawatha Nos. 1, 2, and 3 group. A 10-ton cyanide plant erected in 1932 at an old mill site one half mile from the Carissa mine treated 300 tons of tailings, a product of ore from the Carissa mine milled several years ago. The material was subjected to a cyanide solution for 72 hours, and the solution was then passed through zinc shavings in precipitating boxes; the resulting precipitates were marketed at the Selby (Calif.) smelter. Eleven placer mines in the district were operated by panning, rocking, and sluicing methods. One operator, prospecting several localities in the South Pass area of the district with an Ainlay gold separator, recovered 7.94 crude ounces of gold bullion, which after being melted at the Denver Mint weighed 7.48 ounces, with a fineness of 0.873 in gold and 0.103½ in silver.

Copper Mountain district.—A small quantity of placer bullion was recovered by sluicing and panning in the Copper Mountain district in 1932.

TETON COUNTY

An operator on Snake River at the mouth of Spread Creek, using 2 special machines with a capacity of 50 cubic yards each per 24 hours and power furnished by gasoline engines, recovered and shipped 978 pounds of concentrates containing 4.49 ounces of gold to the Tooele (Utah) smelter. Another operator on Snake River obtained 1 ounce of gold by panning a sluice-box clean-up.

WASHAKIE COUNTY

A small quantity of gold bullion obtained from placer operations in Washakie County in 1932 was sold to the Denver Mint.

GOLD, SILVER, COPPER, LEAD, AND ZINC IN MONTANA

(DETAILED STATISTICS—MINE REPORT)

By T. H. MILLER

SUMMARY

The output of gold, silver, copper, lead, and zinc from mines in Montana was valued at \$6,856,737 in 1932, a decrease of \$12,718,316 (65 percent) from 1931 and only 15 percent of the yearly average (\$46,890,490) for the decade 1923 to 1932. The output in 1932 was by far the lowest in any year since detailed records were begun in 1904.

The total value of the gold, silver, copper, lead, and zinc produced from Montana mines from 1862 to 1932, inclusive, is estimated at \$2,801,031,522. Production from 1904 to 1932, inclusive, valued at \$1,702,011,823, is as follows: Ore, old tailings, etc., 137,014,035 short tons; gold, \$78,477,345; silver, 337,679,524 fine ounces; copper, 7,069,716,953 pounds; lead, 561,650,816 pounds; and zinc, 2,695,230,396 pounds.

The value of metal production herein reported has been calculated at the figures given in the table that follows. Gold is figured at the mint value for fine gold; that is, \$20.671835 an ounce. The silver price is the average New York price for bar silver. The copper, lead, and zinc prices are weighted averages, for each year, of all grades of primary metal sold by producers.

Prices of silver, copper, lead, and zinc, 1928-32

Year	Silver	Copper	Lead	Zinc	Year	Silver	Copper	Lead	Zinc
	<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>		<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>
1928.....	\$0.585	\$0.144	\$0.058	\$0.061	1931.....	\$0.290	\$0.091	\$0.037	\$0.033
1929.....	.533	.176	.063	.066	1932.....	.282	.063	.030	.030
1930.....	.385	.130	.050	.048					

Mine production of gold, silver, copper, lead, and zinc in Montana, 1928-32, in terms of recovered metals

Year	Mines producing		Ore, old tailings, etc. (short tons)	Gold		Silver	
	Lode	Placer		Fine ounces	Value	Fine ounces	Value
1928.....	236	43	4,344,279	58,196.09	\$1,203,020	10,853,276	\$6,349,166
1929.....	212	40	4,723,445	54,758.03	1,131,949	12,716,977	6,778,149
1930.....	193	73	2,686,669	43,489.17	899,001	7,052,889	2,715,362
1931.....	243	118	2,085,683	40,112.16	829,192	3,829,837	1,110,653
1932.....	390	232	765,014	40,602.01	839,318	1,686,213	475,512

Year	Copper		Lead		Zinc		Total value
	Pounds	Value	Pounds	Value	Pounds	Value	
1928.....	248,262,027	\$35,749,732	33,759,644	\$1,958,059	165,660,189	\$10,105,272	\$55,365,249
1929.....	297,725,973	52,399,771	39,213,707	2,470,464	136,351,734	8,999,214	71,779,547
1930.....	196,187,523	25,504,378	21,306,044	1,065,302	52,841,108	2,536,373	32,720,416
1931.....	184,555,735	16,794,572	8,860,186	327,827	13,494,986	512,809	19,575,053
1932.....	84,847,349	5,345,383	2,157,766	64,733	4,393,034	131,791	6,856,737

Gold and silver produced at placer mines in Montana, 1928-32

Year	Gold		Silver		Year	Gold		Silver	
	Fine ounces	Value	Fine ounces	Value		Fine ounces	Value	Fine ounces	Value
1928.....	865.14	\$17,884	149	\$87	1931.....	1,907.86	\$39,439	233	\$68
1929.....	596.66	12,334	71	38	1932.....	3,537.42	73,125	422	119
1930.....	720.74	14,899	86	33					

Production of gold from placer mines in 1932 was nearly double that in 1931 and more than offset the slight decrease from lode mines, resulting in a gain of 1 percent in the total for the State; more than 68 percent of the gold came from siliceous ore, old tailings, etc., 21 percent from copper ore, and most of the remainder from placers. Production of silver decreased 56 percent, due almost entirely to reduced output of copper ore from mines at Butte. The output of copper declined 54 percent in quantity and 68 percent in value, due to curtailment in output of copper ore by the Anaconda Copper Mining Co. at Butte; the decline in total value of copper accounted for 90 percent of the decrease in total value of the State metal output. The output of lead decreased nearly 76 percent; about one half the decline was caused by a decrease in output of lead-zinc ore and most of the remainder by decreases in output of lead ore and zinc ore (slag). The output of zinc declined 67 percent, due to lessened output from the slag fuming plant at East Helena.

GOLD, SILVER, COPPER, LEAD, AND ZINC IN MONTANA 41

Mine production of gold, silver, copper, lead, and zinc in Montana in 1932, by counties, in terms of recovered metals

County	Gold				Silver (lode and placer)		
	Lode		Placer		Total value	Fine ounces	Value
	Fine ounces	Value	Fine ounces	Value			
Beaverhead.....	4, 519. 58	\$93, 428	99. 70	\$2, 061	\$95, 489	16, 312	\$4, 600
Broadwater.....	5, 373. 88	111, 088	266. 98	5, 519	116, 607	15, 702	4, 428
Cascade.....	64. 97	1, 343	-----	-----	1, 343	6, 330	1, 785
Deerlodge.....	3, 124. 93	64, 598	24. 19	500	65, 098	1, 890	533
Fergus.....	378. 00	7, 814	19. 40	401	8, 215	440	124
Granite.....	432. 91	8, 949	214. 93	4, 443	13, 392	695	196
Jefferson.....	1, 520. 57	31, 433	162. 49	3, 358	34, 792	12, 713	3, 585
Lewis and Clark.....	3, 099. 24	64, 067	233. 65	4, 830	68, 897	14, 720	4, 151
Lincoln.....	369. 68	7, 642	110. 20	2, 278	9, 920	4, 546	1, 282
Madison.....	10, 488. 43	216, 815	328. 22	6, 785	223, 600	27, 039	7, 625
Meagher.....	16. 30	337	64. 68	1, 337	1, 674	14	4
Mineral.....	27. 96	578	777. 92	16, 081	16, 659	2, 500	705
Missoula.....	112. 52	2, 326	129. 45	2, 676	5, 002	78	22
Park.....	1, 595. 99	32, 992	301. 76	6, 238	39, 230	404	114
Phillips.....	1, 354. 84	28, 007	20. 61	426	28, 433	2, 532	714
Powell.....	422. 70	8, 738	531. 16	10, 980	19, 718	8, 305	2, 342
Ravalli.....	30. 04	621	35. 99	744	1, 365	14	4
Sanders.....	123. 21	2, 547	22. 40	463	3, 010	8, 227	2, 320
Silver Bow.....	4, 006. 95	82, 831	175. 89	3, 636	86, 467	1, 563, 752	440, 978
Toole.....	1. 89	39	17. 80	368	407	-----	-----
Total, 1931.....	37, 064. 59	766, 193	3, 537. 42	73, 125	839, 318	1, 686, 213	475, 512
	38, 204. 30	789, 753	1, 907. 86	39, 439	829, 192	3, 829, 837	1, 110, 653

County	Copper		Lead		Zinc		Total value
	Pounds	Value	Pounds	Value	Pounds	Value	
Beaverhead.....	5, 969	\$376	35, 900	\$1, 077	-----	-----	\$101, 542
Broadwater.....	2, 206	139	146, 600	4, 398	-----	-----	125, 672
Cascade.....	1, 825	115	15, 767	473	-----	-----	3, 716
Deerlodge.....	5, 381	339	-----	-----	-----	-----	65, 970
Fergus.....	206	13	-----	-----	-----	-----	8, 352
Granite.....	2, 223	140	-----	-----	-----	-----	13, 728
Jefferson.....	7, 666	483	18, 666	560	-----	-----	39, 420
Lewis and Clark.....	2, 730	172	313, 466	9, 404	4, 336, 667	\$130, 100	212, 724
Lincoln.....	651	41	39, 300	1, 179	-----	-----	12, 422
Madison.....	92, 635	5, 836	32, 033	961	-----	-----	238, 022
Meagher.....	64	4	-----	-----	-----	-----	1, 682
Mineral.....	1, 095	69	7, 100	213	-----	-----	17, 646
Missoula.....	333	21	-----	-----	-----	-----	5, 045
Park.....	-----	-----	-----	-----	-----	-----	39, 344
Phillips.....	-----	-----	-----	-----	-----	-----	29, 147
Powell.....	1, 460	92	3, 567	107	-----	-----	22, 259
Ravalli.....	32	2	-----	-----	-----	-----	1, 371
Sanders.....	115, 079	7, 250	1, 542, 767	46, 283	56, 367	1, 691	60, 554
Silver Bow.....	84, 607, 794	5, 330, 291	2, 600	78	-----	-----	5, 857, 814
Toole.....	-----	-----	-----	-----	-----	-----	407
Total, 1931.....	84, 847, 349	5, 345, 383	2, 157, 766	64, 733	4, 393, 034	131, 791	6, 856, 737
	184, 555, 735	16, 794, 572	8, 860, 186	327, 827	13, 494, 986	512, 809	19, 575, 053

42 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Ore, old tailings, etc., sold or treated and lode mines producing in Montana, 1931 and 1932, by counties

County	Ore, old tailings, etc. (short tons)		Lode mines producing		County	Ore, old tailings, etc. (short tons)		Lode mines producing	
	1931	1932	1931	1932		1931	1932	1931	1932
Beaverhead.....	12,552	16,338	10	18	Meagher.....	28	12	3	1
Broadwater.....	8,315	17,944	33	57	Mineral.....	83	37	1	4
Carbon.....	17		1		Missoula.....		138		6
Cascade.....	126	59	5	4	Park.....	70	3,048	1	3
Deerlodge.....	301	5,900	7	11	Phillips.....	215	172	1	1
Fergus.....	875	1,470	3	4	Powell.....	327	614	13	27
Flathead.....	17		3		Ravalli.....		61		1
Granite.....	459	601	14	18	Sanders.....	50,838	8,854	3	2
Jefferson.....	434	3,261	25	44	Silver Bow.....	1,869,348	652,907	6	19
Judith Basin.....	74		2		Toole.....		2		1
Lewis and Clark..	122,609	26,630	27	51					
Lincoln.....	123	1,152	4	6					
Madison.....	18,872	25,754	81	112					
						2,085,683	765,014	243	390

Gold and silver produced at placer mines in Montana in 1932, by counties

County	Mines		Gold	Silver (fine ounces)	Total value	County	Mines		Gold	Silver (fine ounces)	Total value
	Drift	Hydraulic and sluicing					Drift	Hydraulic and sluicing			
Beaverhead.....	1	9	\$2,061	7	\$2,063	Missoula.....	1	12	\$2,676	7	\$2,678
Broadwater.....	1	15	5,519	46	5,532	Fark.....	2	5	6,238	46	6,251
Deerlodge.....		5	500		500	Phillips.....		5	426		426
Fergus.....		4	401		401	Fowell.....	1	25	10,980	64	10,998
Granite.....	2	19	4,443	39	4,454	Ravalli.....		4	744		744
Jefferson.....		17	3,359	50	3,373	Sanders.....		3	463		463
Lewis and Clark..	1	24	4,830	25	4,837	Silver Bow.....		14	3,636	32	3,645
Lincoln.....		7	2,278	7	2,280	Toole.....		3	368		368
Madison.....	2	20	6,785	60	6,802						
Meagher.....	1	6	1,337	7	1,339						
Mineral.....	2	21	16,081	32	16,090						
						Total, 1931.....	14	218	73,125	422	73,244
							10	108	39,439	233	39,507

MINING INDUSTRY

The mining industry of Montana in 1932 was reviewed in a preliminary statement released in January 1933 and on pages 110 to 113 of the Minerals Yearbook, 1932-33, published by the Bureau of Mines in August 1933.

ORE CLASSIFICATION

Ore, old tailings, etc., sold or treated in Montana in 1932, with content in terms of recovered metals

Source	Mines producing	Ore, old tailings, etc.	Gold	Silver	Copper	Lead	Zinc
		<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Dry gold ore.....	334	¹ 65,050	27,313.45	55,480	37,840	90,706	-----
Dry gold and silver ore.....	8	379	341.35	19,667	4,160	-----	-----
Dry silver ore.....	6	157	4.50	6,371	691	200	-----
Copper ore.....	7	² 668,679	8,657.76	1,574,071	³ 84,786,145	118	-----
Lead ore.....	40	⁴ 1,907	710.70	16,084	5,178	643,054	-----
Zinc ore.....	1	⁵ 20,858	-----	3,025	-----	268,300	4,336,667
Copper-lead ore.....	3	104	17.30	5,629	5,770	38,235	-----
Lead-zinc ore.....	1	7,880	19.53	5,464	7,565	1,117,153	56,367
Total, lode mines.....	⁶ 390	765,014	37,064.59	1,685,791	³ 84,847,349	2,157,766	4,393,034
Total, placers.....	232	-----	3,537.42	422	-----	-----	-----
Total, 1931.....	622 361	765,014 2,085,683	40,602.01 40,112.16	1,686,213 3,829,837	³ 84,847,349 ⁷ 184,555,735	2,157,766 8,860,186	4,393,034 13,494,986

¹ Includes 200 tons of old tailings and 3 tons of old slag amalgamated, 1,841 tons of old tailings cyanided, 160 tons of old tailings concentrated, and 218 tons of old tailings and 190 tons of old mill clean-up sold to a smelter.
² Includes 14,343 tons of old tailings sold to a smelter.
³ Includes 9,474,300 pounds of copper recovered from precipitates.
⁴ Includes 3 tons of old tailings sold to a smelter.
⁵ Current slag fumed.
⁶ A mine producing more than 1 class of ore is counted but once in arriving at total for all classes.
⁷ Includes 9,092,564 pounds of copper recovered from precipitates.

Value of metals from ore, old tailings, etc., sold or treated in Montana in 1932, by classes of ore

Class	Ore, old tailings, etc. (short tons)	Gold	Silver	Copper	Lead	Zinc	Total value
Dry gold ore.....	65,050	\$564,619	\$15,645	\$2,384	\$2,721	-----	\$585,369
Dry gold and silver ore.....	379	7,056	5,546	262	-----	-----	12,864
Dry silver ore.....	157	93	1,797	44	6	-----	1,940
Copper ore.....	668,679	178,972	443,888	¹ 5,341,527	3	-----	5,964,390
Lead ore.....	1,907	14,691	4,536	326	19,292	-----	38,845
Zinc ore.....	20,858	-----	4,853	-----	8,049	\$130,100	139,002
Copper-lead ore.....	104	358	1,587	363	1,147	-----	3,455
Lead-zinc ore.....	7,880	404	1,541	477	33,515	1,691	37,628
Total, 1931.....	765,014 2,085,683	766,193 789,753	475,393 1,110,585	¹ 5,345,383 ² 16,794,572	64,733 327,827	131,791 512,809	6,783,493 19,535,546

¹ Includes value of 9,474,300 pounds of copper recovered from precipitates.
² Includes value of 9,092,564 pounds of copper recovered from precipitates.

The output of siliceous ore, old tailings, etc., in 1932 was 25 percent less than in 1931 but accounted for nearly 9 percent of the total ore, etc., produced, and there was a large increase in the number of mines producing such ore. The Ohio-Keating mine in Broadwater County and the Sleeping Princess mine in Beaverhead County were the leading producers of siliceous ore in 1932. The closing of the Spring Hill mine in Lewis and Clark County in 1931 resulted in a large decrease in 1932 in the output of siliceous gold ore. The output of copper ore and old tailings decreased 64 percent and accounted for 87 percent of the total ore, etc., produced; the decrease was caused by curtailment at the mines of the Anaconda Copper Mining Co. at Butte. The output of zinc material (lead smelter slag treated by fuming) decreased 68 percent as the East Helena smelter was operated only part of the time. The output of lead ore and lead-zinc ore also declined considerably.

Ore, old tailings, etc., sold or treated in Montana in 1932, by counties, with content in terms of recovered metals

DRY GOLD ORE

County	Ore, old tailings, etc.	Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Beaverhead.....	16, 119	4, 428. 10	7, 004	2, 103	1, 061	
Broadwater.....	¹ 17, 661	5, 187. 83	13, 125	1, 726	86, 601	
Cascade.....	2	11. 65	194			
Deerledge.....	² 5, 863	3, 124. 71	635	5, 299		
Fergus.....	³ 1, 467	377. 82	322	206		
Granite.....	601	432. 91	656	2, 223		
Jefferson.....	⁴ 3, 036	1, 336. 71	3, 553	3, 514	427	
Lewis and Clark.....	⁵ 5, 601	3, 043. 94	8, 985	1, 423	399	
Lincoln.....	396	181. 48	1, 114	201	459	
Madison.....	⁶ 9, 359	4, 592. 17	15, 162	14, 200	848	
Meagher.....	12	16. 30	7	64		
Mineral.....	13	24. 14	7			
Missoula.....	138	112. 52	71	333		
Park.....	3, 048	1, 595. 99	358			
Phillips.....	172	1, 354. 84	2, 532			
Powell.....	419	215. 52	594	361	931	
Ravalli.....	61	30. 04	14	32		
Silver Bow.....	⁷ 1, 080	1, 194. 89	1, 157	6, 355		
Toole.....	2	1. 89				
Total, 1931.....	65, 050 87, 632	27, 313. 45 24, 650. 64	55, 480 27, 169	37, 840 25, 590	90, 706 7, 522	

DRY GOLD AND SILVER ORE

Cascade.....	25	52. 30	4, 625			
Jefferson.....	144	89. 87	7, 277	3, 069		
Lewis and Clark.....	5	4. 30	155			
Madison.....	25	10. 60	128			
Powell.....	180	184. 28	7, 482	1, 091		
Total, 1931.....	379 86	341. 35 152. 30	19, 667 9, 336	4, 160 503	67	

DRY SILVER ORE

Beaverhead.....	107	3. 92	4, 826	556		
Deerledge.....	37	. 22	1, 255	82		
Fergus.....	3	. 18	118			
Lewis and Clark.....	8	. 10	67		200	
Madison.....	2	. 08	105	53		
Total, 1931.....	157 149	4. 50 9. 54	6, 371 10, 371	691 1, 117	200 2, 021	

COPPER ORE

Broadwater.....	3	2. 70	59	165	118	
Madison.....	16, 182	5, 749. 75	10, 990	78, 287		
Sanders.....	618	98. 15	546	106, 254		
Silver Bow.....	⁷ 651, 876	2, 807. 16	1, 562, 476	⁸ 84, 601, 439		
Total, 1931.....	668, 679 1, 878, 757	8, 657. 76 12, 905. 58	1, 574, 071 3, 710, 564	⁸ 84, 786, 145 ⁹ 184, 474, 582	118	

¹ Includes 1 ton of old tailings sold to a smelter.

² Includes 1 ton of old mill clean-up sold to a smelter, 1,500 tons of old tailings cyanided, and 160 tons of old tailings concentrated.

³ Includes 1 ton of old mill clean-up sold to a smelter.

⁴ Includes 200 tons of old tailings amalgamated and 195 tons of old tailings sold to a smelter.

⁵ Includes 330 tons of old tailings cyanided and 5 tons of old tailings and 187 tons of old mill clean-up sold to a smelter.

⁶ Includes 3 tons of old slag amalgamated, 11 tons of old tailings cyanided, and 17 tons of old tailings sold to a smelter.

⁷ Includes 14,343 tons of old tailings sold to a smelter.

⁸ Includes 9,474,300 pounds of copper recovered from precipitates.

⁹ Includes 9,092,564 pounds of copper recovered from precipitates.

GOLD, SILVER, COPPER, LEAD, AND ZINC IN MONTANA 45

Ore, old tailings, etc., sold or treated in Montana in 1932, by counties, with content in terms of recovered metals—Continued

LEAD ORE

County	Ore, old tailings, etc.	Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Beaverhead.....	45	76.68	723	8	12,439	-----
Broadwater.....	¹⁰ 280	183.35	2,472	315	59,881	-----
Cascade.....	13	.30	435	404	3,099	-----
Jefferson.....	¹ 63	38.29	1,032	236	15,072	-----
Lewis and Clark.....	158	50.90	2,463	1,307	44,567	-----
Lincoln.....	756	188.20	3,425	450	38,861	-----
Madison.....	186	135.83	594	95	31,185	-----
Mineral.....	24	3.82	2,461	1,095	7,100	-----
Powell.....	15	22.90	175	8	2,636	-----
Sanders.....	356	5.53	2,217	1,260	425,614	-----
Silver Bow.....	11	4.90	87	-----	2,600	-----
Total, 1931.....	1,907 3,031	710.70 262.85	16,084 35,573	5,178 14,392	643,054 3,032,550	-----

ZINC ORE

Lewis and Clark.....	¹¹ 20,858	-----	3,025	-----	268,300	4,336,667
Total, 1931.....	¹¹ 20,858 ¹¹ 65,000	-----	3,025 6,023	-----	268,300 1,274,000	4,336,667 12,875,845

COPPER-LEAD ORE

Beaverhead.....	67	10.88	3,752	3,302	22,400	-----
Cascade.....	19	.72	1,076	1,421	12,668	-----
Jefferson.....	18	5.70	801	1,047	3,167	-----
Total, 1931.....	104 79	17.30 2.62	5,629 4,064	5,770 5,613	38,235 55,682	-----

LEAD-ZINC ORE

Sanders.....	7,880	19.53	5,464	7,565	1,117,153	56,367
Total, 1931.....	7,880 50,949	19.53 220.77	5,464 26,504	7,565 33,938	1,117,153 4,488,344	56,367 619,141

¹ Includes 1 ton of old tailings sold to a smelter.

¹⁰ Includes 2 tons of old tailings sold to a smelter.

¹¹ Current slag fumed.

Zinc products (as marketed from Montana mines and mills) sold to smelters and electrolytic plants in 1932

Classification	County	Quantity (dry weight)	Gross zinc	Average assay of concentrates	Recovered zinc
Zinc concentrates.....	Sanders.....	<i>Short tons</i> 64	<i>Pounds</i> 61,178	<i>Percent</i> 47.80	<i>Pounds</i> 56,367
Total, 1931.....	-----	64 712	¹ 61,178 ¹ 671,558	47.80 47.16	¹ 56,367 ¹ 619,141

¹ Exclusive of zinc recovered from the treatment of current slag at East Helena.

METALLURGIC INDUSTRY

Of the total ore, old tailings, etc., produced in Montana in 1932, 640,424 tons (84 percent) were treated at concentration plants, 52,423 tons (7 percent) were treated at gold and silver mills, and the remainder (9 percent) consisted of 36,555 tons of smelting ore, 14,754 tons of old tailings and old mill clean-up smelted, and 20,858 tons of current slag treated in a fuming plant. There were 9 concentrating mills operating—3 straight flotation plants, 2 combined gravity and flotation plants, and 4 straight gravity plants. The material sent to gold and silver mills was treated in 60 plants—40 amalgamation mills, 8 amalgamation and gravity concentration mills, 4 amalgamation and flotation mills, 1 amalgamation and combined gravity and flotation mill, 1 combined amalgamation, concentration, and cyanidation mill, and 6 straight cyanidation mills. In addition there were 3 miscellaneous plants—1 zinc fuming plant, 1 electrolytic zinc plant, and 1 copper precipitation plant treating mine waters. The total was 72 mills operating in 1932 compared with 44 in 1931.

Mine production of metals from gold and silver mills in Montana in 1932, by counties, in terms of recovered metals

County	Ore, old tailings, etc., treated (dry weight)		Recovered in bullion			
			Amalgamation		Cyanidation	
			Ore	Old tailings, etc.	Gold	Silver	Gold	Silver
	<i>Short tons</i>	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Fine ounces</i>
Beaverhead.....	15,037		34.24	9	3,630.00	6,370
Broadwater.....	15,601		280.05	94	2,936.00	325
Deerlodge.....	2,821	1,500	1,124.24	13	281.84	305
Fergus.....	1,402		12.50		314.18	212
Granite.....	58		30.80	10	2.83	5
Jefferson.....	1,432	200	437.92	95		
Lewis and Clark.....	4,008	330	1,222.34	3,326	36.20	279
Lincoln.....	201		17.34	6		
Madison.....	6,491	14	1,031.45	438	6.55	156
Mineral.....	13		24.14	7		
Park.....	3,046		1,016.35	146		
Powell.....	240		95.14	36		
Silver Bow.....	29		51.96	74		
Total, 1931.....	50,379 24,356	2,044 836	5,378.47 1,787.31	4,254 773	7,207.60 4,817.34	7,652 10,910

County	Concentrates and recovered metal				
	Concentrates produced	Gold	Silver	Copper	Lead
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>
Beaverhead.....	15	93.60	124		
Broadwater.....	1	2.20	1		
Deerlodge.....	33	9.62			
Jefferson.....	5	3.22	15		45
Madison.....	341	871.46	1,654	1,943	350
Park.....	202	540.84	202		
Powell.....	8	9.50	13	50	
Total, 1931.....	605 170	1,530.44 546.45	2,009 1,360	1,993 552	395 1,584

¹ Old tailings cyanided.

² Old tailings amalgamated.

³ Includes 3 tons of old slag amalgamated and 11 tons of old tailings cyanided.

Montana ore and old tailings concentrated in 1932, by classes of ore, etc., methods of concentration, and classes of concentrates

Class of material concentrated	Method of concentration	Ore and old tailings concentrated	Gross content of mill feed				
			Gold	Silver	Copper	Lead	Zinc
Copper sulphide ore.....	Flotation.....	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Lead sulphide ore.....		¹ 631, 460	9, 171. 85	1, 593, 068	76, 366, 660	41, 200	-----
Lead-zinc sulphide ore.....		810	280. 00	3, 809	483	221, 680	-----
		7, 880	29. 06	6, 010	15, 141	1, 276, 970	-----
Siliceous gold ore and old tailings.....	Gravity.....	¹ 640, 150	9, 480. 91	1, 602, 887	76, 382, 284	1, 318, 170	-----
		² 274	111. 10	192	1, 475	230	-----
		³ 640, 424	9, 592. 01	1, 603, 079	76, 383, 759	1, 318, 400	221, 680

Class of material concentrated	Method of concentration	Concentrates produced		Gross content of concentrates				
		Class	Quantity	Gold	Silver	Copper	Lead	Zinc
Copper sulphide ore.....	Flotation.....	Copper sulphide.....	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Lead sulphide ore.....		do.....	Lead sulphide.....	⁴ 138, 924	8, 217. 55	1, 511, 690	73, 465, 613	-----
			68	232. 04	3, 299	330	36, 019	-----
Lead-zinc sulphide ore.....	do.....	do.....	888	17. 44	5, 336	9, 460	1, 153, 258	-----
		Zinc sulphide.....	64	2. 09	128	497	10, 443	61, 178
				952	19. 53	5, 464	9, 957	1, 163, 701	61, 178
Siliceous gold ore and old tailings.....	Gravity.....	Siliceous gold ⁵	⁴ 139, 944	8, 469. 12	1, 520, 453	73, 475, 900	1, 199, 720	61, 178
			⁵ 34	85. 61	148	1, 022	178	-----
			⁶ 139, 978	8, 554. 73	1, 520, 601	73, 476, 922	1, 199, 898	61, 178

¹ Includes copper ore treated by combined gravity and flotation.

² Includes 100 tons of old tailings.

³ Figures do not include ore treated at gold and silver mills.

⁴ Includes concentrates from copper ore treated by combined gravity and flotation.

⁵ Includes several classes of concentrates, including those from old tailings.

⁶ Figures do not include concentrates from ore treated at gold and silver mills.

Mine production of metals from concentrating mills in Montana in 1932, by counties, in terms of recovered metals

County	Ore and old tailings treated (dry weight)		Concentrates and recovered metal					
	Ore	Old tailings	Concentrates produced	Gold	Silver	Copper	Lead	Zinc
	Short tons	Short tons	Short tons	Fine ounces	Fine ounces	Pounds	Pounds	Pounds
Broadwater.....	2		1	2.30				
Deerlodge.....		160	16	31.94	3	830		
Lewis and Clark.....	16		8	10.20	65			
Lincoln.....	710		58	172.34	3,221	254	29,407	
Madison.....	16,275		1,256	5,793.25	11,051	77,809	4,896	
Powell.....	96		9	41.17	80	63	169	
Sanders.....	7,880		952	19.53	5,464	7,565	1,117,153	56,367
Silver Bow.....	615,285		137,678	2,484.00	1,500,717	72,307,447		
Total, 1931.....	640,264 1,898,777	160	139,978 364,373	8,554.73 18,973.04	1,520,601 3,579,262	72,393,968 168,033,995	1,151,625 4,501,885	56,367 619,141

Gross metal content of Montana concentrates produced in 1932, by classes of concentrates

Class of concentrates	Concentrates produced (dry weight)	Gross metal content				
		Gold	Silver	Copper	Lead	Zinc
	Short tons	Fine ounces	Fine ounces	Pounds	Pounds	Pounds
Dry and siliceous.....	638	1,613.05	2,084	3,496	429	
Copper.....	138,924	8,217.55	1,511,690	73,465,613		
Lead.....	957	252.48	8,708	9,790	1,189,441	
Zinc.....	64	2.09	128	497	10,443	61,178
Total, 1931.....	140,583 364,543	10,085.17 19,519.49	1,522,610 3,580,622	73,479,396 175,808,982	1,200,313 4,689,924	61,178 671,558

Mine production of metals from Montana concentrates in 1932, in terms of recovered metals

BY COUNTIES

	Concentrates	Gold	Silver	Copper	Lead	Zinc
	Short tons	Fine ounces	Fine ounces	Pounds	Pounds	Pounds
Beaverhead.....	15	93.60	124			
Broadwater.....	2	4.50	1			
Deerlodge.....	49	41.56	3	830		
Jefferson.....	5	3.22	15		45	
Lewis and Clark.....	8	10.20	65			
Lincoln.....	58	172.34	3,221	254	29,407	
Madison.....	1,597	6,664.71	12,705	79,752	5,246	
Park.....	202	540.84	202			
Powell.....	17	50.67	93	113	169	
Sanders.....	952	19.53	5,464	7,565	1,117,153	56,367
Silver Bow.....	137,678	2,484.00	1,500,717	72,307,447		
Total, 1931.....	140,583 364,543	10,085.17 19,519.49	1,522,610 3,580,622	72,395,961 168,034,547	1,152,020 4,503,469	56,367 619,141

BY CLASSES OF CONCENTRATES

Dry and siliceous.....	638	1,613.05	2,084	2,886	408	
Copper.....	138,924	8,217.55	1,511,690	72,385,248		
Lead.....	957	252.48	8,708	7,357	1,141,587	
Zinc.....	64	2.09	128	470	10,025	56,367

GOLD, SILVER, COPPER, LEAD, AND ZINC IN MONTANA 49

Gross metal content of Montana crude ore shipped to smelters in 1932, by classes of ore

Class of ore	Quantity (dry weight)	Gross metal content			
		Gold	Silver	Copper	Lead
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>
Dry and siliceous.....	12, 481	12, 569. 04	64, 966	41, 912	95, 024
Copper.....	22, 876	382. 21	54, 071	2, 775, 743	124
Lead.....	1, 094	476. 16	12, 768	6, 304	635, 439
Copper-lead.....	104	17. 30	5, 629	7, 552	39, 994
Total, 1931.....	36, 555 77, 215	13, 444. 71 10, 698. 23	137, 434 220, 182	2, 831, 516 7, 470, 130	770, 581 3, 214, 465

Mine production of metals from Montana crude ore shipped to smelters in 1932, in terms of recovered metals

BY COUNTIES

Ore	Gold	Silver	Copper	Lead	
<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	
Beaverhead.....	1, 301	761. 74	9, 802	5, 969	35, 900
Broadwater.....	2, 338	2, 150. 01	15, 232	2, 191	146, 437
Cascade.....	59	64. 97	6, 330	1, 825	15, 767
Deerlodge.....	1, 418	1, 675. 73	1, 526	4, 551	-----
Fergus.....	67	43. 18	228	206	-----
Granite.....	543	399. 28	641	2, 223	-----
Jefferson.....	1, 433	1, 020. 90	12, 177	7, 443	18, 366
Lewis and Clark.....	1, 226	1, 025. 86	5, 936	2, 730	45, 066
Lincoln.....	241	180. 00	1, 312	397	9, 893
Madison.....	2, 957	2, 771. 57	13, 663	12, 795	26, 787
Meagher.....	12	16. 30	7	64	-----
Mineral.....	24	3. 82	2, 461	1, 095	7, 100
Missoula.....	138	112. 52	71	333	-----
Park.....	2	38. 80	10	-----	-----
Phillips.....	172	1, 354. 84	2, 532	-----	-----
Powell.....	278	276. 89	8, 112	1, 347	3, 398
Ravalli.....	61	30. 04	14	32	-----
Sanders.....	974	103. 68	2, 763	107, 514	425, 614
Silver Bow.....	23, 309	1, 412. 69	54, 617	2, 633, 706	2, 600
Toole.....	2	1. 89	-----	-----	-----
Total, 1931.....	36, 555 77, 215	13, 444. 71 10, 698. 23	137, 434 220, 182	2, 784, 421 7, 127, 390	736, 928 3, 082, 622

BY CLASSES OF ORE

Dry and siliceous.....	12, 481	12, 569. 04	64, 966	39, 501	90, 242
Copper.....	22, 876	382. 21	54, 071	2, 734, 256	118
Lead.....	1, 094	476. 16	12, 768	4, 894	608, 333
Copper-lead.....	104	17. 30	5, 629	5, 770	38, 235

PRODUCTION BY MINING DISTRICTS

The first of the following tables summarizes the mine production of Montana in 1932, by districts, arranged alphabetically by counties, and the second shows the mine production of Silver Bow County in 1931 and 1932. The Summit Valley (Butte) district accounts for nearly all the production in Silver Bow County.

Mine production of gold, silver, copper, lead, and zinc in Montana in 1932, by counties and districts, in terms of recovered metals

County and district	Mines producing		Ore, old tailings, etc.	Gold	Silver	Copper	Lead	Zinc	Total value
	Lode	Placer							
Beaverhead County:			<i>Short tons</i>		<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	
Argenta.....	8	3	1,064	\$14,013	1,174	1,762	13,500		\$14,860
Bald Mountain.....	1		(1)	(1)	(1)	(1)			(1)
Bannack.....	2	4	15,004	78,698	6,507				80,533
Big Hole.....	3	2	39	710	21	16			717
Blue Wing.....	1		107	81	4,826	556			1,477
Bryant.....	1		67	225	3,752	3,302	22,400		2,163
Chinatown.....		1		104					104
Vipond.....	1		(1)	(1)					(1)
Wise River.....	1		49	1,468	21	238			1,489
Broadwater County:									
Backer.....	4	9	26	9,275	131	16			9,313
Beaver.....	15		1,527	23,981	13,358	1,270	103,567		30,935
Cedar Plains.....	23		16,134	79,175	887	603	4,566		79,600
Clasoli.....	1		131	1,567	507	79	32,800		2,699
Magpie Gulch.....		2		346					346
Park.....	14	5	126	2,263	819	238	5,667		2,679
Cascade County: Montana.....	4		59	1,343	6,330	1,825	15,767		3,716
Deerlodge County:									
Antelope Creek.....		1		51					51
Dry Gulch.....		2		193					193
French Gulch.....		1		41					41
Georgetown.....	8	1	5,832	64,401	837	5,317			64,972
Oro Fino.....	3		68	412	1,053	64			713
Fergus County:									
Christina.....		1		37					37
North Moccasin.....		2		322					322
Warm Springs.....	4	1	1,470	7,856	440	206			7,993
Granite County:									
Alps.....	1		41	464	14	286			486
Big Spring Creek.....		1		82					82
First Chance.....	8	10	267	6,462	188	1,000			6,578
Frog Pond Basin.....	2		116	2,010	397	508			2,154
Gold Creek.....	1	3	1	717	14				721
Henderson.....	1	2	(1)	(1)	(1)	(1)			(1)
Lower Willow Creek.....	1		20	277	4				278
Moose Lake.....	1		23	276	14	64			284
Racetrack Creek.....		1		262	14				266
Red Lion.....	2		56	532	14	143			545
Rock Creek.....		2		692	11				695
South Boulder.....	1	1	2	374					374
Welcome Gulch.....		1		130					130

Jefferson County:									
Bigfoot	1		(1)	(1)	31	(1)			(1) 31
Buffalo Creek		1			7,746	5,798	825	10,966	9,762
Cataract	9	5	433		885	3,280	3,873	3,167	2,149
Colorado	1		94		1,172	135		2,200	5,240
Elkhorn	3		3		4	57		1,500	65
Emery	1		3		66	14		500	85
Golconda	2		3		1,119	504	127		1,286
Homestake	10	1	45		482	7			484
Lump Gulch		3			3,312	358	270		3,430
Mitchell	2	2	163		573	11			576
Montana City	1	3	12		228				228
Pipestone		2			1	18			18
Sherman Gulch	1		1		13,633	2,450	2,555	333	14,495
Whitehall	12		1,268		1,021	25	16		1,029
Woodland Park	1		34						
Lewis and Clark County:									
Bald Butte	3		48		3,292	85		33	3,317
Bear Gulch	1		7		176	21	32		184
Blue Cloud	1		12		152	4	47		156
Dry Gulch		3			302				302
Grass Valley	1		8		2	67		200	27
Greenhorn	1	4	1		857	7			859
Heddleston	1		(1)	(1)		(1)		(1)	(1) 6,136
Helena	8	3	358		6,101	103	95		45
Hope Gulch		1			45				922
Lincoln		3			922				1,456
Magpie and Cave Gulches		4			1,453	11			133
Ophir Gulch	1		5		117	7	222		36,924
Ottawa	12	1	4,433		33,578	7,819	1,873	34,100	5,418
Scratch Gravel	9	2	543		5,309	323	159	266	275
Seven Mile Creek		2			275				139,002
Smelter	1		20,858			3,025		268,300	4,336,667
Stemple	7		202		14,706	2,156			15,314
Vaughn	4		149		1,377	1,078	302	10,467	2,014
Virginia Creek		2			172				172
Wolf Creek	1		(1)	(1)	(1)	(1)			(1)
Lincoln County:									
Libby	5	6	791		8,713	3,514	429	28,167	10,576
Sylvanite	1		361		1,167	1,032	222	11,133	1,806
Wolf Creek		1			40				40
Madison County:									
Alder Gulch	7	6	806		10,265	1,812	3,968		11,026
Bone Basin	1		20		508	21	63		578
Lower Hot Springs	10		127		2,338	99	572	33	2,403
McCarthy Mountain	2		15		438	7			440
Mineral Hill	6		10,244		137,933	12,305	79,825	500	146,447
Norwegian	9	1	119		4,964	227	841		5,081
Rabbit	12		141		3,732	291	238	7,267	4,047

¹ Included under "Undistributed."

Mine production of gold, silver, copper, lead, and zinc in Montana in 1932, by counties and districts, in terms of recovered metals—Continued

County and district	Mines producing		Ore, old tailings, etc.	Gold	Silver	Copper	Lead	Zinc	Total value
	Lode	Placer							
Madison County—Continued.			<i>Short tons</i>		<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	
Ramshorn.....	3	9	633	\$10,044	8,433	1,778			\$12,534
Sand Creek.....	6		117	1,602	234	254			1,684
Sheridan.....	13	2	2,578	18,139	929	2,746			18,574
Silver Star.....	5		82	2,933	117	302			2,985
Summit.....	5	2	1,135	6,491	539	16	287		6,652
Tidal Wave.....	20		400	13,667	1,064	1,190	23,433		14,735
Upper Hot Springs.....	7		115	1,839	209	318			1,918
Washington.....	6		222	8,201	752	524			8,462
West Fork of Madison River.....		2		456			533		456
Meagher County:									
Atlanta Creek.....		2		123					123
Beaver Creek.....		4		861	7				863
Little Belt.....	1		12	337	7	64			343
Thompson Gulch.....		1		353					353
Mineral County:									
Cedar Creek.....	3	22	13	16,489	39				16,500
Keystone.....	1		24	79	2,461	1,095	7,100		1,055
St. Regis.....		1		91					91
Missoula County:									
Coloma.....	6		138	2,326	71	333			2,367
Elk Creek.....		3		660	7				662
Nine Mile.....		10		2,016					2,016
Park County:									
Cowles.....		1		42					42
Crevasse.....	1		300	2,930	39				2,941
Emigrant Creek.....		6		6,196	46				6,209
New World.....	1		10	1,261	14				1,265
Sheepeater.....	1		2,738	28,801	305				28,887
Phillips County: Little Rockies.....	1	5	172	28,433	2,532				29,147
Powell County:									
Big Blackfoot.....	3	2	11	2,950	135		800		3,012
Blossburg.....	1		160	553	7				555
Deep Gulch.....	1		10	214	7	48			219
Deer Gulch.....		1		101					101
Deerlodge.....		1		103					103
Douglas Creek.....		1		351					351
Nigger Hill.....	9	1	52	787	326	32	2,767		964
Ophir.....	3	3	77	1,575	32	95			1,690
Pioneer.....	3	8	5	6,518	46				6,531

Racetrack Creek.....	1		(¹)	(¹)					(¹)
Snowshoe.....		2		222					222
Washington Gulch.....	3	7	95	2,197	71	63			2,221
Zozell.....	3		200	4,060	7,681	1,222			6,303
Ravalli County:									
Eight Mile Creek.....	1		(¹)	(¹)	(¹)	(¹)			(¹)
Overwich.....		3		646					646
Stevensville.....		1		98					98
Sanders County:									
Eagle.....	1		8,236	518	7,681	8,825	1,542,767	56,367	51,214
Revais Creek.....	1		618	2,029	546	106,254			8,877
Vermillion.....		3		463					463
Silver Bow County:									
Divide Creek.....	4		17	319	25	32			323
German Gulch.....		5		1,367	14				1,371
Highland.....	6	1	660	17,481	3,436	7,206			18,904
Independent.....	2		2	267	7				269
Little Pipestone Creek.....		2		208					208
Lost Child.....	2	1	60	762	96	143			798
Moose Creek.....		1		166					166
Summit Valley.....	5	4	652,228	65,897	1,560,174	84,600,413	2,600		5,835,770
Toole County: Goldbutte.....	1	3	2	407					407
Undistributed ²			187	2,611	78	349	100		2,658
Total Montana.....	390	232	765,014	839,318	1,686,213	84,847,349	2,157,766	4,393,034	6,856,737

¹ Included under "Undistributed."² Includes items entered as "(¹)" above.

Production of gold, silver, copper, and lead in Silver Bow County, Mont., 1931 and 1932, in terms of recovered metals

Year	Mines producing	Ore, old tailings, etc.	Gold (lode and placer)	Silver (lode and placer)	Copper ¹	Lead	Total value
1931.....	8	<i>Short tons</i> 1,869,348	\$206,934	<i>Fine ounces</i> 3,698,742	<i>Pounds</i> 184,361,869	<i>Pounds</i> -----	\$18,056,499
1932.....	33	652,967	86,467	1,563,752	84,607,794	2,600	5,857,814

¹ Includes copper recovered from precipitates, as follows: 1931, 9,092,564 pounds; 1932, 9,474,300 pounds.

From 1882 (the first year for which records are available) to the end of 1932 Silver Bow County, which includes the Butte district, yielded gold, silver, copper, lead, and zinc valued at \$2,172,624,646, as follows: Gold, \$37,373,984; silver, \$329,441,706; copper, \$1,577,522,969; lead, \$21,016,169; and zinc, \$207,269,818. These values represent 1,807,966.42 ounces of gold, 462,087,490 ounces of silver, 10,371,579,053 pounds of copper, 314,291,823 pounds of lead, and 2,567,395,925 pounds of zinc.

NATURAL GASOLINE

(DETAILED STATISTICS)

By G. R. HOPKINS AND E. M. SEELEY

SUMMARY

Summary of statistics for natural gasoline in the United States, 1920, 1925, 1930-32

	1920	1925	1930	1931	1932
Number of plants operating.....	1,154	1,081	1,035	937	830
Production:					
By States:					
California..... millions of gallons	48	303	830	680	552
Oklahoma..... do	179	391	591	455	379
Texas..... do	33	214	491	427	371
Louisiana..... do	11	43	74	58	46
West Virginia..... do	59	58	63	53	44
Other..... do	55	118	161	159	132
	385	1,127	2,210	1,832	1,524
By types of process:					
Compression process..... do	281	238	250	212	182
Absorption and combination processes..... do	104	882	1,942	1,609	1,333
Charcoal..... do		7	18	11	9
	385	1,127	2,210	1,832	1,524
Stocks at natural-gasoline plants at end of year... do	(1)	15	24	27	19
Value:					
Total (at plants)..... millions of dollars	72	120	128	64	49
Average per gallon (at plant)..... cents	18.7	10.7	5.8	3.5	3.2
Average spot price, Oklahoma natural gasoline... do	² 21.3	² 12.0	² 5.4	² 3.2	² 2.3
Natural gas treated..... millions of cubic feet	496,431	1,040,390	2,088,778	1,790,119	1,499,756
Average yield per thousand cubic feet..... gallons	0.78	1.08	1.06	1.02	1.02

¹ Figures not available.

² Grade A.

³ Grade 26-70.

PRODUCTION

Natural gasoline produced in the United States, 1920, 1925, 1930-32, by States, in thousands of gallons

Year	Alaska	Arkansas	California	Colorado	Illinois	Indiana	Kansas	Kentucky	Louisiana	New Mexico	New York
1920			48,208		6,055		4,331	4,497	10,610		411
1925	33	19,686	303,180	35	9,874		19,592	7,685	43,489		414
1930	39	30,637	829,713	1,322	6,867	2	35,106	6,641	73,693	3,663	208
1931	32	26,282	680,339	659	5,024	1	32,690	5,464	58,034	17,775	132
1932	25	18,653	551,897	472	4,558	1	24,792	4,877	46,199	17,507	117

Year	Ohio	Oklahoma	Pennsylvania	Texas	West Virginia	Wyoming	Total		
							Thousands of gallons	Value at plant	
								Thousands of dollars	Average per gallon (cents)
1920	10,016	178,857	21,151	32,956	58,941	8,711	384,744	71,788	18.7
1925	8,701	390,861	18,850	214,092	58,201	32,777	1,127,470	120,383	10.7
1930	8,937	591,194	16,713	491,299	63,323	51,132	2,210,494	128,160	5.8
1931	5,199	454,886	14,339	426,695	52,844	51,523	1,831,918	63,732	3.5
1932	5,163	378,584	11,685	371,106	43,773	44,391	1,523,800	49,244	3.2

Natural gasoline produced and natural gas treated in the United States in 1932, by States

State	Number of operators ¹	Number of plants operating	Natural gasoline produced			Natural gas treated	
			Thousands of gallons	Value at plant		Millions of cubic feet	Average yield per M cubic feet (gallons)
				Thousands of dollars	Average per gallon (cents)		
Alaska	1	1	25	4	16.0	19	1.32
Arkansas	10	12	18,653	557	3.0	6,188	3.01
California	45	109	551,897	25,085	4.5	345,085	1.60
Colorado	1	2	472	11	2.3	627	.75
Illinois	22	75	4,558	139	3.0	1,924	2.37
Indiana	1	1	1	(2)	12.6	(2)	1.25
Kansas	11	17	24,792	614	2.5	46,290	.54
Kentucky	6	6	4,877	177	3.6	23,948	.20
Louisiana	17	35	46,199	1,090	2.4	106,239	.43
Louisiana	2	2	17,507	377	2.2	9,230	1.90
New Mexico	1	1	117	10	8.5	430	.27
Ohio	13	22	5,163	229	4.4	24,613	.21
Oklahoma	77	208	378,584	8,803	2.3	315,727	1.20
Pennsylvania	76	115	11,685	535	4.6	28,627	.41
Texas	53	118	371,106	8,168	2.2	467,295	.79
West Virginia	30	97	43,773	1,612	3.7	100,171	.44
Wyoming	6	9	44,391	1,833	4.1	23,343	1.90
Total, 1932	302	830	1,523,800	49,244	3.2	1,499,756	1.02
Total, 1931	324	937	1,831,918	63,732	3.5	1,790,119	1.02

¹ A producer operating in more than one State is counted only once in arriving at total for all States.
² Less than \$500.
³ Less than 500,000 cubic feet.

Summary of monthly natural-gasoline statistics in the United States in 1932, in millions of gallons

	1932													1931 (total)	
	January	February	March	April	May	June	July	August	September	October	November	December	Total		
Production by fields:															
Appalachian.....	6.9	6.7	7.3	5.7	4.3	3.2	3.0	3.3	3.3	4.9	5.7	6.4	60.7	72.5	
Kentucky, Illinois, and Indiana.....	.7	.7	.9	.8	.7	.8	.7	.6	.8	.9	.9	.9	9.4	10.5	
Oklahoma:															
Oklahoma City.....	7.8	6.6	7.0	7.3	7.3	6.0	5.5	5.6	5.7	6.3	6.7	6.6	78.4	53.8	
Osage County.....	4.6	4.1	4.2	4.0	4.0	3.9	4.1	3.8	4.5	4.4	3.8	3.6	49.0	66.7	
Seminole.....	12.2	11.9	11.5	12.2	11.6	10.4	10.2	10.0	10.4	10.7	9.6	9.3	130.0	188.7	
Rest of State.....	11.4	11.1	10.6	9.9	10.5	9.7	10.1	9.4	9.3	10.1	9.9	9.2	121.2	145.7	
Total, Oklahoma.....	36.0	33.7	33.3	33.4	33.4	30.0	29.9	28.8	29.9	31.5	30.0	28.7	378.6	454.9	
Kansas.....	2.6	2.4	2.3	2.2	2.2	1.7	1.7	1.7	1.7	1.9	2.2	2.2	24.8	32.7	
Texas:															
East Texas.....	.3	.3	.4	.6	.8	1.0	1.1	1.3	1.4	1.3	1.2	.7	10.4	(1)	
North Texas.....	2.6	2.7	2.6	2.6	2.8	2.5	2.6	2.4	2.4	2.4	2.4	2.2	30.2	31.8	
Panhandle.....	16.6	15.9	16.2	15.4	15.2	14.4	14.5	14.9	14.0	14.6	15.4	15.5	182.6	212.3	
West central.....	8.1	7.5	7.7	7.5	7.1	6.2	6.7	6.7	7.1	7.4	7.2	6.7	85.9	109.7	
Rest of State.....	5.0	5.3	5.2	5.3	5.3	5.3	5.2	5.5	4.9	5.2	4.9	4.9	62.0	172.9	
Total, Texas.....	32.6	31.7	32.1	31.4	31.2	29.4	30.1	30.8	29.8	30.9	31.1	30.0	371.1	426.7	
Louisiana.....	4.7	4.4	4.4	4.2	4.0	3.8	3.5	3.7	3.5	3.6	3.2	3.2	46.2	58.0	
Arkansas.....	1.7	1.7	1.6	1.7	1.7	1.6	1.6	1.5	1.5	1.5	1.3	1.3	18.7	26.3	
Rocky Mountain.....	5.2	4.7	4.9	5.0	5.2	5.3	5.3	5.3	5.7	5.8	5.3	4.7	62.4	70.0	
California:															
Huntington Beach.....	1.4	1.3	1.5	1.4	1.6	1.4	1.4	1.4	1.3	1.2	1.2	1.3	16.4	21.1	
Kettleman Hills.....	13.5	12.4	11.8	10.9	11.3	10.3	10.2	10.6	10.2	10.4	10.2	13.4	135.2	172.1	
Long Beach.....	10.4	9.5	10.3	10.0	10.2	9.3	9.1	9.1	8.6	8.6	8.4	8.2	111.7	135.4	
Santa Fe Springs.....	9.4	8.6	8.6	8.7	8.8	8.1	8.3	8.2	7.8	8.4	7.5	7.5	99.9	123.1	
Ventura Avenue.....	4.7	4.5	3.9	3.3	3.4	2.9	3.1	3.2	3.3	3.5	3.7	4.2	43.7	55.1	
Rest of State.....	12.4	11.7	13.2	13.3	13.0	12.1	12.0	12.0	11.7	11.5	11.0	11.1	145.0	173.5	
Total, California.....	51.8	48.0	49.3	47.6	48.3	44.1	44.1	44.5	42.9	43.6	42.0	45.7	551.9	680.3	
Total, United States.....	142.2	134.0	136.1	132.0	131.0	119.9	119.9	120.2	119.1	124.6	121.7	123.1	1,523.8	1,831.9	
Daily average.....	4.6	4.6	4.4	4.4	4.2	4.0	3.9	3.9	4.0	4.0	4.1	4.0	4.2	5.0	
Stocks at end of period.....	34.0	36.8	39.8	44.6	44.3	34.1	31.8	25.9	24.6	24.2	20.1	18.8	18.8	27.1	
Indicated deliveries.....	135.3	131.2	133.1	127.2	131.3	130.1	122.2	126.1	120.4	125.0	125.8	124.4	1,532.1	1,829.1	

1 East Texas included under "Rest of State."

Natural gasoline produced in the United States in 1932, by States and by counties

State	County	Thousands of gallons	Thousands of dollars
Alaska.....	Third division.....	25	4
Arkansas.....	Ouachita.....	3, 031	93
	Union.....	15, 622	464
		18, 653	557
California.....	Fresno.....	20, 401	862
	Kern.....	40, 950	2, 124
	Kings.....	114, 821	6, 119
	Los Angeles.....	276, 212	11, 827
	Orange.....	31, 900	1, 418
	Santa Barbara.....	19, 364	760
	Ventura.....	48, 249	1, 975
		551, 897	25, 085
Colorado.....	Larimer.....	472	11
Illinois.....	Clark and Cumberland.....	495	18
	Crawford.....	1, 895	70
	Lawrence.....	2, 168	51
		4, 558	139
Indiana.....	Pike.....	1	(¹)
Kansas.....	Barber, McPherson, and Sedgwick.....	9, 381	269
	Butler, Chautauqua, and Sumner.....	2, 572	60
	Cowley.....	5, 319	129
	Greenwood.....	7, 520	156
		24, 792	614
Kentucky.....	Boyd, Clark, and Martin.....	4, 170	150
	Estill and Lee.....	707	27
		4, 877	177
Louisiana.....	Caddo.....	4, 443	118
	Claiborne.....	10, 932	255
	DeSoto, Morehouse, and Red River.....	1, 302	35
	Ouachita.....	3, 575	81
	Richland.....	22, 065	517
	Webster.....	3, 772	84
		46, 199	1, 090
New Mexico.....	Lea.....	17, 507	377
New York.....	Allegany.....	117	10
Ohio.....	Fairfield, Licking, Richland, and Wayne.....	4, 061	185
	Jefferson and Noble.....	165	7
	Monroe.....	292	12
	Washington.....	645	25
		5, 163	229
Oklahoma.....	Beckham, Custer, and Harmon.....	5, 750	124
	Carter.....	9, 100	200
	Creek.....	54, 472	1, 335
	Garfield.....	5, 402	144
	Hughes and Stephens.....	4, 439	96
	Kay.....	5, 185	116
	Lincoln and Logan.....	5, 763	132
	Muskogee.....	512	12
	Noble.....	8, 695	192
	Nowata.....	515	24
	Okfuskee.....	2, 948	65
	Oklahoma.....	78, 429	1, 507
	Okmulgee.....	4, 791	114
	Osage.....	48, 992	1, 205
	Pawnee.....	3, 829	95
	Payne.....	4, 232	84
	Pottawatomie.....	25, 944	626
	Seminole.....	104, 056	2, 587
	Tulsa.....	4, 221	109
	Wagoner and Washington.....	1, 311	36
		378, 584	8, 803

¹ Less than \$500.

Natural gasoline produced in the United States in 1932, by States and by counties—
Continued

State	County	Thousands of gallons	Thousands of dollars
Pennsylvania	Allegheny	1,149	47
	Armstrong, Elk, and Lawrence	36	3
	Beaver	93	5
	Butler	394	17
	Clarion	195	10
	Crawford	146	7
	Forest	450	21
	Greene	3,229	132
	McKean	1,413	72
	Venango	2,492	128
	Warren	1,487	69
	Washington	601	24
			11,685	535
Texas	Anderson, Panola, and Van Zandt	18,647	390
	Archer, Clay, Cooke, and Jack	4,233	93
	Austin and Refugio	9,001	211
	Brown and Comanche	3,410	66
	Carson	21,461	586
	Coleman and Shackelford	5,419	114
	Crane, Ector, and Reagan	34,957	604
	Eastland	38,526	806
	Erath and Palo Pinto	4,399	99
	Gray	81,785	1,832
	Gregg and Rusk	10,490	240
	Hutchinson	66,614	1,398
	Moore and Potter	6,866	146
	Stephens	34,123	802
	Wheeler	5,924	125
	Wichita	17,342	411
	Wilbarger and Young	8,599	185
		371,106	8,168
West Virginia	Brooke and Marshall	366	15
	Clay, Doddridge, and Gilmer	641	19
	Harrison	1,512	52
	Jackson	2,519	94
	Kanawha	16,539	595
	Lewis	4,748	158
	Lincoln and Wirt	1,080	36
	Marion	872	27
	Monongalia	493	16
	Pleasants	923	36
	Ritchie	473	19
	Roane	1,495	50
	Tyler	1,895	76
	Wetzel	10,217	419
		43,773	1,612
Wyoming	Carbon and Sweetwater	3,833	95
	Fremont, Hot Springs, and Niobrara	941	40
	Natrona	39,617	1,698
		44,391	1,833
United States		1,523,800	49,244

Natural gasoline produced in the United States in 1932, by States and by methods of manufacture

State	Number of plants operating			Production (thousands of gallons)		
	Com- pression	Absorp- tion ¹	Charcoal	Com- pression	Absorp- tion ¹	Char- coal
Alaska.....		1			25	
Arkansas.....	2	8	2	1,790	15,367	1,496
California.....	2	107		2,116	549,781	
Colorado.....		2			472	
Illinois.....	75			4,558		
Indiana.....	1				1	
Kansas.....	5	12		3,559	21,233	
Kentucky.....	2	3	1	198	3,967	712
Louisiana.....	8	27		4,192	42,007	
New Mexico.....		2			17,507	
New York.....		1			117	
Ohio.....	16	5	1	359	4,003	801
Oklahoma.....	73	135		70,516	308,068	
Pennsylvania.....	99	15	1	4,051	7,441	193
Texas.....	22	96		43,722	327,334	
West Virginia.....	59	31	7	11,225	26,766	5,782
Wyoming.....	3	6		35,173	9,213	
Total, 1932.....	367	451	12	181,465	1,333,351	8,984
Total, 1931.....	388	532	17	211,453	1,609,293	11,172

¹ Includes combination of absorption process with compression and charcoal processes.

CONSUMPTION

Distribution of natural gasoline in 1932, by months, in thousands of gallons

	January	February	March	April	May	June
Production.....	142,200	134,000	136,100	132,000	131,000	119,900
Decrease in stocks.....					3,161	15,675
	142,200	134,000	136,100	132,000	134,161	135,575
Blended at refineries.....	95,718	75,054	76,062	73,582	84,504	83,706
Run through pipe lines in California.....	4,956	4,200	4,573	5,334	4,704	4,200
Blended at plants ¹	128	137	126	132	125	131
Exports and sales to jobbers.....	18,430	17,472	19,530	17,976	26,670	26,880
Increase in stocks.....	6,022	22,991	21,915	13,038		
Losses.....	16,896	14,146	13,889	16,938	18,158	20,658
	142,200	134,000	136,100	132,000	134,161	135,575

	July	August	Septem- ber	October	Novem- ber	Decem- ber	The year
Production.....	119,900	120,200	119,100	124,600	121,700	123,100	1,523,800
Decrease in stocks.....	71	8,399	7,896	1,898	17,142		
	119,971	128,599	126,996	126,498	138,842	123,100	1,523,800
Blended at refineries.....	82,488	85,092	100,002	105,420	96,306	90,468	1,053,402
Run through pipe lines in Cali- fornia.....	4,536	4,788	3,402	3,528	4,032	4,284	52,542
Blended at plants ¹	127	157	159	273	253	295	2,043
Exports and sales to jobbers.....	21,546	25,830	16,834	11,424	22,722	11,046	236,460
Increase in stocks.....						6,196	15,920
Losses.....	11,274	12,732	6,549	5,853	15,529	10,811	163,433
	119,971	128,599	126,996	126,498	138,842	123,100	1,523,800

¹ East of California.

Natural gasoline blended at refineries in the United States in 1932, by districts and months, in thousands of gallons

	January	February	March	April	May	June
East coast.....	5,418	2,940	1,344	1,596	1,932	1,134
Appalachian.....	1,302	1,344	1,050	1,176	966	1,092
Indiana, Illinois, Kentucky, etc.....	9,492	7,896	5,040	4,158	4,158	4,578
Oklahoma, Kansas, and Missouri.....	17,136	13,650	14,700	15,540	14,322	15,540
Texas:						
Gulf coast.....	11,382	7,896	8,946	12,558	15,960	13,230
Rest of State.....	11,550	10,542	9,576	7,980	7,014	8,988
Total, Texas.....	22,932	18,438	18,522	20,538	22,974	22,218
Louisiana-Arkansas:						
Louisiana Gulf coast.....	3,108	2,184	5,502	2,268	4,662	4,620
Northern Louisiana and Arkansas.....	3,108	2,940	3,024	3,528	2,898	2,982
Total, Louisiana and Arkansas.....	6,216	5,124	8,526	5,796	7,560	7,602
Rocky Mountain.....	3,780	2,940	2,982	2,814	3,192	3,612
California ¹	34,398	26,922	28,476	32,298	34,104	32,130
Total, United States:						
1932.....	100,674	79,254	80,640	83,916	89,208	87,906
1931.....	135,996	129,822	129,402	120,834	130,074	122,178

	July	August	September	October	November	December	The year
East coast.....	672	882	882	1,722	4,158	4,242	26,922
Appalachian.....	1,260	1,092	966	2,730	1,680	1,176	15,834
Indiana, Illinois, Kentucky, etc.....	4,032	6,174	7,392	8,358	9,492	7,308	78,078
Oklahoma, Kansas, and Missouri.....	15,372	17,472	19,824	21,126	19,782	19,110	203,574
Texas:							
Gulf coast.....	13,818	9,450	10,374	12,096	7,182	11,550	134,442
Rest of State.....	7,476	14,574	19,488	15,666	13,356	10,206	136,416
Total, Texas.....	21,294	24,024	29,862	27,762	20,538	21,756	270,858
Louisiana-Arkansas:							
Louisiana Gulf coast.....	4,956	2,814	1,008	1,848	1,050	1,008	35,028
Northern Louisiana and Arkansas.....	2,520	3,192	3,150	2,688	2,058	1,680	33,768
Total, Louisiana and Arkansas.....	7,476	6,006	4,158	4,536	3,108	2,688	68,796
Rocky Mountain.....	3,444	3,360	4,158	4,536	3,654	3,150	41,622
California ¹	33,474	30,870	36,162	38,178	37,926	35,322	400,260
Total, United States:							
1932.....	87,024	89,880	103,404	108,948	100,338	94,752	1,105,944
1931.....	113,022	106,764	115,668	133,602	124,278	113,232	1,474,872

¹ Includes natural gasoline run through pipe lines.

Natural gasoline and naphtha used in motor blends at natural-gasoline plants in the United States (east of California) in 1932, by districts and months, in thousands of gallons

	January	February	March	April	May	June
Natural gasoline:						
Appalachian.....	43	45	43	33	50	36
Oklahoma-Kansas.....	39	44	38	75	58	59
Texas.....	29	36	27	12	7	34
Louisiana-Arkansas.....	17	9	18	12	10	2
Rocky Mountain.....						
Total.....	128	137	126	132	125	131
Naphtha:						
Appalachian.....	60	62	49	50	71	62
Oklahoma-Kansas.....	62	62	65	64	67	42
Texas.....	153	153			1	4
Louisiana-Arkansas.....	6	3	9	7	4	1
Rocky Mountain.....						
Total.....	281	280	123	121	143	109

Natural gasoline and naphtha used in motor blends at natural-gasoline plants in the United States (east of California) in 1932, by districts and months, in thousands of gallons—Continued

	July	August	September	October	November	December	The year
Natural gasoline:							
Appalachian.....	36	40	40	38	34	32	473
Oklahoma-Kansas.....	48	64	74	64	75	61	699
Texas.....	29	33	32	105	76	87	507
Louisiana-Arkansas.....				46	47	93	254
Rocky Mountain.....	14	20	13	20	21	22	110
	127	157	159	273	253	295	2,043
Naphtha:							
Appalachian.....	57	61	62	55	56	51	696
Oklahoma-Kansas.....	45	69	64	61	28	20	649
Texas.....	4	4	5	102	83	54	563
Louisiana-Arkansas.....				8	8	14	60
Rocky Mountain.....	3	4	6	3	3		19
	109	138	137	229	178	139	1,987

STOCKS

Stocks of natural gasoline held at plants and at refineries in the United States at end of each month of 1932, by refining districts, in thousands of gallons

District	January	February	March	April	May	June
East coast:						
At refineries.....	2,058	6,174	5,334	3,990	2,520	1,848
Appalachian:						
At plants.....	3,878	4,852	6,328	6,827	6,807	5,066
At refineries.....	378	336	126	126	84	84
Indiana, Illinois, and Kentucky:						
At plants.....	247	311	760	798	424	525
At refineries.....	2,562	2,436	1,680	1,722	1,428	1,176
Oklahoma-Kansas:						
At plants.....	11,823	13,096	13,642	15,682	18,426	14,122
At refineries.....	1,764	1,722	1,344	798	1,050	672
Texas:						
At plants.....	8,943	9,746	10,253	12,583	11,698	10,198
At refineries.....	8,946	13,524	15,540	14,532	13,356	11,214
Louisiana-Arkansas:						
At plants.....	1,522	1,562	1,656	1,520	1,533	1,135
At refineries.....	504	714	210	126	168	672
Rocky Mountain:						
At plants.....	649	688	661	738	686	701
At refineries.....		126	168	126	210	168
California:						
At plants.....	6,912	6,508	6,478	6,436	4,705	2,359
At refineries.....	74,172	85,554	105,084	116,298	116,046	113,526
Total, 1932:						
At plants.....	33,974	36,763	39,778	44,584	44,279	34,106
At refineries.....	90,384	110,586	129,486	137,718	134,862	129,860
Total, 1931:						
At plants.....	25,470	29,079	37,115	42,254	41,837	36,129
At refineries.....	111,132	109,032	118,230	126,462	127,386	132,720

Stocks of natural gasoline held at plants and at refineries in the United States at end of each month of 1932, by refining districts, in thousands of gallons—Continued

District	July	August	September	October	November	December
East coast:						
At refineries.....	1,512	882	294	420	1,050	3,822
Appalachian:						
At plants.....	4,028	2,335	1,606	1,669	1,695	1,746
At refineries.....	42	42	84	84	84	84
Indiana, Illinois, and Kentucky:						
At plants.....	290	152	222	229	205	191
At refineries.....	924	1,302	1,722	1,722	1,470	2,100
Oklahoma-Kansas:						
At plants.....	14,860	12,894	11,759	10,320	7,549	6,121
At refineries.....	546	966	462	882	1,008	924
Texas:						
At plants.....	8,200	7,079	7,019	7,258	6,155	6,388
At refineries.....	10,038	7,266	5,586	6,930	8,274	9,366
Louisiana-Arkansas:						
At plants.....	1,087	818	1,088	1,178	1,003	879
At refineries.....	294	126	126	126	210	168
Rocky Mountain:						
At plants.....	675	366	666	774	1,021	879
At refineries.....	210	126	126	210	168	210
California:						
At plants.....	2,669	2,244	2,268	2,772	2,450	2,636
At refineries.....	118,020	118,398	114,072	110,628	95,718	98,742
Total, 1932:						
At plants.....	31,809	25,888	24,628	24,200	20,078	18,840
At refineries.....	131,586	129,108	122,472	121,002	107,982	115,416
Total, 1931:						
At plants.....	35,925	30,344	25,808	21,993	26,924	27,070
At refineries.....	119,952	104,664	103,908	86,226	81,690	91,266

Stocks of motor blends held at natural-gasoline plants in the United States at end of each month of 1932, by districts, in thousands of gallons

District	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Appalachian.....	152	144	152	138	139	131	120	99	82	96	94	82
Oklahoma-Kansas.....	53	47	46	59	63	60	62	77	119	110	71	69
Texas.....	22	22	4	6	1	6	4	5	6	31	26	34
Louisiana-Arkansas.....	15	9	15	14	14	5	4	4	3	14	11	58
Rocky Mountain.....							14	9	8	10	8	6
Total, 1932.....	242	222	217	217	217	202	204	194	218	261	210	249
Total, 1931.....	485	515	456	398	401	335	389	452	379	350	329	306

LIQUEFIED PETROLEUM GASES

Marketed production of liquefied petroleum gases in the United States, 1922-32

Year	Gallons	Year	Gallons	Year	Gallons	Year	Gallons
1922.....	222,641	1925.....	403,674	1928.....	4,522,899	1931.....	123,769,576
1923.....	276,863	1926.....	465,085	1929.....	9,930,964	1932.....	33,630,236
1924.....	376,488	1927.....	1,091,005	1930.....	18,017,347		

¹Revised figures.

Marketed production of liquefied petroleum gases in the United States in 1932, by classes, uses, and methods of shipment, in gallons

	1932					1931 (total)	
	Propane	Butane	Pentane and propane-butane mixtures	Total		Gallons	Percent
				Gallons	Per cent		
Use:							
Domestic.....	14, 570, 392	81, 981	1, 119, 199	15, 771, 572	46.9	15, 294, 648	¹ 53.2
Gas manufacturing.....	257, 407	7, 225, 851	2, 208, 212	9, 691, 470	28.8	¹ 6, 303, 242	¹ 21.9
Industrial and miscellaneous.....	354, 072	7, 353, 856	459, 266	8, 167, 194	24.3	¹ 7, 171, 686	¹ 24.9
	15, 181, 871	14, 661, 688	3, 786, 677	33, 630, 236	100.0	¹ 28, 769, 576	100.0
Shipped in—							
Cylinders or drums.....	13, 416, 567	2, 951	960, 451	14, 379, 969	42.8	14, 006, 180	48.7
Tank cars, tank wagons, or pipe lines.....	1, 765, 304	14, 658, 737	2, 826, 226	19, 250, 267	57.2	14, 763, 396	51.3
	15, 181, 871	14, 661, 688	3, 786, 677	33, 630, 236	100.0	¹ 28, 769, 576	100.0

¹ Revised figures.

PRICES

Spot price of Oklahoma natural gasoline, grade 26-70, on specified dates in 1932, with monthly and yearly averages in cents per gallon

[National Petroleum News]

Date	Cents	Date	Cents	Date	Cents
Jan. 1.....	2.00-2.13	May 2.....	2.00-2.13	Sept. 6.....	2.25
Jan. 4.....	2.00-2.13	May 9.....	2.00	Sept. 12.....	2.25
Jan. 11.....	2.00-2.13	May 16.....	1.88	Sept. 19.....	2.25-2.38
Jan. 18.....	2.25	May 23.....	1.88-2.00	Sept. 26.....	3.00
Jan. 25.....	2.25	May 31.....	1.75	Average.....	2.45
Average.....	2.14	Average.....	1.93	Oct. 3.....	2.88
Feb. 1.....	1.88-2.00	June 6.....	1.75	Oct. 10.....	2.50
Feb. 8.....	1.50-1.63	June 13.....	2.25	Oct. 17.....	3.00
Feb. 15.....	1.38-1.50	June 20.....	2.25	Oct. 24.....	3.25
Feb. 22.....	1.38-1.50	June 27.....	2.25	Oct. 31.....	3.25
Feb. 29.....	1.38	Average.....	2.13	Average.....	2.98
Average.....	1.55	July 5.....	2.00-2.13	Nov. 7.....	2.88-3.00
Mar. 7.....	1.38	July 11.....	2.00	Nov. 14.....	2.50-2.63
Mar. 14.....	1.63	July 18.....	2.00-2.13	Nov. 21.....	2.50-2.63
Mar. 21.....	1.75	July 25.....	2.25	Nov. 28.....	2.75
Mar. 28.....	2.00	Average.....	2.09	Average.....	2.70
Average.....	1.69	Aug. 1.....	2.25-2.38	Dec. 5.....	2.88-3.00
Apr. 4.....	2.13-2.25	Aug. 8.....	2.25-2.38	Dec. 12.....	3.00
Apr. 11.....	2.25	Aug. 15.....	2.25-2.38	Dec. 19.....	2.88-3.00
Apr. 18.....	2.13-2.25	Aug. 22.....	2.25	Dec. 27.....	2.50-2.63
Apr. 25.....	2.13-2.25	Aug. 29.....	2.25	Average.....	2.86
Average.....	2.20	Average.....	2.29	Average, 1932.....	2.25
				1931.....	¹ 3.24

¹ Grade A—Oil and Gas Journal.

SUMMARY OF NATURAL-GAS STATISTICS

Summary of statistics for natural gas in the United States, 1920, 1925, 1930-32

	1920	1925	1930	1931	1932			
Produced and delivered to consumers:								
Arkansas.....millions of cubic feet..	9, 027	41, 878	18, 585	13, 300	10, 235			
California.....do.....	66, 041	187, 789	334, 789	305, 930	263, 484			
Kansas.....do.....	21, 158	26, 917	37, 630	38, 742	40, 690			
Kentucky.....do.....	3, 345	10, 770	28, 023	27, 870	29, 005			
Louisiana.....do.....	58, 274	152, 620	278, 341	224, 155	201, 561			
Ohio.....do.....	58, 938	43, 235	63, 394	56, 326	51, 466			
Oklahoma.....do.....	154, 467	249, 285	348, 116	263, 685	255, 487			
Pennsylvania.....do.....	125, 787	101, 632	88, 706	74, 797	61, 611			
Texas.....do.....	37, 063	134, 872	517, 880	464, 580	456, 832			
West Virginia.....do.....	239, 719	180, 345	144, 180	124, 797	100, 540			
Wyoming.....do.....	10, 312	45, 539	43, 219	39, 770	28, 938			
Other.....do.....	14, 079	13, 689	40, 558	52, 484	56, 141			
	798, 210	1, 188, 571	1, 943, 421	1, 686, 436	1, 555, 990			
Consumed:								
Domestic.....do.....	} 286, 001	272, 146	{ 295, 700	294, 406	298, 520			
Commercial.....do.....						{ 80, 707	86, 491	87, 367
Industrial:								
Field.....do.....	202, 108	423, 524	723, 165	571, 365	529, 378			
Carbon-black plants.....do.....	40, 599	140, 366	266, 625	195, 396	168, 237			
Petroleum refineries.....do.....	(¹)	87, 842	98, 842	75, 548	67, 467			
Electric public-utility power plants ².....do.....	24, 702	46, 521	120, 290	138, 343	107, 239			
Portland cement plants ³.....do.....	(¹)	(¹)	41, 256	31, 381	} 296, 127			
Other industrial.....do.....	244, 800	218, 040	315, 059	291, 319				
	798, 210	1, 188, 439	1, 941, 644	1, 684, 249	1, 554, 335			
Domestic.....percent.....	} 36	23	{ 16	18	19			
Commercial.....do.....						{ 4	5	6
Industrial.....do.....						{ 80	77	75
Treated for natural gasoline:								
Total.....millions of cubic feet.....	496, 431	1, 040, 390	2, 088, 778	1, 790, 119	1, 499, 756			
Percent of total consumption.....do.....	62	88	108	106	96			
Consumers:								
Domestic.....thousands.....	} 2, 615	3, 508	{ 5, 035	4, 643	6, 506			
Commercial.....do.....						{ 413	518	531
Industrial.....do.....						{ 21	28	30
Value (at wells) of gas produced:								
Total.....thousands of dollars.....	(⁴)	112, 047	147, 048	117, 505	98, 985			
Average per M cubic feet.....cents.....	(⁴)	9. 4	7. 6	7. 0	6. 4			
Value (at points of consumption) of gas consumed:								
Total.....thousands of dollars.....	196, 194	265, 184	415, 519	392, 156	384, 123			
Domestic.....do.....	} 109, 302	152, 494	{ 200, 615	208, 262	223, 377			
Commercial.....do.....						{ 38, 558	41, 347	44, 000
Industrial.....do.....						{ 86, 892	112, 690	142, 547	116, 746
Average per M cubic feet:								
Domestic.....cents.....	(⁴)	(⁴)	67. 8	70. 7	74. 8			
Commercial.....do.....	(⁴)	(⁴)	47. 8	47. 8	50. 4			
Industrial.....do.....	17. 0	12. 3	11. 3	10. 9	10. 0			
Domestic and commercial.....do.....	38. 2	56. 0	63. 5	65. 5	69. 3			
Domestic, commercial, and industrial.....do.....	24. 6	22. 3	21. 4	23. 3	24. 7			

¹ Included under "Other industrial"; separate figures not available.

² U. S. Geological Survey.

³ Bagley, B. W., Mineral Resources, chapters on Cement.

⁴ Revised figures.

⁵ Figures not available.

⁶ Exclusive of oil- and gas-field operators.

LIME

(DETAILED STATISTICS)

By A. T. COONS

PRODUCTION

Lime sold by producers in the United States, 1928-32

Year	Number of plants in operation	Short tons	Value ¹	
			Total	Average
1928.....	411	4,458,412	\$36,449,635	\$8.18
1929.....	381	4,269,768	33,478,848	7.84
1930.....	375	3,387,880	25,616,486	7.56
1931.....	345	2,707,614	18,674,913	6.90
1932.....	343	1,959,990	12,302,231	6.28

¹ Value given represents value of bulk lime f. o. b. at point of shipment and does not include cost of barrel or package.

Lime sold by producers in the United States in 1932, by States

State	Number of plants in operation	Short tons	Value	State	Number of plants in operation	Short tons	Value
Alabama.....	8	92,359	\$492,248	New Jersey.....	2	(¹)	(¹)
Arizona.....	4	11,061	119,138	New Mexico.....	3	990	\$8,800
Arkansas.....	2	(¹)	(¹)	New York.....	10	29,391	231,504
California.....	10	29,925	284,467	North Carolina.....	1	(¹)	(¹)
Colorado.....	2	(¹)	(¹)	Ohio.....	24	475,485	2,511,368
Connecticut.....	1	(¹)	(¹)	Pennsylvania.....	114	374,244	2,327,131
Florida.....	3	10,841	99,387	Puerto Rico.....	11	9,366	136,364
Georgia.....	1	3,567	21,176	Rhode Island.....	1	1,927	22,410
Hawaii.....	1	6,292	80,997	South Dakota.....	2	(¹)	(¹)
Idaho.....	2	(¹)	(¹)	Tennessee.....	10	106,706	496,200
Illinois.....	6	62,436	450,033	Texas.....	8	35,903	340,859
Indiana.....	8	58,440	351,240	Utah.....	8	9,092	93,060
Kentucky.....	1	(¹)	(¹)	Vermont.....	7	29,187	207,032
Maine.....	3	23,354	186,251	Virginia.....	22	78,771	435,085
Maryland.....	12	26,536	171,312	Washington.....	5	18,862	199,617
Massachusetts.....	6	68,959	527,305	West Virginia.....	16	82,757	427,241
Michigan.....	4	38,610	267,520	Wisconsin.....	11	27,283	209,868
Minnesota.....	2	(¹)	(¹)	Undistributed.....	-----	72,203	556,415
Missouri.....	9	174,427	1,034,850				
Montana.....	1	1,016	13,353				
Nevada.....	2	(¹)	(¹)				
					343	1,959,990	12,302,231

¹ Included under "Undistributed."

Lime sold by producers in the United States in 1932, by uses

Use	Quantity		Value	
	Percent of total	Short tons	Total	Average
Agricultural.....	12.5	244,574	\$1,366,771	\$5.59
Building.....	30.4	596,825	3,850,950	6.45
Chemical:				
Glassworks.....	2.6	51,142	259,973	5.08
Metallurgy.....	8.7	170,518	936,291	5.49
Paper mills.....	13.2	259,418	1,491,160	5.75
Refractory lime (dead-burned dolomite).....	6.9	135,733	1,055,339	7.78
Sugar refineries.....	1.2	22,628	249,695	11.03
Tanneries.....	2.4	45,943	301,873	6.57
Water purification.....	7.3	142,594	881,652	6.18
Other uses ¹	14.8	290,615	1,908,527	6.57
Total chemical.....	57.1	1,118,591	7,084,510	6.33
Hydrated lime (included in above totals).....	100.0	1,959,990	12,302,231	6.28
	43.5	852,251	5,370,273	6.30

¹ Details of distribution shown in table on p. 70.

Lime sold by producers in the United States in 1932, by States and uses

73801-91-9

State	Building		Agricultural		Chemical												Total		
	Short tons	Value	Short tons	Value	Glass works		Paper mills		Sugar refineries		Tanneries		Metallurgy		Other chemical		Short tons	Value	
					Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value			Short tons	Value
Alabama	21,249	\$124,288					31,841	\$141,487	3,555	\$19,375			16,488	\$95,798	19,226	\$111,300	92,359	\$492,248	
Arizona	3,728	41,410	(1)	(1)							(1)	(1)	2,771	18,195	(1)	(1)	11,061	119,138	
Arkansas	(1)	(1)	(1)	(1)									(1)	(1)	(1)	(1)	(1)	(1)	
California	14,877	150,395	1,544	\$10,347								450	\$4,615	2,831	27,199	8,777	79,488	29,925	284,467
Colorado	(1)	(1)	(1)	(1)													(1)	(1)	
Connecticut	(1)	(1)	(1)	(1)													(1)	(1)	
Florida	2,020	18,436	(1)	(1)												6,603	59,966	10,841	99,387
Georgia	3,567	21,176															3,567	21,176	
Hawaii	314	4,712	150	524					5,828	75,761							6,292	80,997	
Idaho	(1)	(1)	(1)	(1)													(1)	(1)	
Illinois	12,149	92,867	(1)	(1)	(1)	(1)	3,805	23,476			(1)	(1)	(1)	(1)	28,254	209,012	62,436	450,033	
Indiana	11,931	70,626	(1)	(1)	(1)	(1)	12,234	61,683			2,448	16,519	3,782	19,054	25,863	174,522	58,440	351,240	
Kentucky	(1)	(1)	(1)	(1)											(1)	(1)	(1)	(1)	
Maine	7,241	75,748	4,013	22,208			10,884	76,808			120	995			1,096	10,492	23,354	186,251	
Maryland	(1)	(1)	26,050	168,386											(1)	(1)	26,536	171,312	
Massachusetts	37,272	310,956	6,317	36,340			9,557	69,806	(1)	(1)	(1)	(1)			12,234	80,694	68,959	527,305	
Michigan	687	3,882	(1)	(1)			31,028	220,774			(1)	(1)			4,355	25,737	38,610	267,520	
Minnesota	(1)	(1)	(1)	(1)			(1)	(1)			(1)	(1)			(1)	(1)	(1)	(1)	
Missouri	30,763	229,639	417	2,647	(1)	(1)	15,101	68,869	(1)	(1)	1,925	11,658	18,833	90,262	106,933	628,825	174,427	1,034,850	
Montana	800	10,496											166	2,207	50	650	1,016	13,353	
Nevada	(1)	(1)	(1)	(1)											(1)	(1)	(1)	(1)	
New Jersey	(1)	(1)															(1)	(1)	
New Mexico	(1)	(1)															(1)	(1)	
New York	3,176	23,698	5,992	41,378			3,818	32,358	(1)	(1)	(1)	(1)	4,882	38,142	8,282	67,807	29,391	231,504	
North Carolina	(1)	(1)															(1)	(1)	
Ohio	247,708	1,151,822	40,200	153,437	47,143	\$233,931	20,531	105,792			(1)	(1)	(1)	(1)	100,966	773,195	475,485	2,511,368	
Pennsylvania	62,790	458,481	127,686	750,105	(1)	(1)	22,884	139,291	(1)	(1)	14,966	89,570	46,092	230,571	98,092	647,059	374,244	2,327,131	
Puerto Rico	756	11,947	879	5,935					7,620	116,920					111	1,562	9,366	136,364	
Rhode Island	865	11,350	973	9,244											89	1,816	1,927	22,410	
South Dakota	(1)	(1)													(1)	(1)	(1)	(1)	
Tennessee	25,689	172,807	(1)	(1)			42,813	175,009	(1)	(1)	1,665	8,222	11,981	43,411	21,765	85,563	106,706	496,200	
Texas	17,908	167,757	(1)	(1)	(1)	(1)					(1)	(1)	3,564	20,024	13,947	148,478	35,903	340,859	
Utah	2,236	26,579											5,959	53,313	897	13,168	9,092	93,060	
Vermont	8,923	70,858	1,812	8,374							1,182	9,568	(1)	(1)	12,491	85,950	29,187	207,032	
Virginia	23,603	143,916	12,089	65,437			5,985	29,658	(1)	(1)	5,291	27,201	(1)	(1)	31,174	161,088	78,771	435,085	
Washington	5,221	66,982	(1)	(1)	(1)	(1)	9,612	87,324	(1)	(1)	(1)	(1)	(1)	(1)	2,641	30,949	18,862	199,617	
West Virginia	10,065	54,073	9,967	49,642	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	10,155	47,300	43,646	230,438	82,757	427,241	
Wisconsin	14,775	106,525	396	2,516			9,069	61,028							(1)	(1)	27,283	209,868	
Undistributed	26,612	224,524	6,189	40,251	3,999	26,042	30,256	197,797	5,625	37,639	17,896	133,525	43,014	250,815	21,450	217,759	72,208	556,415	
	596,826	3,850,950	244,574	1,366,771	51,142	259,973	259,418	1,491,160	22,628	249,695	45,943	301,873	170,518	936,291	568,942	3,845,518	1,959,990	12,302,231	

1 Included under "Undistributed."

LIME

BUILDING LIME

Lime sold by Ohio producers for construction, 1930-32¹

	1930		1931		1932	
	Short tons	Value	Short tons	Value	Short tons	Value
Quicklime.....	9,090	\$62,472	4,946	\$31,832	2,618	\$14,705
Hydrated lime.....	428,684	3,268,271	373,454	2,126,805	245,090	1,137,117
	437,774	3,330,743	378,400	2,158,637	247,708	1,151,822

¹ Ohio produced 36 percent of the total building lime sold by producers in 1930, 40 percent in 1931, and 41.5 percent in 1932.

Shipments of hydrated lime from plants in the United States and in Ohio in 1932, by destinations

Destination	From all plants		From Ohio plants		
	Short tons	Distribution (per cent)	Short tons	Distribution (per cent)	Group total (per cent)
Illinois, Indiana, Michigan, Ohio.....	195,098	22.9	123,039	42.0	63.1
Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania, West Virginia.....	349,645	41.0	119,680	40.9	34.2
Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont.....	42,647	5.0	10,947	3.7	25.7
Florida, Georgia, North Carolina, South Carolina, Virginia.....	62,281	7.3	11,959	4.1	19.2
Alabama, Kentucky, Louisiana, Mississippi, Tennessee.....	38,940	4.6	6,735	2.3	17.3
Arkansas, Iowa, Kansas, Minnesota, Missouri, Nebraska, Oklahoma, Texas, Wisconsin.....	115,511	13.6	15,435	5.3	13.4
Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, Wyoming.....	35,288	4.1	2,303	.8	6.5
Undistributed and exports.....	12,841	1.5	2,644	.9	20.6
	852,251	100.0	292,742	100.0	34.3

CHEMICAL LIME

Chemical lime sold by producers in the United States for "other uses" in 1932

Use	Short tons	Value	Use	Short tons	Value
Alcohol manufacture and dehydration.....	2,017	\$12,438	Oil and fat manufacture.....	16,542	\$149,542
Alkali works (ammonia, soda, potash).....	7,942	28,939	Paint (calcimine, whitewash, varnish, etc.).....	9,794	69,299
Bleaching powder.....	7,697	52,513	Rubber.....	2,310	16,641
Bleach, liquid.....	11,676	78,989	Salt refining.....	1,503	9,209
Calcium acetate.....	3,000	16,500	Sand-lime and slag brick.....	13,524	88,929
Calcium carbide.....	22,833	98,697	Silica brick.....	2,969	18,845
Coke and gas manufacture (gas purification and plant byproducts).....	17,224	104,742	Soap.....	15,681	70,828
Food products.....	6,883	42,980	Textiles.....	735	6,067
Glue.....	3,266	21,416	Wood distillation.....	1,754	11,167
Insecticides (spraying materials).....	22,192	166,709	Undistributed ¹	32,801	284,718
			Unspecified.....	88,272	559,359
				290,615	1,908,527

¹ Lime used in acid neutralization and drying, acetic acid, asbestos, asphalt and fertilizer filler, buffing compounds, ceramics, corn products, cosmetics, creameries and dairies, depilatories, disinfectants (chloride of lime, etc.), dyes, explosives, flotation, flour mills, gasoline, gelatin (edible), graphite grease, helium gas, ice, insulators, magnesia, medicine, oil refining, oxygen purification, retarder, rubber, sanitation, stock food, sulphur mining, tobacco, and wheat cleaning.

AGRICULTURAL LIME

Agricultural lime and other liming materials sold by producers in the United States in 1932, by kinds

Kind	Short tons		Value	
	Gross	Effective lime content	Total	Average
Lime from limestone:				
Quicklime.....	71,858	60,500	\$343,501	\$4.78
Hydrated.....	172,716	114,400	1,023,270	5.92
Lime from oyster shells ¹	10,626	8,900	44,688	4.21
Limestone and marble (pulverized).....	910,430	391,500	1,230,542	1.35
Calcareous marl.....	11,575	5,100	28,000	2.42

¹ Bureau of Fisheries, Statistical Bull. 1026, 1933, p. 7.

HYDRATED LIME

Hydrated lime sold by producers in the United States, 1928-32

Year	Number of plants in operation	Short tons	Value	
			Total	Average
1928.....	164	1,612,818	\$13,540,215	\$8.40
1929.....	157	1,550,771	12,771,525	8.24
1930.....	163	1,329,562	10,357,445	7.79
1931.....	157	1,119,266	7,729,047	6.91
1932.....	158	852,251	5,370,273	6.30

Hydrated lime sold by producers in the United States in 1932, by States

State	Short tons	Value	State	Short tons	Value
Alabama.....	19,493	\$114,354	Pennsylvania.....	152,095	\$1,050,378
California.....	9,238	85,826	Puerto Rico.....	2,282	41,909
Florida.....	6,643	59,742	Rhode Island.....	1,283	12,445
Georgia.....	3,567	21,176	Tennessee.....	27,403	174,173
Hawaii.....	6,273	80,710	Texas.....	23,917	242,429
Illinois.....	20,030	152,232	Vermont.....	6,467	45,791
Indiana.....	34,023	222,964	Virginia.....	27,968	157,162
Maine.....	8,266	54,553	Washington.....	3,059	33,998
Maryland.....	16,355	112,785	West Virginia.....	31,986	178,247
Massachusetts.....	22,870	139,591	Wisconsin.....	7,182	49,915
Missouri.....	71,785	508,362	Undistributed ¹	42,938	393,153
Montana.....	528	6,864			
New York.....	13,828	98,926		852,251	5,370,273
Ohio.....	292,742	1,332,588			

¹ Arizona, Arkansas, Colorado, Connecticut, Kentucky, Michigan, Minnesota, Nevada, New Jersey, North Carolina, South Dakota, and Utah.

Hydrated lime sold by producers in the United States in 1932, by uses

Use	Short tons	Value	Use	Short tons	Value
Agricultural.....	172,716	\$1,023,270	Chemical—Continued.		
Building.....	444,523	2,554,236	Tanneries.....	19,853	\$141,086
Chemical:			Water purification.....	67,906	491,199
Glass works.....	1,501	10,160	Other uses.....	108,378	827,988
Metallurgy.....	5,069	41,742	Total chemical.....	235,012	1,792,767
Paper mills.....	16,895	128,218		852,251	5,370,273
Sugar refineries.....	15,410	152,374			

EXPORTS AND IMPORTS ¹*Lime exported from the United States, 1928-32*

Year	Short tons	Value	Year	Short tons	Value
1928.....	18,188	\$245,004	1931.....	11,924	\$129,943
1929.....	17,334	239,440	1932.....	3,579	56,479
1930.....	14,536	192,421			

Lime exported from the United States in 1932, by countries

Country	Short tons	Value	Country	Short tons	Value
North America:			South America:		
Canada.....	922	\$12,562	Argentina.....	2	\$32
Central America:			Colombia.....	139	2,587
British Honduras.....	1	20	Ecuador.....	74	1,824
Costa Rica.....	4	60	Peru.....	750	11,391
Honduras.....	9	155	Venezuela.....	21	454
Nicaragua.....	2	52	Europe:		
Panama.....	78	1,977	France.....	5	215
Salvador.....	20	340	Germany.....	8	168
Mexico.....	107	2,299	Italy.....	6	153
Newfoundland and Labrador.....	102	1,707	Sweden.....	33	1,135
West Indies:			United Kingdom.....	13	227
British:			Asia:		
Jamaica.....	80	1,499	China.....	1	17
Other British.....	47	1,143	Japan.....	210	6,110
Cuba.....	19	319	Philippine Islands.....	419	4,568
Dominican Republic.....	433	4,173	Oceania:		
French.....	1	34	Australia.....	1	25
Netherlands.....	6	102	French.....	2	37
Virgin Islands of the United States.....	64	1,094			
				3,579	56,479

Lime imported for consumption in the United States, 1928-32

Year	Hydrated lime		Other lime		Dead-burned dolomite		Total	
	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value
1928.....	5,707	\$88,738	12,614	\$255,558	(1)	(1)	18,321	\$344,296
1929.....	6,347	97,238	15,154	293,498	(1)	(1)	21,501	390,736
1930.....	3,336	40,381	17,370	238,516	3,024	\$77,918	23,730	356,815
1931.....	2,268	26,622	12,190	155,245	6,051	152,795	20,509	334,662
1932.....	1,677	18,756	7,100	77,279	5,120	115,808	13,897	211,843

¹ Not separately recorded.² June 18 to Dec. 31; not separately recorded prior to change in tariff.¹ Figures on exports and imports compiled by C. Galihier, of the Bureau of Mines, from records of the Bureau of Foreign and Domestic Commerce.

Lime (exclusive of dead-burned dolomite) imported into the United States, 1931 and 1932, by countries and districts

[General imports]

Country	District	1931		1932	
		Short tons	Value	Short tons	Value
Canada	Buffalo	15	\$53		
	Maine and New Hampshire	190	2,527	164	\$2,689
	San Francisco	1,618	26,241	756	8,868
	Vermont	28	294	(¹)	3
Cuba	Washington	12,518	150,917	7,788	83,025
	Puerto Rico			1	7
Germany	Indiana	(¹)	86		
	New York	12	588	11	668
Hong Kong	Hawaii	(¹)	7		
Japan	Washington	(¹)	8		
United Kingdom	New York	8	278	6	287
	Philadelphia	69	868	51	488
		14,458	181,867	8,777	96,035

¹ Less than 1 ton.

SHIPMENTS

Lime supplies available for consumption in continental United States in 1932, by States, in short tons

State	Sales by producers	Shipments from State	Shipments into State	Supply			
				Hydrated lime	Quicklime	Total	Pounds per capita ¹
Alabama.....	92,359	40,594	2,781	8,108	46,438	54,546	41
Arizona.....	11,061	6,231	100	720	4,210	4,930	22
Arkansas.....	(²)	(²)	4,618	6,191	5,234	11,425	12
California.....	29,925	3,585	14,741	15,505	25,576	41,081	14
Colorado.....	(²)	(²)	4,038	2,585	4,471	7,056	13
Connecticut.....	(²)	(²)	15,507	8,502	9,808	18,310	22
Delaware.....			10,578	3,853	6,725	10,578	88
District of Columbia.....			15,253	13,465	1,788	15,253	62
Florida.....	10,841		12,052	13,402	9,491	22,893	30
Georgia.....	3,567	1,188	14,592	13,736	3,235	16,971	12
Idaho.....	(²)	(²)	667	394	278	672	3
Illinois.....	62,436	27,557	65,300	43,344	56,835	100,179	26
Indiana.....	58,440	34,283	36,903	31,546	29,514	61,060	37
Iowa.....			28,218	11,800	16,418	28,218	23
Kansas.....			23,645	10,277	13,368	23,645	25
Kentucky.....	(²)	(²)	19,064	7,971	11,695	19,666	15
Louisiana.....			49,536	9,783	39,753	49,536	46
Maine.....	23,354	6,481	17,259	6,256	27,876	34,132	85
Maryland.....	26,536	7,939	32,560	29,495	21,662	51,157	62
Massachusetts.....	68,959	47,049	26,262	20,106	28,066	48,172	22
Michigan.....	38,610	23,514	74,385	44,000	45,481	89,481	36
Minnesota.....	(²)	(²)	5,938	9,606	11,343	20,949	16
Mississippi.....			9,630	3,253	6,377	9,630	10
Missouri.....	174,427	134,109	11,359	22,546	29,131	51,677	28
Montana.....	1,016	20	638	1,066	568	1,634	6
Nebraska.....			6,269	4,863	1,406	6,269	9
Nevada.....	(²)	(²)	1,628	814	6,658	7,472	161
New Hampshire.....			6,773	1,778	4,995	6,773	29
New Jersey.....	(²)		(²)	62,072	24,916	86,988	42
New Mexico.....	990	200	4,751	1,114	4,427	5,541	26
New York.....	29,391	9,709	159,158	106,166	72,674	178,840	28
North Carolina.....	(²)	(²)	37,588	11,957	27,531	39,488	24
North Dakota.....			4,451	4,241	210	4,451	13
Ohio.....	475,485	333,131	52,353	76,218	118,489	194,707	58
Oklahoma.....			14,375	8,198	6,177	14,375	12
Oregon.....			6,513	1,866	4,647	6,513	13
Pennsylvania.....	374,244	148,136	90,437	124,798	191,747	316,545	65
Rhode Island.....	1,927	419	8,691	5,027	5,172	10,199	29
South Carolina.....			9,003	5,249	3,754	9,003	10
South Dakota.....	(²)		(²)	1,936	1,817	3,753	11
Tennessee.....	106,706	91,384	7,223	9,823	12,722	22,545	17
Texas.....	35,903	4,804	2,019	24,154	8,964	33,118	11
Utah.....	9,092	580	203	2,500	6,215	8,715	34
Vermont.....	29,187	27,690	669	978	1,188	2,166	12
Virginia.....	78,771	54,651	39,146	17,937	45,329	63,266	52
Washington.....	18,862	6,693	1,235	1,998	11,406	13,404	17
West Virginia.....	82,757	73,646	36,668	9,305	36,474	45,779	52
Wisconsin.....	27,283	4,960	39,438	18,359	43,402	61,761	42
Wyoming.....			793	549	244	793	7
Undistributed.....	72,203	32,147	86,675				
	1,944,332	³ 1,120,700	1,111,683	839,410	1,095,905	1,935,315	31

¹ Based on Bureau of the Census preliminary statement.

² Included under "Undistributed."

³ Includes 9,017 tons of lime exported or unspecified by producers as to destination.

Lime shipped in continental United States in 1932, by origin and destination of shipments, in short tons

Destination	Illinois, Indiana, Michigan, Ohio			Maryland, New Jersey, New York, Pennsylvania, West Virginia			Connecticut, Maine, Massachusetts, Rhode Island, Vermont			Florida, Georgia, North Carolina, Virginia		
	Hydrated lime	Quicklime	Total	Hydrated lime	Quicklime	Total	Hydrated lime	Quicklime	Total	Hydrated lime	Quicklime	Total
Illinois, Indiana, Michigan, Ohio	171,996	183,504	355,500	3,701	26,262	29,963	-----	-----	-----	165	555	720
Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania, West Virginia	119,798	52,967	172,765	204,861	245,163	450,024	11,616	26,423	38,039	12,028	31,242	43,270
Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont	10,947	1,664	12,611	2,711	14,454	17,165	28,595	60,731	89,326	364	212	576
Florida, Georgia, North Carolina, South Carolina, Virginia	11,960	2,670	14,630	3,321	9,509	12,830	784	1	785	27,026	24,276	51,302
Alabama, Kentucky, Louisiana, Mississippi, Tennessee	8,853	2,892	11,745	572	106	678	-----	-----	-----	135	1	136
Arkansas, Iowa, Kansas, Minnesota, Missouri, Nebraska, Oklahoma, Texas, Wisconsin	27,840	34,299	62,139	15	-----	15	-----	-----	-----	-----	5	5
Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, Wyoming	2,442	120	2,562	-----	-----	-----	-----	-----	-----	-----	-----	-----

Destination	Alabama, Kentucky, Tennessee			Arkansas, Minnesota, Missouri, Texas, Wisconsin			Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, South Dakota, Utah, Washington			United States		
	Hydrated lime	Quicklime	Total	Hydrated lime	Quicklime	Total	Hydrated lime	Quicklime	Total	Hydrated lime	Quicklime	Total
Illinois, Indiana, Michigan, Ohio	709	5,127	5,836	18,537	34,871	53,408	-----	-----	-----	195,108	250,319	445,427
Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania, West Virginia	-----	-----	-----	851	191	1,042	-----	-----	-----	349,154	355,986	705,140
Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont	-----	-----	-----	30	44	74	-----	-----	-----	42,647	77,105	119,752
Florida, Georgia, North Carolina, South Carolina, Virginia	19,140	52,622	71,762	50	262	312	-----	-----	-----	62,281	89,340	151,621
Alabama, Kentucky, Louisiana, Mississippi, Tennessee	27,610	94,219	121,829	1,768	19,767	21,535	-----	-----	-----	38,938	116,985	155,923
Arkansas, Iowa, Kansas, Minnesota, Missouri, Nebraska, Oklahoma, Texas, Wisconsin	54	33	87	87,945	101,106	189,054	137	-----	137	115,994	135,443	251,437
Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, Wyoming	-----	-----	-----	7,129	6,962	14,091	25,717	63,645	89,362	35,288	70,727	106,015

LIME

75



GOLD, SILVER, COPPER, LEAD, AND ZINC IN NEW MEXICO

(DETAILED STATISTICS—MINE REPORT)

By CHAS. W. HENDERSON

SUMMARY

In 1932 the output of gold, silver, copper, lead, and zinc from New Mexico ores and gravels, in terms of recovered and estimated recoverable metal, was 23,208.05 ounces of gold, 1,142,351 ounces of silver, 28,419,000 pounds of copper, 20,227,000 pounds of lead, and 51,186,000 pounds of zinc. Compared with 1931 these figures show a decrease of 7,953.19 ounces in gold, an increase of 100,492 ounces in silver, and decreases of 33,084,100 pounds in copper, 2,310,000 pounds in lead, and 4,546,000 pounds in zinc. The gross value of the New Mexico metal production in 1932 was as follows: Gold \$479,753, silver \$322,143, copper \$1,790,397, lead \$606,810, and zinc \$1,535,580—a total of \$4,734,683 compared with \$9,494,766 in 1931.

The total recorded production of gold, silver, copper, lead, and zinc (in terms of recovered metals) in New Mexico from 1848 to 1932, inclusive, has been \$38,109,335 in gold, 54,197,404 fine ounces of silver, 1,489,553,473 pounds of copper, 370,036,385 pounds of lead, and 728,290,394 pounds of zinc.

The value of metal production herein reported has been calculated at the figures given in the table that follows. Gold is figured at the mint value for fine gold; that is, \$20.671835 an ounce. The silver price is the average New York price for bar silver. The copper, lead, and zinc prices are weighted averages, for each year, of all grades of primary metal sold by producers.

Prices of silver, copper, lead, and zinc, 1928-32

Year	Silver	Copper	Lead	Zinc	Year	Silver	Copper	Lead	Zinc
	<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>		<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>
1928-----	\$0.585	\$0.144	\$0.058	\$0.061	1931-----	\$0.290	\$0.091	\$0.037	\$0.038
1929-----	.533	.176	.063	.066	1932-----	.282	.063	.030	.030
1930-----	.385	.130	.050	.048					

Mine production of gold, silver, copper, lead, and zinc in New Mexico, 1928-32, in terms of recovered metals

Year	Mines producing			Ore (short tons)	Gold (lode and placer)		Silver (lode and placer)	
	Lode	Placer	Total		Fine ounces	Value	Fine ounces	Value
1928.....	93	6	99	4, 073, 974	32, 912. 41	\$680, 360	827, 793	\$484, 259
1929.....	113	8	121	4, 506, 807	35, 176. 46	727, 162	1, 121, 546	597, 784
1930.....	88	5	93	2, 971, 441	32, 370. 42	669, 156	1, 107, 335	426, 324
1931.....	59	109	168	3, 003, 941	31, 161. 24	644, 160	1, 041, 859	302, 139
1932.....	87	378	465	1, 464, 718	23, 208. 05	479, 753	1, 142, 351	322, 143

Year	Copper		Lead		Zinc		Total value
	Pounds	Value	Pounds	Value	Pounds	Value	
1928.....	89, 854, 646	\$12, 939, 069	15, 610, 501	\$905, 409	62, 406, 000	\$3, 806, 766	\$18, 815, 863
1929.....	97, 717, 262	17, 198, 238	22, 260, 811	1, 402, 431	68, 910, 000	4, 548, 060	24, 473, 675
1930.....	65, 150, 000	8, 469, 500	20, 756, 900	1, 037, 845	65, 529, 000	3, 145, 392	13, 748, 217
1931.....	61, 503, 100	5, 596, 782	22, 537, 000	833, 869	55, 732, 000	2, 117, 816	9, 494, 766
1932.....	28, 419, 000	1, 790, 397	20, 227, 000	606, 810	51, 186, 000	1, 535, 580	4, 734, 683

Gold and silver produced at placer mines in New Mexico, 1928-32

Year	Gold		Silver		Total value	Year	Gold		Silver		Total value
	Fine ounces	Value	Fine ounces	Value			Fine ounces	Value	Fine ounces	Value	
1928.....	65. 16	\$1, 347	17	\$10	\$1, 357	1931.....	406. 59	\$8, 405	59	\$17	\$8, 422
1929.....	79. 82	1, 650	4	2	1, 652	1932.....	1, 270. 28	26, 259	181	51	26, 310
1930.....	63. 66	1, 316	18	7	1, 323						

Mine production of gold, silver, copper, lead, and zinc in New Mexico in 1932, by counties, in terms of recovered metals

County	Mines producing			Ore (short tons)	Gold (lode and placer)	Silver (lode and placer)	
	Lode	Placer	Total			Fine ounces	Value
Catron.....	6		6	25, 228	\$66, 441	136, 869	\$38, 597
Colfax.....	1	8	9	500	4, 839	39	11
Dona Ana.....	3		3	35	6	227	64
Grant.....	26	132	158	1, 233, 213	45, 551	480, 376	135, 466
Hidalgo.....	8		8	16, 620	29, 227	37, 000	10, 434
Lincoln.....	4	45	49	279	9, 895	1, 397	394
Luna.....	1		1	39	27	156	44
Otero.....	5	63	68	461	2, 940	53	15
Rio Arriba.....	2	1	3	9	411	14	4
Sandoval.....	1		1	659	7, 537	13, 440	3, 790
San Miguel.....	1		1	185, 515	288, 484	463, 000	130, 566
Santa Fe.....	2	50	52	33	3, 885	28	8
Sierra.....	20	79	99	1, 279	18, 609	7, 869	2, 219
Socorro.....	6		6	804	1, 607	1, 500	423
Taos.....	1		1	44	294	383	108
Total, 1931.....	87	378	465	1, 464, 718	479, 753	1, 142, 351	322, 143
	59	109	168	3, 003, 941	644, 160	1, 041, 859	302, 139

GOLD, SILVER, COPPER, LEAD, AND ZINC IN NEW MEXICO 79

Mine production of gold, silver, copper, lead, and zinc in New Mexico in 1932, by counties, in terms of recovered metals—Continued

County	Copper		Lead		Zinc		Total value
	Pounds	Value	Pounds	Value	Pounds	Value	
Catron.....	1,000	\$63	400	\$12			\$105,113
Colfax.....							4,850
Dona Ana.....			2,000	60			130
Grant.....	26,527,000	1,671,201	7,056,800	211,704	10,241,000	\$307,230	2,371,152
Hidalgo.....	858,000	54,054	31,000	930			94,645
Lincoln.....	1,000	63	12,000	360			10,712
Luna.....							71
Otero.....	1,000	63	90,000	2,700			5,718
Rio Arriba.....							415
Sandoval.....			300	9			11,336
San Miguel.....	1,019,000	64,197	12,898,000	386,940	40,712,000	1,221,360	2,091,547
Santa Fe.....							3,893
Sierra.....	12,000	756	23,500	705			22,289
Socorro.....			113,000	3,390	233,000	6,990	12,410
Taos.....							402
Total, 1931.....	28,419,000	1,790,397	20,227,000	606,810	51,186,000	1,535,580	4,734,683
	61,503,100	5,596,782	22,537,000	833,869	55,732,000	2,117,816	9,494,766

MINING INDUSTRY

The significant operating details of mining in New Mexico were reviewed in the Minerals Yearbook, 1932-33, issued by the Bureau of Mines in August 1933.

ORE CLASSIFICATION

Ore sold or treated in New Mexico in 1932, with content in terms of recovered metals

Source	Ore	Gold	Silver	Copper	Lead	Zinc
	Short tons	Fine ounces	Fine ounces	Pounds	Pounds	Pounds
Dry gold ore.....	2,125	1,281.38	1,918	11,515	7,507	
Dry gold and silver ore.....	27,694	3,931.15	162,922	14,735	13,193	
Dry silver ore.....	59	2.27	1,284	1,000	2,000	
	29,878	5,214.80	166,124	27,250	22,700	
Copper ore.....	1,184,528	2,718.65	58,820	24,005,050	27,000	
Copper-lead ore.....	977	10.58	20,160	49,700	724,500	
Lead ore.....	607	38.33	2,035	1,000	165,500	
Lead-zinc ore.....	228,754	13,955.41	895,031	4,336,000	19,287,300	48,253,000
Zinc ore.....	19,974					2,933,000
	1,434,840	16,722.97	976,046	28,391,750	20,204,300	51,186,000
Total, lode mines.....	1,464,718	21,937.77	1,142,170	28,419,000	20,227,000	51,186,000
Total, placers.....		1,270.28	181			
Total, 1931.....	1,464,718	23,208.05	1,142,351	28,419,000	20,227,000	51,186,000
	3,003,941	31,161.24	1,041,859	61,503,100	22,537,000	55,732,000

METALLURGIC INDUSTRY

All markets for New Mexico ore and concentrates are outside the State. In 1932 lead ores and concentrates were sold to the American Smelting & Refining Co. lead plant at El Paso, Tex. Copper ore and concentrates were sold to the American Smelting & Refining Co. copper plant at El Paso, Tex., and copper ore was sold to the Copper Queen copper smelter at Douglas, Ariz. Zinc concentrates were shipped to the American Smelting & Refining Co. natural-gas retort

plant at Amarillo, Tex., to the Illinois Zinc Co. retort plant at Peru, Ill., and to the American Metal Co. producer-gas retort plant at Langeloth, Pa. Zinc-lead sulphide ore was shipped to the Ozark Smelting & Mining Co. zinc-lead pigment plant at Coffeyville, Kans.

All important mills in New Mexico used the selective flotation method in 1932; the following table gives the names of the flotation mills active and the location, county, rated capacity, type of ore treated, and type of concentrate produced.

Flotation mills in New Mexico active in 1932

Name of company or mill	Location of mill	County	Rated capacity (short tons per 24 hours)	Type of ore treated	Type of concentrate produced
Chino Mines	Hurley.....	Grant.....	¹ 15,000	Copper-gold-silver.	Copper-gold-silver.
Combination (Black Hawk)	Hanover.....	do.....	² 175	Zinc-lead-copper-silver.	Zinc, lead-silver, copper-silver.
Little Fanny	Mogollon.....	Catron.....	50 to 70	Gold and silver	Gold and silver.
Molybdenum Corporation of America.	Red River and Sulphur Creek.	Taos.....	40	Molybdenum	Molybdenum.
Pecos (American Metal Co.)	Alamitos Canyon.	San Miguel.	³ 600	Zinc-lead-copper-gold-silver.	Zinc, lead-copper-gold-silver.
Peru Mining Co.	Wempe.....	Luna.....	⁴ 275	Zinc.....	Zinc.

¹ 6,474 tons for 180 days.
² 162 tons for 269 days.

³ 538 tons for 345 days.
⁴ 270 tons for 74 days.

Mine production of metals in New Mexico in 1932, by methods of recovery, in terms of recovered metals

Method of recovery	Material treated	Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Ore amalgamated.....	1, 102	523. 55	204			
Ore cyanided.....	53	32. 12	397			
Concentrates smelted.....	¹ 120, 867	18, 557. 21	1, 051, 965	27, 367, 900	19, 178, 700	50, 953, 000
Ore smelted.....	24, 887	2, 824. 89	89, 604	1, 051, 100	1, 048, 300	233, 000
Placer.....		1, 270. 28	181			
Total, 1931.....		23, 208. 05	1, 142, 351	28, 419, 000	20, 227, 000	51, 186, 000
		31, 161. 24	1, 041, 859	61, 503, 100	22, 537, 000	55, 732, 000

¹ From 1,438,676 tons of ore treated at concentrating mills and 722 tons of ore first amalgamated.

Gross metal content of New Mexico concentrates produced in 1932, by classes of concentrates

Class of concentrates	Concentrates produced (dry weight)	Gross metal content				
		Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Dry gold.....	111	142. 70	334	2, 163	22	
Dry gold and silver.....	397	3, 160. 10	134, 710	1, 520	793	
Copper.....	34, 145	1, 299. 00	21, 890	23, 988, 375		
Copper-lead.....	30, 344	13, 955. 41	865, 218	5, 470, 179	21, 598, 106	6, 901, 746
Zinc.....	55, 870	2, 546. 82	198, 707	1, 398, 962	1, 743, 387	61, 389, 135
Total, 1931.....	120, 867	21, 104. 03	1, 220, 859	30, 861, 199	23, 342, 308	68, 290, 881
	175, 001	20, 783. 58	993, 817	60, 950, 404	22, 934, 246	72, 992, 510

GOLD, SILVER, COPPER, LEAD, AND ZINC IN NEW MEXICO 81

Mine production of metals from New Mexico concentrates in 1932, by counties, in terms of recovered metals

County	Ore treated at concentrating mills	Concentrates and recovered metal					
		Concentrates produced	Gold	Silver	Copper	Lead	Zinc
	Short tons	Short tons	Fine ounces	Fine ounces	Pounds	Pounds	Pounds
Catron.....	25, 200	397	3, 160. 10	134, 710	1, 000	400	-----
Colfax.....	-----	1 22	59. 80	10	-----	-----	-----
Grant.....	1, 227, 961	53, 013	1, 299. 00	453, 921	26, 346, 000	6, 280, 300	10, 241, 000
San Miguel.....	185, 515	62, 346	13, 955. 41	463, 000	1, 019, 000	12, 898, 000	40, 712, 000
Sierra.....	-----	1 89	82. 90	324	1, 900	-----	-----
Total, 1931.....	1, 438, 676 2, 884, 910	120, 867 175, 001	18, 557. 21 19, 126. 73	1, 051, 965 839, 567	27, 367, 900 56, 364, 100	19, 178, 700 20, 772, 000	50, 953, 000 55, 732, 000

¹ From ore treated at gold and silver mills equipped for amalgamation and concentration, as follows: Colfax County, 500 tons; Sierra County, 222 tons.

Gross metal content of New Mexico crude ore shipped to smelters in 1932, by classes of ore

Class of ore	Ore	Gross metal content				
		Gold	Silver	Copper	Lead	Zinc
	Short tons	Fine ounces	Fine ounces	Pounds	Pounds	Pounds
Dry gold.....	1, 014	598. 18	1, 403	11, 012	9, 245	-----
Dry gold and silver.....	2, 450	755. 88	27, 792	15, 679	20, 910	-----
Dry silver.....	59	2. 27	1, 284	1, 145	3, 117	-----
Copper.....	19, 158	1, 420. 70	37, 633	1, 058, 956	54, 580	-----
Copper-lead.....	977	10. 58	20, 160	70, 506	805, 672	-----
Lead.....	607	38. 33	2, 035	2, 647	188, 842	-----
Lead-zinc.....	622	-----	-----	-----	155, 800	290, 720
Total, 1931.....	24, 887 119, 028	2, 825. 94 11, 589. 38	90, 307 202, 233	1, 159, 945 6, 014, 954	1, 238, 166 2, 127, 450	290, 720 598, 700

Mine production of metals from New Mexico crude ore shipped to smelters in 1932, by counties, in terms of recovered metals

County	Ore	Gold	Silver	Copper	Lead	Zinc
	Short tons	Fine ounces	Fine ounces	Pounds	Pounds	Pounds
Catron.....	28	53. 03	2, 122	-----	-----	-----
Dona Ana.....	35	. 29	227	-----	2, 000	-----
Grant.....	5, 246	509. 12	26, 345	181, 000	776, 500	-----
Hidalgo.....	16, 618	1, 404. 83	36, 997	858, 000	31, 000	-----
Lincoln.....	27	1. 52	1, 286	1, 000	12, 000	-----
Luna.....	39	1. 31	156	-----	-----	-----
Otero.....	346	-----	39	1, 000	90, 000	-----
Sandoval.....	659	364. 60	13, 440	-----	300	-----
Santa Fe.....	28	8. 50	14	-----	-----	-----
Sierra.....	1, 057	405. 64	7, 498	10, 100	23, 500	-----
Socorro.....	804	76. 05	1, 500	-----	113, 000	233, 000
Total, 1931.....	24, 887 119, 028	2, 824. 89 11, 589. 29	89, 604 202, 224	1, 051, 100 5, 139, 000	1, 048, 300 1, 765, 000	233, 000 -----

REVIEW BY COUNTIES AND DISTRICTS

Mine production of gold, silver, copper, lead, and zinc in New Mexico in 1932, by counties and districts, in terms of recovered metals

County and district	Mines producing		Ore	Gold			Silver			Copper	Lead	Zinc	Total value
	Lode	Placer		Lode	Placer	Total	Lode	Placer	Total				
			Short tons	Fine ounces	Fine ounces	Fine ounces	Fine ounces	Fine ounces	Fine ounces	Pounds	Pounds	Pounds	
Catron County: Mogollon.....	6		25, 228	3, 214. 08		3, 214. 08	136, 869		136, 869	1, 000	400		\$105, 113
Colfax County: Mount Baldy.....	1	8	500	126. 26	107. 83	234. 09	21	18	39				4, 850
Dona Ana County: Organ.....	3		35	. 29		. 29	227		227		2, 000		130
Grant County:													
Central.....	9	7	1, 231, 876	1, 485. 16	19. 69	1, 504. 85	474, 475	4	474, 479	26, 512, 900	7, 041, 400	10, 241, 000	2, 353, 696
Eureka.....	1		58	2. 27		2. 27	1, 266		1, 266	1, 000	2, 000		527
Gold Hill.....	3		74	14. 61		14. 61	21		21				308
Pinos Altos.....	7	125	1, 139	287. 44	367. 36	654. 80	3, 181	99	3, 280	13, 100	13, 400		15, 688
Steeple Rock.....	2		19	13. 21		13. 21	780		780				493
Telegraph.....	1		7	2. 47		2. 47	32		32				60
White Signal.....	3		40	11. 32		11. 32	518		518				380
Hidalgo County:													
Eureka.....	2		6	12. 43		12. 43	4		4				258
Lordsburg.....	5		16, 608	1, 400. 85		1, 400. 85	36, 858		36, 858	858, 000	31, 000		94, 336
San Simon.....	1		6	. 58		. 58	138		138				51
Lincoln County:													
Gallinas Mountains.....	1		24	. 58		. 58	103		103	1, 000	11, 500		449
Jicarilla.....		39		128. 24		128. 24	7	7	7				2, 653
Nogal.....	2	5	253	319. 42	21. 19	340. 61	1, 280	7	1, 287		500		7, 419
White Oaks.....	1	1	2	. 24	9. 00	9. 24							191
Luna County: Tres Hermanas.....	1		39	1. 81		1. 81	156		156				71
Otero County:													
Orogrande.....	3	63	115	16. 11	126. 11	142. 22		14	14				2, 944
Sacramento.....	2		346				39		39	1, 000	90, 000		2, 774
Rio Arriba County: Headstone.....	2	1	9	17. 90	1. 98	19. 88	14		14				415
Sandoval County: Cochiti.....	1		659	364. 60		364. 60	13, 440		13, 440		300		11, 336
San Miguel County: Willow Creek.....	1		185, 515	13, 955. 41		13, 955. 41	463, 000		463, 000	1, 019, 000	12, 898, 000	40, 712, 000	2, 091, 547
Santa Fe County:													
Los Cerrillos.....		16			13. 06	13. 06							270
San Pedro.....	2	34	33	14. 03	160. 85	174. 88	14	14	28				3, 623
Sierra County:													
Caballos Mountains.....		38			32. 27	32. 27							667
Chloride.....	4	1	12	36. 48	1. 79	38. 27	550		550	400			971
Kingston.....	1		626	86. 01		86. 01	4, 099		4, 099	2, 300	7, 000		3, 289
Lake Valley.....	2		147	16. 83		16. 83	2, 319		2, 319	300	500		1, 037
Las Animas (Hillsboro).....	13	35	494	445. 87	196. 35	642. 22	883	14	897	9, 000	16, 000		14, 576
Pittsburg.....		5			84. 56	84. 56		4	4				1, 749

Socorro County:													
Magdalena.....	4		644	22.69		22.69	142		142		113,000	233,000	10,889
San Mateo.....	1		160	53.36		53.36	1,358		1,358				1,486
Silver Hills.....	1			1.69		1.69							35
Taos County: Red River.....	1		44	14.22		14.22	383		383				402
Total New Mexico.....	87	378	1,464,718	21,937.77	1,270.28	23,208.05	1,142,170	181	1,142,351	28,419,000	20,227,000	51,186,000	4,734,683

¹ Eureka district lies in both Grant and Hidalgo Counties.

CATRON COUNTY

Mogollon district.—Lode mines in the Mogollon district in 1932 produced dry gold and silver ore, the principal output coming from the Little Fanney mine, the ore from which was concentrated by flotation; the gold-silver concentrate product was shipped to El Paso by way of Silver City.

COLFAX COUNTY

Mount Baldy district (Baldy, Elizabethtown, Therma).—Lode-mine production from the Mount Baldy district in 1932 was in the form of amalgam bullion and gold concentrates made from milling of the old Aztec mine dump. Placer gold was recovered by sluicing operations on Willow and Ute Creeks.

DONA ANA COUNTY

Organ district.—One lot of slag and ore from an old smelter site on the Ascarita Grant was shipped to the El Paso smelter in 1932. Two other small shipments were made from properties near Organ.

GRANT COUNTY

Central district (Bayard, Fierro, Georgetown, Hanover, Santa Rita).—The bulk of the production from the Central district in 1932 came from the Chino mines of the Nevada Consolidated Copper Co. (mill at Hurley, N.Mex.), the Ground Hog-San Jose mines of the Asarco Mining Co. (milled at the Black Hawk Consolidated Mines Co. concentrator at Hanover), and the Pewabic mine at Hanover (milled at the Peru mill at Deming).

Eureka (Hachita) district (see also Eureka district, Hidalgo County).—Lessees on the King "400" mine shipped 58 tons of silver ore containing a little copper and lead to the El Paso smelter in 1932.

Gold Hill district.—All the ore produced in the Gold Hill district in 1932 was shipped crude to the El Paso smelter.

Pinos Altos district.—The producing lode mines in the Pinos Altos district in 1932 were the Gold King, Golden Giant, Kept Woman, Savannah Copper Co. mines, Silver Bell, Silver Hill, and Three Brothers, all of which shipped to the El Paso smelter. Individuals produced placer gold by sluicing, hand rockers, and pans; it was marketed at the Denver Mint, either direct or through jewelers, banks, or grocery stores.

Steeple Rock district.—One test lot of gold and silver ore from the East Camp group and four sample lots of gold and silver ore from the Norman King mine were shipped to the El Paso smelter in 1932.

Telegraph district.—One lot of gold ore was shipped from the Telegraph district in 1932 to the El Paso smelter.

White Signal district.—Ore produced in the White Signal district in 1932 was classified as gold ore, of which 12 tons came from the Copper Head mine and 28 tons from various small operations.

HIDALGO COUNTY

Eureka district (Hachita) (see also Eureka district, Grant County).—Two small lots of gold ore were shipped from the Eureka district (Hidalgo County) to the El Paso smelter in 1932.

Lordsburg district (including Pyramid and Virginia or Shakespeare districts).—Clean-up operations at the Eighty-Five mine the first few days of 1932 resulted in the shipment of 6,743 tons of copper ore to the Copper Queen branch of the Phelps Dodge Corporation at Douglas, Ariz. The Bonney mine was the only other producer in the Lordsburg district shipping more than 1 carload of ore during the year.

San Simon district.—One small lot of gold-silver ore was shipped from the San Simon district in 1932.

LINCOLN COUNTY

Gallinas Mountains or Red Cloud district.—A shipment of lead-copper ore was made from the Gallinas Mountains district to the El Paso smelter in 1932.

Jicarilla district.—Mining operations in the Jicarilla district in 1932 were confined to placer workings using various methods of recovery, such as sluicing, hand rockers, an Ainlay centrifugal-bowl machine, and so-called "dry washers."

Nogal district.—The only mine in the Nogal district producing more than 1 ton of ore in 1932 was the Helen Rae operated by the Helen Rae Mining Co. which shipped gold bullion to the Denver Mint; the milling was done in a 5-stamp Huntington mill on the property. Small-scale placer mining was carried on in the district by sluicing and panning.

LUNA COUNTY

Deming district.—The Peru selective flotation mill (total mill capacity, 275 tons per day) at Wemple near Deming was operated 74 days during September, October, November, and December 1932 at an average rate of 270 tons per day on lead-free zinc sulphide ore from the Peru Mining Co. Pewabic mine at Hanover, Grant County.

Tres Hermanas district.—One lot of gold-silver ore was shipped from the Tres Hermanas district to the El Paso smelter in 1932.

OTERO COUNTY

Orogrande district.—The mines in the Orogrande district producing as much as one half ton or more of ore in 1932 were the Lee No. 1 (dump material classed as dry gold ore) and the Nannie Baird. Huntington mills were used on both properties, and the gold was recovered by amalgamation and sent to the Denver Mint. Placer mining in Otero County, all in the Orogrande district, was carried on by sluicing, hand rockers, and pans.

Sacramento district.—Lead ore was shipped from the Sacramento district to the El Paso smelter in 1932.

RIO ARRIBA COUNTY

Headstone district.—Producing lode mines in the Headstone district in 1932 were the Good Stope and the Buckhorn. A placer operation on the Tierra Amarilla Grant recovered, by sluicing, a small amount of gold bullion which was sent to the Denver Mint.

SANDOVAL COUNTY

Cochiti (Bland) district.—A lessee operating the Crown Point, Free Trade, Iron King, Laura S, Lone Star, and Washington claims in the Cochiti district shipped gold-silver ore to the El Paso smelter in 1932.

SAN MIGUEL COUNTY

Willow Creek district (Terrero).—The Pecos mine of the American Metal Co. on Willow Creek, the only producing mine in San Miguel County in 1932, in its sixth year of production, continued to produce at the rate of 538 tons a day. Data concerning the Pecos mine and mill are given in the Minerals Yearbook, 1932-33, and in Mineral Resources of the United States, 1930, pt. I, page 808.

The actual heads of ore into the mill in 1932 averaged 0.112 ounce gold and 4.24 ounces silver per ton, 0.89 percent copper (wet assay), 4.89 percent lead (wet assay), and 15.50 percent zinc. The yield from 185,515 dry tons treated in 1932 was 44,681 tons of zinc concentrates—averaging 0.057 ounce gold and 3.78 ounces silver per ton, 1.24 percent copper (wet assay), 1.54 percent lead (wet assay), 54.89 percent zinc, and 6.43 percent iron—and 17,665 tons of lead-copper concentrates—averaging 0.79 ounce gold and 26.21 ounces silver per ton, 4.12 percent copper (wet assay), 40.28 percent lead (wet assay), 13.26 percent zinc, and 11.34 percent iron.

SANTA FE COUNTY

Los Cerrillos district.—Individuals recovered placer gold by sluicing and panning operations in the Los Cerrillos district in 1932.

San Pedro or New Placers district (Golden, San Pedro).—One small lot of gold ore was shipped from the New Placers district to the El Paso smelter in 1932. Hand working of 5 tons of gold ore from the Santa Fe mine yielded gold bullion which was sent to the Denver Mint. Individuals working placer mines by sluicing and various mechanical concentrators recovered placer gold which was marketed through jewelers or mercantile establishments or sent direct to the Denver Mint.

SIERRA COUNTY

Chloride (Apache, Cuchillo Negro) district.—Various mines in the Chloride district produced copper ore, gold ore, and gold-silver ore in 1932. All the ore mined was shipped to the El Paso smelter. One placer operation produced a little gold.

Kingston district.—Gold ore and gold-silver ore from the Lady Franklin group of mines were shipped to the El Paso smelter in 1932.

Las Animas district (Hillsboro).—The mines in the Las Animas district producing more than 1 car of ore each during 1932 were the Bonanza, Jim Stuck, Little Girl, Morning Glory, and Snake-Opportunity. Gold bullion was produced at placer mines using various makes of mechanical concentrators, so-called "dry land dredges", and sluice boxes.

Pittsburg district.—Metal production in the Pittsburg district in 1932 all came from placer operations, chiefly from the Shandon placer. Reported methods of recovering the gold included "dry washing" and sluicing.

SOCORRO COUNTY

Magdalena district (Kelly, Magdalena).—Shipments from the Magdalena district in 1932 consisted of gold ore, silver ore, lead ore, and lead-zinc ore.

San Mateo district.—Three cars of gold-silver ore were shipped to the El Paso smelter for test purposes in 1932 from an outcrop on the property of the Nogal Mines, Inc.

Silver Hills district.—A prospector near the southwest corner of the Manzano National Forest recovered a small amount of gold bullion by hand methods in 1932.

TAOS COUNTY

Red River district.—One small lot of gold-silver ore was shipped from the Red River district in 1932 to the Golden Cycle mill at Colorado Springs, Colo.

Sulphur Creek district.—The Molybdenum Corporation of America continued to mill molybdenum ore from the Phyllis group at its 40-ton (per 24 hours) flotation mill at the junction of Sulphur Creek and Red River above Questa.

GOLD, SILVER, COPPER, LEAD, AND ZINC IN TEXAS

(DETAILED STATISTICS—MINE REPORT)

By CHAS. W. HENDERSON

Metal mines in Texas produced no gold, silver, copper, lead, or zinc in 1931, but several small shipments of ore were made to the El Paso smelter from Allamoore and Shafter in 1932. Details are given in the tables that follow.

The total production of gold, silver, copper, lead, and zinc in Texas (in terms of recovered metals) from 1885 to 1932, inclusive, has been \$95,252 in gold, 22,773,945 fine ounces of silver, 1,307,960 pounds of copper, 3,775,126 pounds of lead, and 1,488,474 pounds of zinc.

*Mine production of gold, silver, copper, and lead in Texas, 1928-32, in terms of recovered metals*¹

Year	Ore (short tons)	Gold	Silver		Copper		Lead		Total value
			Fine ounces	Value	Pounds	Value	Pounds	Value	
1928-----	76,915	\$10,115	1,340,622	\$784,264	447,792	\$64,482	695,570	\$40,343	\$899,204
1929-----	63,872	26,439	1,020,516	543,935	341,000	60,016	849,683	53,530	683,920
1930-----	31,147	3,648	389,239	149,857	143,100	18,603	396,820	19,841	191,949
1932-----	185	179	1,422	401	7,000	441	34,000	1,020	2,041

¹ No production in 1931.

The value of metal production herein reported has been calculated at the figures given in the table that follows. Gold is figured at the mint value for fine gold; that is, \$20.671835 an ounce. The silver price is the average New York price for bar silver. The copper, lead, and zinc prices are weighted averages, for each year, of all grades of primary metal sold by producers.

Prices of silver, copper, lead, and zinc, 1928-32

Year	Silver	Copper	Lead	Zinc	Year	Silver	Copper	Lead	Zinc
	<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>		<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>
1928-----	\$0.585	\$0.144	\$0.058	\$0.061	1931-----	\$0.290	\$0.091	\$0.037	\$0.038
1929-----	.533	.176	.063	.066	1932-----	.282	.063	.030	.030
1930-----	.385	.130	.050	.048					

90 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Mine production of gold, silver, copper, and lead in Texas in 1932, by counties and by classes of ore, in terms of recovered metals

County	Mines producing	Ore ¹		Gold	Silver		Copper		Lead		Total value
		Class	Short tons		Fine ounces	Value	Pounds	Value	Pounds	Value	
Hudspeth.....	1	Cop- per.	104	\$14	826	\$233	7,000	\$441	-----	-----	\$688
Presidio.....	1	Lead.	81	165	596	168	-----	-----	34,000	\$1,020	1,353
	2	-----	185	179	1,422	401	7,000	441	34,000	1,020	2,041

¹ All sold crude to smelters.

GOLD, SILVER, COPPER, LEAD, AND ZINC IN UTAH

(DETAILED STATISTICS—MINE REPORT)

By C. N. GERRY AND PAUL LUFF

SUMMARY

The output of gold, silver, copper, lead, and zinc from Utah mines in 1932 was valued at \$14,398,593, less than in any year since 1899 and about one half that in 1931. Since 1864 the output of the five metals in Utah has been as follows: Gold, \$142,453,322; silver, 592,437,273 fine ounces; copper, 4,782,070,979 pounds; lead, 7,079,214,164 pounds; and zinc, 924,784,964 pounds. The total value has been \$1,798,523,179.

The value of metal production herein reported has been calculated at the figures given in the table that follows. Gold is figured at the mint value for fine gold; that is, \$20.671835 an ounce. The silver price is the average New York price for bar silver. The copper, lead, and zinc prices are weighted averages, for each year, of all grades of primary metal sold by producers.

Prices of silver, copper, lead, and zinc, 1928-32

Year	Silver	Copper	Lead	Zinc	Year	Silver	Copper	Lead	Zinc
	<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>		<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>
1928.....	\$0.585	\$0.144	\$0.058	\$0.061	1931.....	\$0.290	\$0.091	\$0.037	\$0.038
1929.....	.533	.176	.063	.066	1932.....	.282	.063	.030	.030
1930.....	.385	.130	.050	.048					

Mine production of gold, silver, copper, lead, and zinc in Utah, 1928-32, in terms of recovered metals

Year	Mines producing		Ore, old tailings, etc. (short tons)	Gold		Silver	
	Lode	Placer		Fine ounces	Value	Fine ounces	Value
1928.....	121	3	18,427,117	212,559.79	\$4,394,001	17,072,852	\$9,987,618
1929.....	127	3	19,831,975	240,419.63	4,969,915	17,592,396	9,376,747
1930.....	103		11,041,841	208,455.03	4,309,148	13,129,421	5,054,827
1931.....	96	9	8,954,617	198,740.12	4,108,323	8,290,966	2,404,380
1932.....	86	19	3,768,542	135,256.35	2,795,997	6,962,097	1,963,311

Year	Copper		Lead		Zinc		Total value
	Pounds	Value	Pounds	Value	Pounds	Value	
1928.....	293,235,039	\$42,225,846	291,830,021	\$16,926,141	93,857,352	\$5,725,298	\$79,258,904
1929.....	318,282,523	56,017,724	298,754,429	18,821,529	103,019,485	6,799,286	95,985,201
1930.....	180,526,423	23,468,435	230,989,780	11,549,489	88,990,938	4,271,565	48,653,464
1931.....	151,236,505	13,762,522	158,423,453	5,861,668	74,581,072	2,834,081	28,970,074
1932.....	64,964,111	4,092,739	125,552,966	3,766,589	59,331,888	1,779,957	14,398,593

Mine production of gold, silver, copper, lead, and zinc in Utah in 1932, by counties, in terms of recovered metals

County	Gold		Silver	
	Fine ounces	Value	Fine ounces	Value
Beaver.....	7.84	\$162	126	\$35
Box Elder.....	275.11	5,687	124	35
Garfield.....	36.91	763	3	1
Grand.....	83.25	1,721	11	3
Iron.....	16.83	348	99	28
Juab.....	6,917.09	142,989	229,290	64,660
Millard.....	24.28	502	77	22
Piute.....	630.86	13,041	5,337	1,505
Salt Lake.....	70,207.56	1,451,319	1,983,151	559,249
Sevier.....	251.41	5,197	1,040	293
Summit.....	2,260.81	46,735	1,907,874	538,020
Tooele.....	4,690.29	96,957	206,087	58,116
Uintah.....	17.03	352		
Utah.....	49,409.40	1,021,383	2,206,208	622,151
Wasatch.....		8,841	422,670	119,193
Washington.....	427.68			
Total, 1931.....	135,256.35	2,795,997	6,962,097	1,963,311
	198,740.12	4,108,323	8,290,966	2,404,380

County	Copper		Lead		Zinc		Total value
	Pounds	Value	Pounds	Value	Pounds	Value	
Beaver.....							\$197
Box Elder.....	3,697	\$233	4,265	\$128			6,083
Garfield.....							764
Grand.....							1,724
Iron.....	70	4	140	4			384
Juab.....	355,162	22,375	1,046,652	31,400	112,464	\$3,374	264,798
Millard.....	249	16					540
Piute.....	933	59	5,282	158			14,763
Salt Lake.....	62,473,686	3,935,842	65,498,916	1,964,968	43,494,025	1,304,821	9,216,199
Sevier.....							5,490
Summit.....	866,519	54,591	24,521,249	735,638	15,000,088	450,003	1,824,987
Tooele.....	27,733	1,747	14,689,147	440,674			597,494
Uintah.....							352
Utah.....	1,142,748	71,993	19,002,709	570,081			2,285,608
Wasatch.....	34,814	2,193	784,606	23,538	725,311	21,759	175,524
Washington.....	58,500	3,686					3,686
Total, 1931.....	64,964,111	4,092,739	125,552,966	3,766,589	59,331,888	1,779,957	14,398,593
	151,236,505	13,762,522	158,423,453	5,861,668	74,581,072	2,834,081	28,970,974

Ore, old tailings, etc., sold or treated and lode mines producing in Utah, 1931 and 1932, by counties

County	Ore, old tailings, etc. (short tons)		Lode mines producing	
	1931	1932	1931	1932
	Beaver.....	7,128	17	4	2
Box Elder.....	12	1,146	1	5
Cache.....	2		1	
Garfield.....	2		1	
Grand.....			1	
Iron.....	115	38	1	1
Juab.....	69,739	32,044	16	15
Millard.....		23		3
Piute.....	441	799	5	6
Salt Lake.....	8,486,532	3,465,666	27	25
Sevier.....	100	273	1	1
Summit.....	119,642	97,540	5	1
Tooele.....	49,597	29,508	20	15
Uintah.....	4		1	
Utah.....	153,286	115,556	7	7
Wasatch.....	66,879	25,831	5	3
Washington.....	1,138	100	1	1
Total.....	8,954,617	3,768,542	96	86

The production of gold decreased 32 percent due to reduced output of copper ore and lead-zinc ore from Bingham and siliceous ore from the Tintic district. The value of the production of silver declined 18 percent—siliceous ore, copper ore, and lead ore contributing about equally to the decrease. The value of the output of copper declined 70 percent due almost entirely to curtailment by the Utah Copper Co. at Bingham. The value of the lead output decreased 36 percent and that of the zinc 37 percent due to lessened shipments of lead ore and lead-zinc ore.

MINING INDUSTRY

The mining industry of Utah in 1932 was reviewed in a preliminary statement issued in January 1933, and details were given in the Minerals Yearbook of the Bureau of Mines published in August 1933.

ORE CLASSIFICATION

Ore, old tailings, etc., sold or treated in Utah in 1932, with content in terms of recovered metals

Source	Mines producing	Ore, old tailings, etc.	Gold	Silver	Copper	Lead	Zinc
		<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Dry gold ore.....	45	1 99, 623	60, 938. 52	535, 405	1, 346, 556	840, 355	-----
Dry gold and silver ore.....	8	1, 967	588. 48	29, 086	32, 588	33, 739	-----
Dry silver ore.....	9	10, 394	640. 60	347, 997	84, 111	479, 879	-----
Copper ore.....	11	3, 196, 677	31, 066. 35	324, 693	² 61, 290, 507	192, 768	-----
Lead ore.....	36	88, 780	5, 217. 55	1, 951, 098	314, 396	39, 794, 930	-----
Copper-lead ore.....	2	8	52	195	934	2, 145	-----
Lead-zinc ore.....	8	371, 093	36, 652. 29	3, 773, 609	1, 895, 019	84, 209, 150	59, 331, 888
Total, lode mines.....	³ 86	3, 768, 542	135, 104. 31	6, 962, 083	² 64, 964, 111	125, 552, 966	59, 331, 888
Total, placers.....	19	-----	152. 04	14	-----	-----	-----
Total, 1931.....	105	3, 768, 542	135, 256. 35	6, 962, 097	² 64, 964, 111	125, 552, 966	59, 331, 888
	105	8, 954, 617	198, 740. 12	8, 290, 966	⁴ 151, 236, 505	158, 423, 453	74, 581, 072

¹ Includes 50 tons of old tailings reconcentrated and 45 tons of old mill cleanings sold to a smelter.

² Includes 4,490,379 pounds of copper saved from precipitates.

³ A mine producing more than 1 class of ore is counted but once in arriving at total for all classes.

⁴ Includes 5,386,279 pounds of copper saved from precipitates.

Value of metals from ore, old tailings, etc., sold or treated in Utah in 1932, by classes of ore

Class	Ore, old tailings, etc. (short tons)	Gold	Silver	Copper	Lead	Zinc	Total
Dry gold ore.....	99, 623	\$1, 259, 711	\$150, 984	\$84, 833	\$25, 211	-----	\$1, 520, 739
Dry gold and silver ore.....	1, 967	12, 165	8, 202	2, 053	1, 012	-----	23, 432
Dry silver ore.....	10, 394	13, 242	98, 135	5, 299	14, 396	-----	131, 072
Copper ore.....	3, 196, 677	642, 199	91, 563	¹ 3, 861, 302	5, 783	-----	4, 600, 847
Lead ore.....	88, 780	107, 856	550, 210	19, 807	1, 193, 848	-----	1, 871, 721
Copper-lead ore.....	8	11	55	59	64	-----	189
Lead-zinc ore.....	371, 093	757, 670	1, 064, 158	119, 386	2, 526, 275	\$1, 779, 957	6, 247, 446
Total, 1931.....	3, 768, 542	2, 792, 854	1, 963, 307	¹ 4, 092, 739	3, 766, 589	1, 779, 957	14, 395, 446
	8, 954, 617	4, 107, 539	2, 404, 378	² 13, 762, 522	5, 861, 668	2, 834, 081	28, 970, 183

¹ Includes value of 4,490,379 pounds of copper saved from precipitates.

² Includes value of 5,386,279 pounds of copper saved from precipitates.

Siliceous ore, old tailings, etc. (gold ore, gold and silver ore, and silver ore) decreased 16 percent from 1931 and accounted for 3 percent of the total output of ore, etc., in 1932; the Eureka Standard, Live Yankee, and Mammoth mines produced most of the siliceous ore. Copper ore accounted for 85 percent of the total in 1932, but the output was 61 percent less than in 1931 as a result of curtailment at the property of the Utah Copper Co. at Bingham. Lead ore decreased 37 percent and amounted to only 2 percent of the total output; the Tintic Standard and Bluestone mines were the chief producers of lead ore. Lead-zinc ore decreased 21 percent and amounted to 10 percent of the total; the United States, Silver King, Niagara, and Park City Consolidated mines produced nearly all the output.

Ore, old tailings, etc., sold or treated in Utah in 1932, by counties, with content in terms of recovered metals

DRY GOLD ORE

County	Ore, old tailings, etc.	Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Beaver.....	17	7.84	126			
Box Elder.....	1 1,117	269.15	55		1,947	
Grand.....	1	1.01				
Iron.....	38	16.83	99	70	140	
Juab.....	² 26,011	6,259.80	104,807	303,136	125,616	
Millard.....	23	15.48	77	249		
Piute.....	³ 787	625.53	5,075	819	1,130	
Salt Lake.....	10,139	3,649.69	28,344	155,952	85,732	
Sevier.....	¹ 273	251.41	1,040			
Tooele.....	⁴ 2,527	2,876.19	1,559	6,610	7,650	
Utah.....	58,690	46,965.59	394,223	879,720	618,140	
Total, 1931.....	99,623	60,938.52	535,405	1,346,556	840,355	
Total, 1932.....	94,769	72,056.66	683,132	628,855	1,690,484	

DRY GOLD AND SILVER ORE

Juab.....	1,415	366.98	17,587	14,517	28,999
Salt Lake.....	118	33.85	2,534	285	1,350
Utah.....	434	187.65	8,965	17,786	3,390
Total, 1931.....	1,967	588.48	29,086	32,588	33,739
Total, 1932.....	18,313	2,705.94	124,479	230,150	417,281

DRY SILVER ORE

Juab.....	978	73.01	27,732	14,152	29,622
Salt Lake.....	861	60.00	21,035	2,456	24,350
Tooele.....	7	.59	422		272
Utah.....	7,677	486.00	279,552	65,742	416,000
Wasatch.....	871	21.00	19,256	1,761	9,635
Total, 1931.....	10,394	640.60	347,997	84,111	479,879
Total, 1932.....	20,835	1,224.10	500,295	249,221	1,273,250

COPPER ORE

Box Elder.....	13		4	3,697	
Salt Lake.....	3,196,540	31,060.35	324,564	⁵ 61,225,737	192,768
Tooele.....	24	6.00	125	2,573	
Washington.....	100			58,500	
Total, 1931.....	3,196,677	31,066.35	324,693	⁵ 61,290,507	192,768
Total, 1932.....	8,212,141	65,018.65	679,503	⁶ 147,213,271	589,854

¹ Includes 1 ton of old mill cleanings sold to a smelter.

² Includes 39 tons of old mill cleanings sold to a smelter.

³ Includes 4 tons of old mill cleanings sold to a smelter.

⁴ Includes 50 tons of old tailings reconcentrated.

⁵ Includes 4,490,379 pounds of copper saved from precipitates.

⁶ Includes 5,386,279 pounds of copper saved from precipitates.

Ore, old tailings, etc., sold or treated in Utah in 1932, by counties, with content in terms of recovered metals—Continued

LEAD ORE

County	Ore, old tailings, etc.	Gold	Silver	Copper	Lead	Zinc
		Short tons	Fine ounces	Fine ounces	Pounds	Pounds
Box Elder	16	5.96	65		2,318	
Juab	3,360	199.69	75,920	23,357	789,623	
Piute	12	5.33	262	114	4,152	
Salt Lake	9,648	1,428.10	146,243	92,981	6,334,217	
Summit	44	1.32	1,215	284	19,961	
Tooele	26,945	1,806.99	203,925	18,160	14,679,480	
Utah	48,755	1,770.16	1,523,468	179,500	17,965,179	
Total, 1931	88,780	5,217.55	1,951,098	314,396	39,794,930	
	140,960	9,543.71	2,432,017	650,067	56,675,177	

COPPER-LEAD ORE

Salt Lake	3		139	544	400	
Tooele	5	0.52	56	390	1,745	
Total, 1931	8	.52	195	934	2,145	
	79	3.37	662	7,841	8,050	

LEAD-ZINC ORE

Juab	280	12.63	3,244		72,792	112,464
Salt Lake	248,357	33,973.49	1,460,292	995,731	58,860,099	43,494,025
Summit	97,496	2,259.49	1,906,659	866,235	24,501,238	15,000,089
Wasatch	24,960	406.68	403,414	33,053	774,971	725,311
Total, 1931	371,093	36,652.29	3,773,609	1,895,019	84,209,150	59,331,888
	467,520	48,149.77	3,870,872	2,257,100	97,769,357	74,581,072

Zinc products (as marketed from Utah mines and mills) sold to smelters and electrolytic plants in 1932

Classification	County	Quantity (dry weight)	Gross zinc	Average assay of concentrates	Recovered zinc
Zinc concentrates	Juab, Salt Lake, Summit, and Wasatch.	Short tons 58,463	Pounds 66,111,812	Percent 56.54	Pounds 59,331,888
Total, 1931		58,463 76,593	66,111,812 83,932,703	56.54 54.79	59,331,888 74,581,072

METALLURGIC INDUSTRY

Concentrates from 3,561,125 tons of ore and old tailings concentrated and from ore first amalgamated yielded metals valued at \$10,631,143. Thirteen milling plants were active in Utah in 1932; 1 treated gold ore by amalgamation and gravity concentration, 6 used straight gravity concentration, 1 used combined gravity and flotation concentration, and 5 used straight flotation. In addition, 2 plants recovered copper precipitates. About 94.5 percent of the total ore, old tailings, etc., produced in Utah in 1932 was treated at concentration plants, practically all using flotation equipment.

Utah ore and old tailings concentrated in 1932, by classes of ore, etc., methods of concentration, and classes of concentrates

Class of material concentrated	Method of concentration	Ore and old tailings concentrated	Gross content of mill feed				
			Gold	Silver	Copper	Lead	Zinc
Copper sulphide ore.....	Flotation.....	<i>Short tons</i> 3, 169, 411	<i>Fine ounces</i> 35, 243. 85	<i>Fine ounces</i> 297, 798	<i>Pounds</i> 61, 727, 448	<i>Pounds</i> 5, 945, 059	<i>Pounds</i> 83, 235, 269
Lead sulphide and oxidized ore.....	do.....	17, 294	807. 63	417, 355	59, 924	91, 945, 559	83, 235, 269
Lead-zinc sulphide ore.....	do.....	1 371, 093	43, 780. 68	3, 944, 603	2, 970, 617	97, 890, 618	83, 235, 269
		¹ 3, 557, 798	79, 832. 16	4, 659, 756	64, 757, 089	97, 890, 618	83, 235, 269
Siliceous gold ore and old tailings.....	Gravity.....	² 242	71. 00	190	3, 720	508, 130	
Lead sulphide ore.....	do.....	3, 085	30. 25	9, 670	3, 720	508, 130	
		3, 327	101. 25	9, 860	3, 720	508, 130	
		3, 561, 125	79, 933. 41	4, 669, 616	64, 761, 709	98, 398, 748	83, 235, 269

Class of material concentrated	Method of concentration	Concentrates produced		Gross content of concentrates				
		Class	Quantity	Gold	Silver	Copper	Lead	Zinc
Copper sulphide ore.....	Flotation.....	Copper sulphide.....	<i>Short tons</i> 88, 712	<i>Fine ounces</i> 25, 399. 00	<i>Fine ounces</i> 247, 130	<i>Pounds</i> 57, 477, 385	<i>Pounds</i> 5, 388, 888	<i>Pounds</i> 66, 111, 812
Lead sulphide and oxidized ore.....	do.....	(Lead sulphide and oxidized.....)	6, 535	578. 58	340, 459	47, 716	5, 388, 888	66, 111, 812
		(Siliceous.....)	355	18. 48	257	876	19, 450	66, 111, 812
			6, 890	597. 06	340, 716	48, 592	5, 408, 338	66, 111, 812
Lead-zinc sulphide ore.....	do.....	(Lead sulphide.....)	69, 218	24, 093. 54	3, 493, 107	1, 673, 291	84, 016, 246	66, 111, 812
		(Zinc sulphide.....)	58, 463	2, 876. 67	208, 962	627, 543	2, 130, 005	66, 111, 812
		(Siliceous.....)	57, 062	9, 682. 08	71, 540	233, 594	1, 953, 901	66, 111, 812
			184, 743	36, 652. 29	3, 773, 609	2, 534, 428	88, 100, 152	66, 111, 812
			280, 345	62, 648. 35	4, 361, 455	60, 060, 405	93, 508, 490	66, 111, 812

Siliceous gold ore and old tailings.....	Gravity.....	Siliceous.....	³ 10	52.57	148	-----	-----	-----
Lead sulphide ore.....	do.....	Lead sulphide.....	562	23.80	7,876	2,979	418,143	-----
			572	76.37	8,024	2,979	418,143	-----
			⁴ 280,917	62,724.72	4,369,479	60,063,384	93,926,633	66,111,812

¹ Includes 4,200 tons of ore treated by combined gravity and flotation concentration.

² Includes 50 tons of old tailings.

³ Includes 1 ton of concentrates from old tailings re-treated.

⁴ Figures do not include 65 tons of siliceous concentrates from ore first treated by amalgamation, containing 105.57 ounces of gold, 11 ounces of silver, and 2,031 pounds (1,947 pounds recovered) of lead.

Gross metal content of Utah concentrates produced in 1932, by classes of concentrates

Class of concentrates	Concentrates produced (dry weight)	Gross metal content				
		Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Dry and siliceous.....	57,492	9,858.70	71,956	234,470	1,975,382	-----
Copper.....	88,712	25,399.00	247,130	57,477,385	-----	-----
Lead.....	76,315	24,695.92	3,841,442	1,723,986	89,823,277	-----
Zinc.....	58,463	2,876.67	208,962	627,543	2,130,005	66,111,812
	280,982	62,830.29	4,369,490	60,063,384	93,928,664	66,111,812
Total, 1931.....	449,380	103,983.29	5,228,020	145,794,838	116,876,595	83,932,703

Mine production of metals from Utah concentrates in 1932, in terms of recovered metals

BY COUNTIES

	Ore and old tailings to concentrating mills			Concentrates and recovered metal				
	Ore	Old tailings	Concentrates produced	Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Short tons</i>	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Beaver.....	12	-----	4	6.44	126	-----	-----	-----
Box Elder.....	15	-----	168	111.53	49	-----	4,100	-----
Juab.....	460	-----	203	34.76	3,266	-----	72,792	112,464
Salt Lake.....	3,419,571	-----	238,812	59,560.69	1,711,531	56,626,346	59,141,317	43,494,025
Summit.....	97,496	-----	33,080	2,259.49	1,906,659	866,235	24,501,288	15,000,088
Tooele.....	2,045	50	410	39.84	4,298	1,172	272,368	-----
Utah.....	16,516	-----	6,288	410.86	340,147	29,986	5,036,343	-----
Wasatch.....	24,960	-----	2,117	406.68	403,414	33,053	774,971	725,311
	3,561,075	50	280,982	62,830.29	4,369,490	57,556,792	89,803,179	59,331,888
Total, 1931.....	8,660,183	100	449,380	103,983.29	5,228,020	140,521,177	111,290,739	74,581,072

BY CLASSES OF CONCENTRATES

Dry and siliceous.....	157,492	9,858.70	71,956	150,023	1,877,357	-----
Copper.....	88,712	25,399.00	247,130	55,618,143	-----	-----
Lead.....	76,315	24,695.92	3,841,442	1,273,814	86,025,721	-----
Zinc.....	58,463	2,876.67	208,962	514,812	1,900,101	59,331,888

¹ Figures include 65 tons of concentrates from ore first treated by amalgamation, yielding 105.57 ounces of gold, 11 ounces of silver, and 1,947 pounds of lead.

Gross metal content of Utah crude ore shipped to smelters in 1932, by classes of ore

Class of ore	Ore (dry weight)	Gross metal content			
		Gold	Silver	Copper	Lead
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>
Dry and siliceous.....	110,797	61,625.42	911,003	1,512,491	2,307,200
Copper.....	27,266	5,667.35	77,563	1,218,226	350,870
Lead.....	68,401	4,596.69	1,602,506	349,143	35,639,650
Copper-lead.....	8	.52	195	1,027	2,536
	206,472	71,889.98	2,591,267	3,080,887	38,300,256
Total, 1931.....	282,026	93,781.55	3,015,402	5,542,446	50,796,096

Mine production of metals from Utah crude ore shipped to smelters in 1932, in terms of recovered metals

BY COUNTIES

	Ore	Gold	Silver	Copper	Lead
	Short tons	Fine ounces	Fine ounces	Pounds	Pounds
Beaver.....	5	1.40			
Box Elder.....	230	23.02	43	3,697	165
Grand.....	1	1.01			
Iron.....	38	16.83	99	70	140
Juab.....	31,545	6,724.15	224,815	354,490	973,160
Millard.....	23	15.48	77	249	
Plute.....	795	581.99	5,292	933	5,282
Salt Lake.....	46,095	10,644.79	271,620	1,356,961	6,357,599
Sevier.....	272	210.00	1,000		
Summit.....	44	1.32	1,215	284	19,961
Tooele.....	27,413	4,650.45	201,789	26,561	14,416,779
Utah.....	99,040	48,998.54	1,866,061	1,112,762	13,966,366
Wasatch.....	871	21.00	19,256	1,761	9,635
Washington.....	100			58,500	
Total, 1931.....	206,472	71,889.98	2,591,267	2,916,268	35,749,087
	282,026	93,781.55	3,015,402	5,274,067	46,861,102

BY CLASSES OF ORE

Dry and siliceous.....	110,797	61,625.42	911,003	1,462,583	1,351,326
Copper.....	27,266	5,667.35	77,563	1,181,985	192,768
Lead.....	63,401	4,596.69	1,602,506	270,766	34,202,848
Copper-lead.....	8	.52	195	934	2,145

PRODUCTION BY MINING DISTRICTS

The following tables show the mineral production of Utah by mining districts. The first covers 1932, and the districts are listed by counties to conform to the arrangement of the review by districts formerly given in the mine chapters of Mineral Resources. Special tables with historical summaries are given for the Tintic, Big and Little Cottonwood, Bingham, Park City, and American Fork districts.

Mine production of gold, silver, copper, lead, and zinc in Utah in 1932, by counties and districts, in terms of recovered metals

County and district	Mines producing		Ore, old tailings, etc.	Gold	Silver	Copper	Lead	Zinc	Total value
	Lode	Placer							
Beaver County:			Short tons		Fine ounces	Pounds	Pounds	Pounds	
Fortuna.....	1		(¹)						(¹)
Newton.....	1		12	\$133	126				\$168
Box Elder County:									
Clear Creek.....	1		(¹)		(¹)		(¹)		(¹)
Lucin.....	1		13		4	3,697			234
Park Valley.....	2		1,117	5,564	55		1,947		5,637
Raft River.....	1		15	123	38		2,153		199
Garfield County:									
Imperial.....		2		763	3				764
Grand County:									
Colorado River.....	4			1,469	11				1,472
Green River.....	1			60					60
Miners Basin.....		3		171					171
Westwater.....	1		(¹)	(¹)					(¹)
Iron County: State-line.....	1		38	348	99	70	140		384

¹ Included under "Undistributed."

100 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Mine production of gold, silver, copper, lead, and zinc in Utah in 1932, by counties and districts, in terms of recovered metals—Continued

County and district	Mines producing		Ore, old tailings, etc.	Gold	Silver	Copper	Lead	Zinc	Total value
	Lode	Placer							
Juab County:			<i>Short tons</i>		<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	
Detroit.....	1		274	\$3,101	178	3,601	340		\$3,388
Drum.....		1		103					103
Fish Springs.....	1		29	21	2,343		21,228		1,319
Mount Nebo.....	1		26		116		13,176		428
Spring Creek.....	1		181	581	25				588
Tintic ¹	10		31,256	137,550	224,592	349,581	944,628	112,464	254,621
West Tintic.....	1		278	1,633	2,036	1,980	67,280		4,351
Millard County:									
Detroit.....	2		22	300	77	249			338
Sawtooth Mountains.....	1	2	1	202					202
Piute County:									
Gold Mountain.....	3		376	6,855	2,803				7,645
Mount Baldy.....	1		370	5,219	2,216	819	1,130		5,930
Ohio.....	2		53	967	318	114	4,152		1,188
Salt Lake County:									
Big Cottonwood.....	6		394	377	7,449	3,512	188,484		8,354
Little Cottonwood.....	4		94	586	1,888	1,198	29,440	1,446	2,120
West Mountain (Bingham).....	15	2	3,465,178	1,450,356	1,973,814	62,468,976	65,280,992	43,492,579	9,205,725
Sevier County: Gold Mountain.....	1		273	5,197	1,040				5,490
Summit County:									
Utah.....	1		97,540	46,735	1,907,874	866,519	24,521,249	15,000,088	1,824,987
Tooele County:									
Camp Floyd.....	2		478	5,631	30				5,639
Clifton.....	7		2,882	54,044	1,753	9,183	175,333		60,376
Lakeside.....	1		178		248		65,255		2,027
Ophir.....	1		21	56	1,023		4,327		475
Rush Valley.....	3		25,947	37,155	203,033	18,550	14,444,232		528,906
Willow Springs.....	1		(¹)	(¹)					(¹)
Utah County:									
Green River.....		4		352					352
Utah County:									
American Fork.....	2		21,617	147,710	58,826	545,380	263,120		206,551
Tintic ²	5		93,939	873,673	2,147,382	597,368	18,739,589		2,079,057
Wasatch County:									
Blue Ledge.....	1		25,831	8,841	422,670	34,814	784,606	725,311	175,524
Snake Creek.....	2								
Washington County:									
Tutsagubet.....	1		100			58,500			3,686
Undistributed ³			9	121	27		165		134
Total Utah.....	86		19,376,542	2,795,997	6,962,097	64,964,111	125,552,966	59,331,888	14,398,593

¹ Included under "Undistributed."
² Tintic district lies in both Juab and Utah Counties.
³ Includes items entered as "(¹)" above.

Mine production of gold, silver, copper, lead, and zinc in Tintic district, Juab and Utah Counties, Utah, 1931 and 1932, and total, 1869-1932, in terms of recovered metals

	Mines producing	Ore, old tailings, etc.	Gold	Silver	Copper	Lead	Zinc	Total value
1932		<i>Short tons</i>		<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	
Juab County.....	10	¹ 31,256	\$137,550	224,592	349,581	944,628	112,464	\$254,621
Utah County.....	5	93,939	873,673	2,147,382	597,368	18,739,589		2,079,057
Total, 1931.....	15	¹ 125,195	1,011,223	2,371,974	946,949	19,684,217	112,464	2,333,678
	15	² 216,698	1,594,021	3,286,748	1,568,747	36,853,599	791,130	4,083,580
Total, 1869-1932.....		(³)	44,584,817	227,855,816	218,927,173	1,659,162,555	31,891,406	338,424,239

¹ Includes 38 tons of assay-office cleanings sold to a smelter.
² Includes 9,111 tons of old tailings sold to a smelter.
³ Figures not available.

NOTE.—Total dividends, 1869-1932, \$55,021,176.

Mine production of gold, silver, copper, lead, and zinc in Tintic district, Juab and Utah Counties, Utah, in 1932, by classes of ore, in terms of recovered metals

Class of ore	Mines producing	Ore and old cleanings	Gold	Silver	Copper	Lead	Zinc
		<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Dry and siliceous.....	17	1 74, 189	47, 017. 42	777, 980	747, 452	1, 102, 427	-----
Lead.....	8	50, 726	1, 887. 85	1, 590, 750	199, 497	18, 508, 998	-----
Lead-zinc.....	1	280	12. 63	3, 244	-----	72, 792	112, 464
	2 15	1 125, 195	48, 917. 90	2, 371, 974	946, 949	19, 684, 217	112, 464

¹ Includes 38 tons of assay-office cleanings sold to a smelter.

² A mine producing more than one class of ore is counted but once in arriving at total for all classes.

Mine production of gold, silver, copper, lead, and zinc in Big Cottonwood and Little Cottonwood districts, Utah, 1931 and 1932, and total, 1867-1932, in terms of recovered metals

Year	Mines producing	Ore	Gold	Silver	Copper	Lead	Zinc	Total value
		<i>Short tons</i>		<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	
1931.....	10	657	\$3, 177	20, 317	10, 306	234, 943	13, 017	\$19, 194
1932.....	10	488	963	9, 337	4, 710	217, 924	1, 446	10, 474
Total, 1867-1932.....		607, 514	572, 342	16, 466, 343	15, 845, 849	232, 170, 612	785, 667	33, 355, 896

Mine production of gold, silver, copper, lead, and zinc in Bingham or West Mountain district, Utah, 1931 and 1932, and total, 1865-1932, in terms of recovered metals

Year	Mines producing	Ore, etc.	Gold	Silver	Copper ¹	Lead	Zinc	Total value
		<i>Short tons</i>		<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	
1931.....	17	² 8, 485, 873	³ \$2, 209, 151	2, 502, 057	⁴ 147, 706, 141	67, 193, 735	53, 215, 489	\$20, 884, 363
1932.....	17	3, 465, 178	³ 1, 450, 356	1, 973, 814	⁵ 62, 468, 976	65, 280, 992	43, 492, 579	9, 205, 725
Total, 1865-1932.....		(⁶)	³ 61, 621, 550	³ 87, 857, 645	4, 380, 516, 599	2, 180, 779, 657	425, 466, 892	978, 489, 552

¹ Includes copper saved from precipitates.

² Includes 19 tons of old mill cleanings sold to a smelter.

³ Includes placer production.

⁴ Includes 5,386,279 pounds of copper saved from precipitates.

⁵ Includes 4,490,379 pounds of copper saved from precipitates.

⁶ Figures not available.

NOTE.—Total dividends, 1865-1932, \$242,889,503.

Mine production of gold, silver, copper, lead, and zinc in Bingham or West Mountain district, Utah, in 1932, by classes of ore, in terms of recovered metals

Class of ore	Mines producing	Ore	Gold	Silver	Copper	Lead	Zinc
		<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Dry and siliceous.....	10	11, 101	3, 731. 73	51, 834	158, 677	111, 287	-----
Copper.....	8	3, 196, 539	31, 059. 35	324, 561	61, 225, 600	192, 768	-----
Lead.....	9	9, 187	1, 394. 40	137, 179	89, 026	6, 118, 696	-----
Lead-zinc.....	3	248, 351	33, 973. 42	1, 460, 240	995, 673	58, 858, 241	43, 492, 579
	2 15	3, 465, 178	3 70, 158. 90	1, 973, 814	62, 468, 976	65, 280, 992	43, 492, 579

¹ Includes 4,490,379 pounds of copper saved from precipitates.

² A mine producing more than one class of ore is counted but once in arriving at total for all classes.

³ Also 2.08 ounces of gold, valued at \$43, produced from placers.

102 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Mine production of gold, silver, copper, lead, and zinc in Park City region, Summit and Wasatch Counties, Utah, 1931 and 1932, and total, 1870-1932, in terms of recovered metals

Year	Mines producing	Ore and old tailings	Gold	Silver	Copper	Lead	Zinc	Total value
1931.....	10	Short tons 186,521	\$104,208	Fine ounces 2,124,177	Pounds 818,545	Pounds 34,736,616	Pounds 18,871,329	\$2,797,072
1932.....	4	123,371	55,576	2,330,544	901,333	25,305,855	15,725,399	2,000,511
Total, 1870-1932.....	(¹)		8,208,968	203,856,299	55,782,027	2,018,613,840	366,903,115	292,425,304

¹ Figures not available.

NOTE.—Total dividends, 1870-1932, \$64,277,722.

Mine production of gold, silver, copper, lead, and zinc in Park City region, Summit and Wasatch Counties, Utah, in 1932, by classes of ore, in terms of recovered metals

Class of ore	Mines producing	Ore	Gold	Silver	Copper	Lead	Zinc
Dry and siliceous.....	2	Short tons 871	Fine ounces 21.00	Fine ounces 19,256	Pounds 1,761	Pounds 9,635	Pounds
Lead.....	1	44	1.32	1,215	284	19,961	-----
Lead-zinc.....	3	122,456	2,666.17	2,310,073	899,288	25,276,259	15,725,399
	¹ 4	123,371	2,688.49	2,330,544	901,333	25,305,855	15,725,399

¹ A mine producing more than one class of ore is counted but once in arriving at total for all classes.

Mine production of gold, silver, copper, lead, and zinc in American Fork district, Utah, 1931 and 1932, and total, 1870-1932, in terms of recovered metals

Year	Mines producing	Ore	Gold	Silver	Copper	Lead	Zinc	Total value
1931.....	2	Short tons 5,671	\$66,315	Fine ounces 17,836	Pounds 247,007	Pounds 69,500	Pounds	\$96,537
1932.....	2	21,617	147,710	58,826	545,380	263,120	-----	206,551
Total, 1870-1932.....	-----	126,855	766,098	2,126,589	1,822,323	32,244,656	313,926	4,982,616

NATURAL GAS

(DETAILED STATISTICS)

By G. R. HOPKINS AND H. BACKUS

SUMMARY

Salient statistics for natural gas in the United States, 1912, 1922, and 1930-32

	1912	1922	1930	1931	1932
Natural gas:					
Production..... millions of cubic feet..	562, 203	762, 546	1, 943, 421	1, 686, 436	1, 555, 990
Exports:					
To Canada..... do.....			107	74	83
To Mexico..... do.....			1, 691	2, 157	1, 610
Imports from Canada..... do.....			21	44	38
Consumption:					
Domestic..... do.....	193, 455	254, 413	295, 700	294, 406	298, 520
Commercial..... do.....			80, 707	86, 491	87, 367
Industrial:					
Field..... do.....	(¹)	197, 850	723, 165	571, 365	529, 378
Carbon-black plants..... do.....	(¹)	53, 629	266, 625	195, 396	168, 237
Petroleum refineries..... do.....	(¹)	(¹)	98, 842	75, 548	67, 467
Electric public-utility power plants ² do.....	(¹)	27, 172	120, 290	138, 343	107, 239
Portland cement plants ³ do.....	(¹)	(¹)	41, 256	31, 381	296, 127
Other industrial..... do.....	368, 748	229, 482	315, 059	291, 319	
	562, 203	762, 546	1, 941, 644	1, 684, 249	1, 554, 335
Domestic..... percent.....	34	33	16	18	19
Commercial..... do.....			4	5	6
Industrial..... do.....			66	67	80	77
Number of consumers:					
Domestic..... thousands.....	1, 623	3, 015	5, 035	4 6, 443	6, 506
Commercial..... do.....			413	4 518	531
Industrial..... do.....			15	(⁵) 21	6 28	6 30
Number of producing gas wells.....	30, 905	(⁵)	55, 020	55, 756	54, 156
Value (at wells) of gas produced:					
Total..... thousands of dollars.....	(⁵)	84, 873	147, 048	117, 505	98, 985
Average per M cubic feet..... cents.....	(⁵)	11. 1	7. 6	7. 0	6. 4
Value (at points of consumption) of gas consumed:					
Total..... thousands of dollars.....	84, 564	221, 535	415, 519	392, 156	384, 123
Domestic..... do.....	50, 961	126, 902	200, 615	208, 262	223, 377
Commercial..... do.....	33, 603	94, 633	38, 558	41, 347	44, 000
Industrial..... do.....			176, 346	142, 547	116, 746
Average per M cubic feet:					
Domestic..... cents.....	(⁵)	(⁵)	67. 8	70. 7	74. 8
Commercial..... do.....	(⁵)	(⁵)	47. 8	47. 8	50. 4
Industrial..... do.....	9. 1	18. 6	11. 3	10. 9	19. 0
Domestic and commercial..... do.....	26. 3	49. 9	63. 5	65. 5	69. 3
Domestic, commercial, and industrial..... do.....	15. 0	29. 1	21. 4	23. 3	24. 7
Treated for natural gasoline:					
Quantity..... millions of cubic feet.....	4, 688	545, 139	2, 088, 778	1, 790, 119	1, 499, 756
Percent of total consumption.....	0. 8	71	108	106	96
Natural gasoline:					
Production..... thousands of gallons.....	12, 081	505, 832	2, 210, 494	1, 831, 918	1, 523, 800
Value at plants:					
Total..... thousands of dollars.....	1, 157	72, 711	128, 160	63, 732	49, 244
Average per gallon..... cents.....	9. 6	14. 4	5. 8	3. 5	3. 2
Carbon black:					
Production..... thousands of pounds.....	(⁵)	67, 795	379, 942	280, 907	242, 700
Value at plants:					
Total..... thousands of dollars.....	(⁵)	5, 820	14, 852	8, 621	6, 664
Average per pound..... cents.....	(⁵)	8. 6	3. 9	3. 1	2. 7

¹ Included under "Other industrial"; separate figures not available.

² U. S. Geological Survey.

³ Bagley, B. W., Mineral Resources, chapters on Cement.

⁴ Revised figures.

⁵ Figures not available.

⁶ Exclusive of oil- and gas-field operators.

PRODUCTION

Natural gas produced in the United States and delivered to consumers, 1912, 1922, and 1930-32, by States, in millions of cubic feet

Year	Arkansas	California	Illinois	Indiana	Kansas	Kentucky	Louisiana	Montana	New York	Ohio
1912.....	(¹)	9,355	5,603	3,618	28,068	1,951	² 14,493	-----	8,626	56,210
1922.....	9,700	84,580	3,383	947	20,289	5,872	70,267	486	6,947	51,451
1930.....	18,585	334,789	2,890	1,217	37,630	28,023	278,341	10,060	9,624	63,304
1931.....	13,300	305,930	2,130	1,337	38,742	27,870	224,155	10,949	7,868	56,326
1932.....	10,235	263,484	1,769	1,349	40,690	29,005	201,561	13,295	8,813	51,466

Year	Oklahoma	Pennsylvania	Texas	West Virginia	Wyoming	Others	Total	Value at points of consumption	
								Total (thousands of dollars)	Average per M cubic feet (cents)
1912.....	73,799	112,150	7,470	239,007	(¹)	1,853	562,203	84,564	15.0
1922.....	140,631	101,276	47,945	195,288	23,427	27	762,546	221,535	29.1
1930.....	348,116	88,706	517,880	144,180	43,219	16,767	1,943,421	416,090	21.4
1931.....	263,685	74,797	464,580	124,797	39,770	30,200	1,686,436	392,816	23.3
1932.....	255,487	61,611	456,832	100,540	28,938	30,915	1,555,990	384,632	24.7

¹ Included under "Others."

² Includes Alabama.

Natural gas produced and consumed in the United States in 1932, by States

State	Produced and delivered to consumers, including deliveries in other States					Consumed, including receipts from other States				
	Quantity		Estimated value at the wells		Value at points of consumption		Quantity		Value at points of consumption	
	M cubic feet	Percent of total	Total	Average per M cubic feet (cts.)	Total	Average per M cubic feet (cts.)	M cubic feet	Percent of total	Total	Average per M cubic feet (cents)
Ala										
Alaska	(1)	(1)	(1)	(1)	(1)	(1)				
Ariz.										
Ark	10,235,000	0.6	521,000	5.1	2,242,000	21.9				
Calif.	263,484,000	16.9	17,126,000	6.5	73,172,000	27.8	263,484,000	16.9	73,172,000	27.8
Colo.	2,547,000	.2	67,000	2.6	757,000	29.7	16,409,000	1.1	6,236,000	38.0
D. C.										
Fla.										
Ga.										
Ill.	1,769,000	.1	144,000	8.1	1,016,000	57.4	3,947,000	.2	2,935,000	74.4
Ind.	1,349,000	.1	386,000	28.6	842,000	62.4	29,432,000	1.9	30,569,000	103.8
Iowa										
Kans.	40,690,000	2.6	3,043,000	7.5	13,420,000	33.0	7,533,000	.5	2,413,000	32.0
Ky.	29,005,000	1.9	4,037,000	13.9	13,551,000	46.7	56,965,000	3.7	16,468,000	28.9
La.	201,561,000	12.9	6,127,000	3.0	36,992,000	18.4	13,698,000	.9	6,067,000	44.3
Md.										
Mich.	968,000	.1	124,000	12.8	262,000	27.1	113,215,000	7.3	12,771,000	11.3
Minn.										
Miss.	8,643,000	.5	380,000	4.4	2,324,000	26.9	639,000	(2)	547,000	85.6
Mo.	932,000	.1	79,000	8.5	502,000	53.9	968,000	.1	262,000	27.1
Mont.	13,295,000	.8	560,000	4.2	4,359,000	32.8	968,000	(2)	262,000	(2)
Nebr.										
N. Mex.	17,604,000	1.1	364,000	2.1	2,443,000	13.9	(3)	(3)	1,806,000	31.3
N. Y.	8,813,000	.6	2,613,000	29.6	6,124,000	69.5	5,762,000	1.6	11,968,000	47.3
N. Dak.										
Ohio	51,466,000	3.3	3,698,000	16.9	28,640,000	55.6	11,100,000	.7	3,359,000	30.3
Okl.	255,487,000	16.4	9,862,000	3.9	28,108,000	11.0	8,661,000	.6	3,094,000	35.7
Pa.	61,611,000	4.0	15,403,000	25.0	32,080,000	52.1	11,880,000	.8	1,463,000	12.3
S. Dak.	10,000	(2)	700	7.0	4,000	40.0	16,724,000	1.1	11,626,000	69.5
Tenn.	22,000	(2)	3,300	15.0	8,000	36.4	2,133,000	* 1	478,000	* 33.2
Tex.	456,832,000	29.4	9,868,000	2.2	89,066,000	19.5	94,414,000	6.1	52,595,000	55.7
Utah	184,000	(1*)	12,000	6.5	194,000	151.1	246,741,000	15.9	22,082,000	8.9
Va.										
Wash.	(1)	(1)	(1)	(1)	(1)	(1)				
W. Va.	100,540,000	6.5	18,630,000	18.5	44,557,000	44.3	76,935,000	4.9	37,951,000	49.3
Wyo.	28,938,000	1.9	932,000	3.2	4,064,000	14.0	2,776,000	.2	1,124,000	40.5
Total, 1932	1,555,990,000	100.0	98,985,000	6.4	384,632,000	24.7	1,554,335,000	100.0	384,123,000	24.7
Total, 1931	1,686,436,000	100.0	117,505,000	7.0	392,816,000	23.3	1,684,249,000	100.0	392,156,000	23.3

1 Utah includes Alaska and Washington.
 2 Less than 0.1 percent.
 3 North Dakota includes Minnesota.
 4 Includes 33,000 M cubic feet piped from Canada.
 5 Includes 46,000 M cubic feet piped to Canada.
 6 Includes 37,000 M cubic feet piped to Canada.
 7 Includes 1,610,000 M cubic feet piped to Mexico.

CONSUMPTION

Natural gas consumed in the United States 1912, 1922, and 1930-32

Year	Domestic and commercial consumption							Average number of M cubic feet used per domestic and commercial consumer	Average value at points of consumption per M cubic feet (cents)
	Consumers (thousands)			Billions of cubic feet					
	Domestic	Commercial	Total	Domestic	Commercial	Total			
1912.....	¹ 1,623	(¹)	1,623	¹ 193	(¹)	193	119.2	26.3	
1922.....	¹ 3,015	(¹)	3,015	¹ 255	(¹)	255	84.4	49.9	
1930.....	5,035	413	5,448	296	81	377	69.1	63.5	
1931.....	² 6,443	² 518	² 6,961	294	87	381	² 54.7	65.5	
1932.....	² 6,506	⁴ 531	7,037	299	87	386	54.8	69.3	

Year	Industrial consumption							Total consumption		
	Billions of cubic feet							Average value at points of consumption per M cubic feet (cents)	Billions of cubic feet	Average value at points of consumption per M cubic feet (cents)
	Field	Carbon black	Petroleum refineries	Electric public-utility power plants ⁵	Portland cement plants ⁶	Other industrial	Total industrial			
1912.....	(⁷)	(⁷)	(⁷)	(⁷)	(⁷)	(⁷)	369	9.1	562	15.0
1922.....	198	54	(⁷)	27	(⁷)	229	508	18.6	763	29.1
1930.....	723	267	99	120	41	315	1,565	11.3	1,942	21.4
1931.....	571	196	76	138	31	291	1,303	10.9	1,684	23.3
1932.....	529	168	68	107	(⁸)	296	1,168	10.0	1,554	24.7

¹ Domestic includes commercial; separate figures not available.² Revised figures.³ Includes 1,683,580 consumers served with mixed gas; for 1930 and 1931 see following table.⁴ Includes 106,790 consumers served with mixed gas; for 1930 and 1931 see following table.⁵ U. S. Geological Survey.⁶ Bagley, B. W., Mineral Resources, chapters on Cement.⁷ Figures not available.⁸ Included under "Other industrial."

Consumption of natural gas used with manufactured gas in the United States in 1932, by States

State	Domestic		Commercial		Industrial		Total	
	Consumers	M cubic feet	Consumers	M cubic feet	Field	Other	M cubic feet	Value at points of consumption
					M cubic feet	M cubic feet		
District of Columbia.....	112,310	1,284,000	6,570	152,000	-----	252,000	1,688,000	\$1,442,000
Illinois.....	942,080	13,073,000	54,130	2,641,000	-----	3,237,000	18,951,000	28,294,000
Indiana.....	28,830	482,000	1,410	83,000	-----	7,960,000	8,525,000	2,181,000
Iowa.....	30,190	452,000	1,820	74,000	-----	294,000	820,000	578,000
Kentucky.....	64,620	2,938,000	6,880	772,000	54,000	410,000	4,174,000	1,852,000
Maryland.....	9,120	96,000	260	2,000	-----	3,000	101,000	99,000
Missouri.....	212,820	1,323,000	12,980	271,000	1,000	655,000	2,250,000	1,834,000
New York.....	109,030	1,104,000	6,270	213,000	19,000	113,000	1,449,000	1,552,000
Ohio.....	145,920	2,971,000	15,190	926,000	-----	457,000	4,354,000	2,792,000
Pennsylvania.....	18,890	106,000	790	15,000	-----	19,000	140,000	189,000
Virginia.....	9,770	107,000	490	20,000	-----	16,000	143,000	155,000
Total, 1932.....	1,683,580	23,936,000	106,790	5,169,000	74,000	13,416,000	42,595,000	40,968,000
Total, 1931.....	1,604,530 ¹	11,941,400	106,750 ¹	2,935,000	6,000 ¹	2,423,600 ¹	17,306,000 ¹	13,480,000
1930.....	274,100	7,550,000	27,680 ²	2,290,000	18,000 ²	1,468,000 ²	11,326,000 ²	6,356,000

¹ Revised figures—caused by revising Ohio to following: Domestic, 3,206,000 M cubic feet; commercial 978,000 M cubic feet; other industrial, 539,000 M cubic feet; total, 4,723,000 M cubic feet, \$3,005,000.² Revised figures.

Domestic and commercial consumption of natural gas in the United States in 1932, by States¹

State	Domestic				Commercial				Total			
	Consumers	M cubic feet	Value at points of consumption		Consumers	M cubic feet	Value at points of consumption		Consumers	M cubic feet	Value at points of consumption	
			Total	Average (cents)			Total	Average (cents)			Total	Average (cents)
Alabama.....	21,120	748,000	\$1,023,000	136.8	310	137,000	\$63,000	46.0	21,430	885,000	\$1,086,000	122.7
Arizona.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Arkansas.....	55,830	4,874,000	2,678,000	54.9	8,200	2,089,000	881,000	42.2	64,030	6,968,000	3,559,000	51.1
California.....	1,276,150	50,127,150	47,070,000	93.9	74,450	10,799,000	6,605,000	61.2	1,350,600	60,924,000	53,675,000	88.1
Colorado.....	87,210	4,154,000	3,552,000	85.5	7,970	1,229,000	769,000	62.6	95,180	5,383,000	4,321,000	80.3
District of Columbia.....	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Florida.....	2,930	68,000	116,000	170.6	10	3,000	1,000	33.3	2,940	71,000	117,000	164.8
Georgia.....	56,010	1,692,000	2,238,000	132.3	2,690	803,000	365,000	45.5	58,700	2,495,000	2,603,000	104.3
Illinois.....	973,700	13,417,000	23,013,000	171.5	56,570	2,696,000	4,017,000	149.0	1,030,270	16,113,000	27,030,000	167.8
Indiana.....	60,250	1,321,000	1,457,000	110.3	2,650	202,000	171,000	84.7	62,900	1,523,000	1,628,000	106.9
Iowa.....	52,730	1,033,000	1,093,000	105.8	4,200	295,000	208,000	70.5	56,930	1,328,000	1,301,000	98.0
Kansas.....	173,160	13,191,000	8,665,000	65.7	18,930	7,084,000	2,569,000	36.3	192,090	20,275,000	11,234,000	55.4
Kentucky.....	143,200	8,140,000	4,164,000	51.2	16,060	1,995,000	961,000	48.2	159,260	10,135,000	5,125,000	50.6
Louisiana.....	124,180	6,532,000	4,500,000	68.9	13,810	2,874,000	1,113,000	38.7	137,990	9,406,000	5,613,000	59.7
Maryland.....	143,520	1,927,000	1,719,000	89.2	8,220	243,000	203,000	83.5	151,740	2,170,000	1,922,000	88.6
Michigan.....	3,150	104,000	95,000	91.3	200	25,000	14,000	56.0	3,350	129,000	109,000	84.5
Minnesota.....	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Mississippi.....	22,040	1,433,000	1,025,000	71.5	3,900	1,094,000	315,000	28.8	25,940	2,527,000	1,340,000	53.0
Missouri.....	335,620	8,444,000	7,364,000	87.2	31,210	3,240,000	2,112,000	65.2	366,830	11,684,000	9,476,000	81.1
Montana.....	21,050	3,585,000	1,739,000	48.5	4,100	1,767,000	648,000	36.7	25,150	5,352,000	2,387,000	44.6
Nebraska.....	43,570	2,063,000	1,697,000	82.3	4,800	542,000	353,000	65.1	48,370	2,605,000	2,050,000	78.7
New Mexico.....	10,870	879,000	614,000	69.9	1,030	873,000	278,000	31.8	11,900	1,752,000	892,000	50.9
New York.....	314,290	13,315,000	9,552,000	71.7	30,780	1,807,000	1,289,000	71.3	345,070	15,122,000	10,841,000	71.7
North Dakota.....	4 ¹ 12,690	4 ¹ 482,000	4 ¹ 315,500	65.5	4 ¹ 1,370	4 ¹ 351,000	4 ¹ 127,500	36.3	4 ¹ 14,060	4 ¹ 833,000	4 ¹ 443,000	53.2
Ohio.....	1,060,100	57,965,000	36,503,000	63.0	96,930	11,733,000	6,764,000	57.6	1,157,030	69,698,000	43,267,000	62.1
Oklahoma.....	202,350	18,334,000	8,302,000	45.3	23,890	7,144,000	2,278,000	31.9	226,240	25,478,000	10,580,000	41.5
Pennsylvania.....	590,510	36,082,000	22,916,000	63.5	53,100	7,409,000	4,457,000	60.2	643,610	43,491,000	27,373,000	62.9
South Dakota.....	11,040	701,000	606,000	86.4	1,110	649,000	274,000	42.2	12,150	1,350,000	880,000	65.2
Tennessee.....	37,080	1,618,000	1,465,000	90.5	3,850	1,498,000	577,000	38.5	40,930	3,116,000	2,042,000	65.5
Texas.....	485,890	26,519,000	21,761,000	82.1	41,130	13,209,000	4,669,000	35.3	527,020	39,728,000	26,430,000	66.5
Utah.....	2 ¹ 21,990	2 ¹ 1,620,000	2 ¹ 1,149,500	71.0	2 ¹ 520	2 ¹ 210,000	2 ¹ 78,500	37.4	2 ¹ 22,510	2 ¹ 1,830,000	2 ¹ 1,228,000	67.1
Virginia.....	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Washington.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
West Virginia.....	149,840	15,701,000	5,851,000	37.3	17,070	4,354,000	1,486,000	34.1	166,910	20,055,000	7,337,000	36.6
Wyoming.....	14,470	2,451,000	1,134,000	46.3	1,510	1,013,000	354,000	34.9	15,980	3,464,000	1,488,000	43.0
Total, 1932.....	6,506,540	298,520,000	223,377,000	74.8	530,570	87,367,000	44,000,000	50.4	7,037,110	385,887,000	267,377,000	69.3
Total, 1931.....	6,443,210	294,406,000	208,262,000	70.7	517,450	86,491,000	41,347,000	47.8	6,960,660	380,897,000	249,609,000	65.5

¹ Includes data for mixed gas as shown on p. 106.

² Utah includes Arizona and Washington.

³ Maryland includes District of Columbia and Virginia.

⁴ North Dakota includes Minnesota.

⁵ Revised figures—caused by revising Oklahoma to following: Domestic, 207,860; commercial, 23,060; total, 230,920.

Industrial consumption of natural gas in the United States in 1932, by States and uses

State	Field (drilling, pumping, and operating gasoline recovery plants)		Manufacture of carbon black		Fuel at petroleum refineries, electric public-utility power plants, and other industrial ¹						Total industrial			
	M cubic feet (estimated)	Value at points of consumption (estimated)	M cubic feet	Value at points of consumption		M cubic feet				Value at points of consumption		M cubic feet	Value at points of consumption	
				Total	Average (cents)	Petroleum refineries	Electric public-utility power plants	Other industrial	Total	Total	Average (cents)		Total	Average (cents)
Alabama	(?)	(?)						4,942,000	4,942,000	\$878,000	17.8	4,942,000	\$878,000	17.8
Alaska								(?)	(?)	(?)	(?)	(?)	(?)	(?)
Arizona								(?)	(?)	(?)	(?)	(?)	(?)	(?)
Arkansas	7,351,000	\$571,000			1,433,000	853,000	8,730,000	11,016,000	1,418,000	12.9	18,367,000	1,989,000	10.8	
California	130,353,000	8,766,000			16,610,000	14,209,000	41,386,000	72,205,000	10,731,000	14.9	202,558,000	19,497,000	9.6	
Colorado	601,000	16,000			5,000	422,000	9,998,000	10,425,000	1,899,000	18.2	11,026,000	1,915,000	17.4	
District of Columbia								(?)	(?)	(?)	(?)	(?)	(?)	(?)
Florida							547,000	547,000	86,000	15.7	547,000	86,000	15.7	
Georgia						115,000	1,337,000	1,452,000	332,000	22.9	1,452,000	332,000	22.9	
Illinois	1,722,000	145,000			136,000		11,461,000	11,597,000	3,384,000	29.2	13,319,000	3,529,000	26.5	
Indiana	16,000	3,000				7,931,000	2,181,000	10,112,000	2,219,000	21.9	10,128,000	2,222,000	21.9	
Iowa						1,314,000	4,891,000	6,205,000	1,112,000	17.9	6,205,000	1,112,000	17.9	
Kansas	8,079,000	826,000			686,000	9,829,000	18,096,000	28,611,000	4,408,000	15.4	36,690,000	5,234,000	14.3	
Kentucky	831,000	133,000				2,732,000	2,732,000	809,000	29.6	3,563,000	942,000	26.4		
Louisiana	9,741,000	425,000	39,070,000	\$1,012,000	2.6	8,041,000	17,794,000	29,163,000	54,998,000	5,721,000	10.4	103,809,000	7,158,000	6.9
Maryland							300,000	300,000	74.0	374.0	300,000	322,000	374.0	
Michigan	148,000	21,000				264,000	427,000	691,000	132,000	19.1	839,000	153,000	18.2	
Minnesota						324,000	(?)	(?)	(?)	(?)	(?)	(?)	(?)	
Mississippi	31,000	4,000				541,000	2,663,000	3,204,000	462,000	14.4	3,235,000	466,000	14.4	
Illinois	3,000	800				18,000	1,867,000	11,738,000	13,623,000	18.3	13,626,000	2,492,000	18.3	
Missouri	1,027,000	55,000				100,000	565,000	4,056,000	4,721,000	19.4	5,745,000	972,000	16.9	
Montana							1,726,000	4,330,000	6,056,000	17.2	6,056,000	1,044,000	17.2	
Nebraska							2,264,000	355,000	2,619,000	343,000	13.1	10,128,000	571,000	5.6
New Mexico	7,509,000	228,000				1,000	80,000	1,277,000	1,358,000	51.1	1,602,000	785,000	49.0	
New York	244,000	91,000					167,000	809,000	1,300,000	20.4	1,300,000	285,000	20.4	
North Dakota	2,370,000	680,000				10,000	4,744,000	17,592,000	22,346,000	38.7	24,716,000	9,328,000	37.7	
Ohio	188,600,000	7,838,000	(?)	(?)	(?)	6,510,000	6,994,000	19,159,000	32,663,000	3,664,000	11.2	221,263,000	11,502,000	5.2
Oklahoma	4,426,000	1,376,000				1,377,000	28,000	27,613,000	29,018,000	9,202,000	31.7	33,444,000	10,578,000	31.6
Pennsylvania							62,000	1,364,000	1,426,000	17.1	1,426,000	244,000	17.1	
South Dakota							3,323,000	1,244,000	4,567,000	821,000	18.0	4,567,000	821,000	18.0
Tennessee														

Texas.....	144,943,000	8,213,000	122,215,000	1,615,000	1.3	25,564,000	31,460,000	50,734,000	107,758,000	14,068,000	13.1	374,916,000	23,896,000	6.4
Utah.....	¹ 2,000	² 200				² 369,000		² 5,794,000	² 6,163,000	² 977,800	² 15.9	² 6,165,000	² 978,000	² 15.9
Virginia.....								⁽³⁾	⁽³⁾	⁽³⁾	⁽³⁾	⁽³⁾	⁽³⁾	⁽³⁾
West Virginia.....	12,915,000	2,921,000				602,000	77,000	12,632,000	13,311,000	3,691,000	27.7	26,226,000	6,612,000	25.2
Wyoming.....	8,466,000	272,000	⁽⁵⁾	⁽⁵⁾	⁽⁵⁾	6,005,000	266,000	⁵ 5,528,000	⁵ 11,819,000	⁵ 651,000	5.5	20,285,000	923,000	4.6
Miscellaneous.....			6,952,000	266,000	3.8									
Total, 1932.....	529,378,000	32,585,000	168,237,900	2,893,000	1.7	67,467,000	107,239,000	296,127,000	470,833,000	81,268,000	17.3	1,168,448,000	116,746,000	10.0
Total, 1931.....	570,365,000	40,469,000	195,396,000	4,048,000	2.1	75,548,000	138,343,000	322,700,000	536,591,000	98,030,000	18.3	1,303,352,000	142,547,000	10.9

¹ Gas used at portland cement plants included under "Other industrial."

² Utah includes Alaska and Arizona

³ Maryland includes District of Columbia and Virginia.

⁴ North Dakota includes Minnesota.

⁵ Gas used in manufacture of carbon black included under "Miscellaneous" for United States total and under "Other industrial" for State total to avoid disclosing figures of individual operators.

INTERSTATE TRANSPORTATION

Interstate transportation of natural gas in 1932

State from which gas was transported	State through which gas was transported	State to which gas was transported	M cubic feet		
Colorado.....	Wyoming.....	Utah.....	1,567,000		
		Wyoming.....	215,000		
Illinois.....		Indiana.....	1,782,000		
			12,000		
Indiana.....		Illinois.....	6,000		
		Kentucky.....	151,000		
		Ohio.....	2,000		
			159,000		
Kansas.....	Missouri.....	Colorado.....	294,000		
		Illinois.....	719,000		
		Indiana.....	799,000		
		Iowa.....	4,641,000		
		Minnesota.....	747,000		
		Missouri.....	3,771,000		
		Nebraska.....	5,340,000		
		Oklaoma.....	416,000		
Nebraska.....	South Dakota.....	199,000			
			16,926,000		
Kentucky.....	West Virginia.....	District of Columbia.....	1,468,000		
			Illinois.....	49,000	
			Indiana.....	538,000	
			Maryland.....	75,000	
			do.....	88,000	
			District of Columbia.....		
			West Virginia.....	Ohio.....	2,933,000
			do.....	do.....	20,000
			West Virginia.....	Pennsylvania.....	7,941,000
			do.....		
			Maryland.....	Virginia.....	55,000
			District of Columbia.....	do.....	80,000
West Virginia.....	West Virginia.....	6,417,000			
			19,664,000		
Louisiana.....	Mississippi.....	Alabama.....	4,888,000		
		Arkansas.....	14,566,000		
		Georgia.....	3,552,000		
		Illinois.....	8,330,000		
		Mississippi.....	1,998,000		
		Arkansas.....	Missouri.....	7,673,000	
		do.....	Tennessee.....	7,661,000	
		Mississippi.....	Texas.....	43,641,000	
			92,309,000		
Mississippi.....	Alabama.....	Alabama.....	939,000		
		Florida.....	618,000		
		Georgia.....	395,000		
		Louisiana.....	2,932,000		
			4,884,000		
Missouri.....	Illinois.....	Illinois.....	223,000		
		Indiana.....	248,000		
		Kansas.....	24,000		
			495,000		
Montana.....		North Dakota.....	992,000		
		South Dakota.....	2,445,000		
			3,437,000		

Interstate transportation of natural gas in 1932—Continued

State from which gas was transported	State through which gas was transported	State to which gas was transported	M cubic feet
New Mexico.....	Texas.....	Arizona.....	2,274,000
	New Mexico.....	Colorado.....	102,000
		Texas.....	3,833,000
			<u>6,209,000</u>
New York.....		Canada.....	46,000
		Pennsylvania.....	2,000
			<u>48,000</u>
Ohio.....		Indiana.....	396,000
		Kentucky.....	11,000
		West Virginia.....	256,000
		<u>663,000</u>	
Oklahoma.....		Arkansas.....	529,000
		Kansas.....	10,017,000
	Kansas.....	Missouri.....	3,607,000
	do.....	Nebraska.....	39,000
		Texas.....	1,873,000
			<u>16,065,000</u>
Pennsylvania.....	New York.....	Canada.....	37,000
	Maryland.....	District of Columbia.....	220,000
	District of Columbia.....	Maryland.....	13,000
		do.....	70,000
		New York.....	7,959,000
		Ohio.....	600,000
	West Virginia.....	do.....	509,000
	Maryland.....	Virginia.....	8,000
	District of Columbia.....	West Virginia.....	569,000
			<u>9,985,000</u>
Texas.....	New Mexico.....	Colorado.....	15,227,000
	Oklahoma.....		
	Kansas.....	Illinois.....	17,857,000
	Nebraska.....	do.....	491,000
	Iowa.....		
	Oklahoma.....	Indiana.....	7,924,000
	Kansas.....		
	Missouri.....	do.....	544,000
	Oklahoma.....		
	Kansas.....	Iowa.....	2,892,000
	Nebraska.....	Kansas.....	23,160,000
	Oklahoma.....	Louisiana.....	1,031,000
		Mexico.....	1,610,000
	Oklahoma.....	Minnesota.....	394,000
	Kansas.....		
	Nebraska.....	Missouri.....	9,822,000
	Iowa.....		
	Oklahoma.....	Nebraska.....	2,677,000
	Kansas.....	New Mexico.....	485,000
		Oklahoma.....	6,903,000
	Oklahoma.....		
	Kansas.....	South Dakota.....	122,000
	Nebraska.....		
	Iowa.....	Wyoming.....	396,000
	New Mexico.....		
	Colorado.....		
			<u>91,535,000</u>

Interstate transportation of natural gas in 1932—Continued

State from which gas was transported	State through which gas was transported	State to which gas was transported	M cubic feet
West Virginia.....	Kentucky.....	Kentucky.....	4,195,000
		Maryland.....	393,000
		Ohio.....	36,947,000
		do.....	2,600,000
		Pennsylvania.....	17,366,000
			61,501,000
Wyoming.....		Colorado.....	21,000
		Montana.....	1,204,000
		Nebraska.....	605,000
		Utah.....	3,970,000
			5,800,000
			331,474,000

NATURAL-GAS WELLS*Approximate number of gas wells operated in the United States, 1931 and 1932*

State	1931	1932	State	1931	1932
Arkansas.....	178	184	Montana.....	208	238
California.....	55	30	New York.....	2,174	2,191
Colorado, New Mexico, Utah, and Washington.....	66	60	Ohio.....	6,754	6,749
Illinois.....	87	95	Oklahoma.....	3,091	2,803
Indiana.....	1,114	1,026	Pennsylvania.....	20,034	19,711
Kansas.....	4,005	3,290	Texas.....	1,643	1,590
Kentucky and Tennessee.....	1,728	1,839	West Virginia.....	12,858	12,699
Louisiana and Mississippi.....	1,309	1,314	Wyoming.....	121	87
Michigan.....	33	30		55,756	54,156
Missouri and South Dakota.....	298	220			

Gas wells drilled in the United States in 1932, by States and by counties or districts¹

State and county or district	Number of gas wells	State and county or district	Number of gas wells	State and county or district	Number of gas wells
Arkansas:		Louisiana:		Ohio—Continued.	
Franklin.....	1	Gulf coast:		Central and eastern—	
	1	Lockport.....	1	Continued.	
Total, 1931.....	5			Morgan.....	1
California.....	(²)	Total, 1931.....	3	Muskingum.....	15
Colorado:				Perry.....	2
Las Animas.....	1	Northern:		Stark.....	76
Moffat.....	1	Bossier.....	2	Summit.....	7
Rio Blanco.....	1	Caddo.....	10	Tuscarawas.....	3
	3	Claiborne.....	3	Vinton.....	1
Total, 1931.....	5	DeSoto.....	1	Washington.....	6
Illinois:		Morehouse.....	4		216
Bond.....	3	Natchitoches.....	1	Total, 1931.....	385
Clark.....	1	Ouachita.....	3		
Randolph.....	1	Red River.....	1	Northwestern:	
Wabash.....	1	Richland.....	4	Darke.....	1
	6	Sabine.....	1	Hardin.....	2
Total, 1931.....	1	Union.....	8	Logan.....	1
Indiana:			38	Mercer.....	1
Daviess.....	2	Total, 1931.....	76	Putnam.....	1
Gibson.....	14			Seneca.....	34
Hancock.....	7	Total Louisiana, 1932..	39	Van Wert.....	1
Henry.....	1	1931.....	79	Wood.....	1
Huntington.....	1			Wyandot.....	9
Jay.....	1	Michigan:			51
Johnson.....	2	Allegan.....	2	Total, 1931.....	90
Knox.....	1	Clare.....	2		
Monroe.....	1	Isabella.....	4	Total Ohio, 1932.....	267
Pike.....	12	Lenawee.....	1	1931.....	475
Rush.....	2	Macomb.....	1		
Shelby.....	1	Muskegon.....	1	Oklahoma:	
Sullivan.....	5		11	Carter.....	2
Switzerland.....	4	Total, 1931.....	30	Cotton.....	1
Vanderburg.....	1			Creek.....	35
	55	Mississippi:		Grady.....	1
Total, 1931.....	47	Hinds.....	14	Hughes.....	5
Kansas:		Rankin.....	24	Kay.....	1
Butler.....	2		38	Latimer.....	1
Chase.....	1	Total, 1931.....	36	Lincoln.....	1
Chautauqua.....	1			Marshall.....	3
Cowley.....	3	Montana:		Muskogee.....	10
Ellsworth.....	1	Glacier.....	3	Okfuskee.....	6
McPherson.....	6	Toole.....	3	Oklahoma.....	3
Reno.....	1		6	Okmulgee.....	12
Rice.....	1	Total, 1931.....	36	Osage.....	1
Rush.....	2			Pawnee.....	2
Sedgwick.....	1	New Mexico:		Pittsburg.....	6
Woodson.....	1	Eddy.....	3	Stephens.....	8
Miscellaneous.....	1	Torrance.....	1	Tulsa.....	4
	21		4	Wagoner.....	4
Total, 1931.....	112	Total, 1931.....	11		106
Kentucky:		Ohio:		Total, 1931.....	186
Boyle.....	1	Central and eastern:		Pennsylvania and New	
Christian.....	7	Ashland.....	4	York:	
Cumberland.....	4	Athens.....	13	Allegheny.....	2
Daviess.....	1	Belmont.....	29	Butler-Armstrong.....	5
Grayson.....	2	Columbiana.....	1	Middle Field.....	2
Hancock.....	2	Coshocton.....	5	New York and Penn-	
Hart.....	14	Cuyahoga.....	1	sylvanias gas.....	33
Henderson.....	2	Fairfield.....	8	Southwest Pennsylv-	
Hopkins.....	2	Guernsey.....	7	nia.....	20
Knox.....	5	Hocking.....	1	Venango-Clarion.....	14
McLean.....	2	Holmes.....	4		76
Muhlenberg.....	2	Lawrence.....	2	Total, 1931.....	210
Nelson.....	1	Licking.....	9	Tennessee, 1932.....	
Ohio.....	3	Lorain.....	15	1931.....	4
Pike.....	2	Medina.....	5		
Webster.....	8	Monroe.....	1		
	58				
Total, 1931.....	116				

¹ Oil and Gas Journal.

² California not reported.

Gas wells drilled in the United States in 1932, by States and by counties or districts—Continued

State and county or district	Number of gas wells	State and county or district	Number of gas wells	State and county or district	Number of gas wells
Texas:		Texas—Continued.		West Virginia:	
Gulf coast:		Rest of State—Contd.		Boone.....	20
Barbers Hill.....	1	Northern, central,		Cabell.....	24
Comroe.....	3	eastern, and		Calhoun.....	24
Humble.....	1	southwestern—		Doddridge.....	1
King.....	2	Continued.		Gilmer.....	6
Markham.....	1	Sarnosa.....	1	Kanawha.....	5
Mykawa.....	1	Shackelford.....	10	Lincoln.....	21
Retugio.....	3	Shelby.....	1	Logan.....	4
Saxet.....	5	Slick.....	2	Marion.....	5
White Point.....	2	Throckmorton.....	1	Marshall.....	1
Miscellaneous.....	9	Tuleta.....	1	Mason.....	1
	28	Van Zandt.....	3	Mingo.....	2
Total, 1931.....	22	Young.....	1	Monongalia.....	3
		Miscellaneous.....	15	Nicholas.....	1
Rest of State:			108	Pleasants.....	1
Northern, central,		Total, 1931.....	142	Putnam.....	5
eastern, and				Ritchie.....	7
southwestern:		Panhandle:		Roane.....	17
Alta Mesa.....	1	Carson.....	12	Tyler.....	1
Archer.....	1	Gray.....	7	Wayne.....	9
Aviator.....	2	Hutchinson.....	2	Wetzel.....	4
Brown.....	4	Moore.....	5	Wood.....	1
Callahan.....	9	Potter.....	1		
Cole.....	1		27		163
Coleman.....	2	Total, 1931.....	77	Total, 1931.....	379
Eastland.....	5				
Eckert.....	2	West Texas:			
Erath.....	1	Crockett.....	1		
Escobas.....	4	Ector.....	1		
Government wells.	3	Ward.....	2		
Harrison.....	1		4	Wyoming:	
Laurel.....	1	Total, 1931.....	3	Carbon.....	4
Los Olmos.....	2			Natrona.....	1
Mirando.....	3	Total "Rest of		Niobrara.....	1
Palo Pinto.....	17	State", 1932.....	139		
Panola.....	5	1931.....	222	Total, 1931.....	9
Parker.....	1				
Pettus.....	2	Total Texas, 1932.....	167	United States, 1932.....	3 1, 027
Rusk.....	6	1931.....	244	1931.....	3 1, 985

¹ Exclusive of California.

SUMMARY OF STATISTICS FOR NATURAL GASOLINE AND CARBON BLACK

Salient statistics for natural gasoline in the United States, 1920, 1925, and 1930-32

	1920	1925	1930	1931	1932
Number of plants operating.....	1,154	1,081	1,035	937	830
Production:					
By States:					
California.....millions of gallons..	48	303	830	680	552
Oklahoma.....do.....	179	391	591	455	379
Texas.....do.....	33	214	491	427	371
Louisiana.....do.....	11	43	74	58	46
West Virginia.....do.....	59	58	63	53	44
Other States.....do.....	55	118	161	159	132
	385	1,127	2,210	1,832	1,524
By processes:					
Compression process.....do.....	281	238	250	212	182
Absorption and combination processes.....do.....	104	882	1,942	1,609	1,333
Charcoal.....do.....		7	18	11	9
	385	1,127	2,210	1,832	1,524
Stocks at natural-gasoline plants Dec. 31.....do.....	(¹)	15	24	27	19
Value:					
Total (at plants).....millions of dollars..	72	120	128	64	49
Average per gallon (at plant).....cents..	18.7	10.7	5.8	3.5	3.2
Average spot price, Oklahoma natural gasoline cents..	² 21.3	² 12.0	² 5.4	² 3.2	² 2.3
Natural gas treated.....millions of cubic feet..	496,431	1,040,390	2,088,778	1,790,119	1,499,756
Average yield per thousand cubic feet...gallons..	0.78	1.08	1.06	1.02	

¹ Figures not available.

² Grade A.

³ Grade 26-70.

116 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Salient statistics for carbon black made from natural gas in the United States, 1928-32

	1928	1929	1930	1931	1932
Number of producers reporting.....	31	35	33	26	24
Number of plants.....	65	71	69	58	50
Quantity produced:					
By States:					
Kentucky.....pounds.....	484,000				
Louisiana.....do.....	136,320,000	127,345,000	96,729,000	57,485,000	42,260,000
Texas:					
Breckenridge district.....do.....	35,901,000	29,079,000	16,905,000	13,332,000	123,071,000
Panhandle district.....do.....	64,927,000	199,104,000	254,844,000	197,546,000	177,369,000
Total, Texas.....do.....	100,828,000	228,183,000	271,749,000	210,878,000	200,440,000
West Virginia.....do.....	697,000	578,000	(2)		
Other States.....do.....	10,461,000	10,336,000	11,464,000	12,544,000	(1)
Total, United States.....do.....	248,790,000	366,442,000	379,942,000	280,907,000	242,700,000
By processes:					
Channel process.....do.....	220,532,000	327,552,000	350,254,000	255,322,000	224,536,000
Other processes ².....do.....	28,258,000	38,890,000	29,688,000	25,585,000	18,164,000
Stocks held by producers Dec. 31.....do.....	50,240,000	132,203,000	259,245,000	280,010,000	257,998,000
Losses.....do.....	802,000	673,000	1,361,000	1,716,000	4,814,000
Quantity sold:					
Domestic:					
To rubber companies.....do.....	140,938,000	138,474,000	128,572,000	134,315,000	130,380,000
To ink companies.....do.....	27,223,000	27,350,000	19,220,000	15,184,000	18,341,000
To paint companies.....do.....	20,040,000	17,257,000	11,922,000	6,760,000	7,636,000
For miscellaneous purposes.....do.....	14,475,000	8,896,000	7,565,000	5,453,000	5,126,000
Total.....do.....	202,676,000	191,977,000	167,279,000	161,712,000	161,483,000
Export.....do.....	77,903,000	91,829,000	84,260,000	96,714,000	100,072,000
Total.....do.....	280,579,000	283,806,000	251,539,000	258,426,000	261,555,000
Value (at plants) of carbon black produced:					
Total.....dollars.....	13,782,000	18,720,000	14,852,000	8,621,000	6,664,000
Average per pound.....cents.....	5.54	5.11	3.91	3.07	2.75
Estimated quantity of natural gas used.....M cubic feet.....	175,137,000	261,107,000	266,625,000	195,396,000	168,237,000
Average yield per M cubic feet.....pounds.....	1.42	1.40	1.43	1.44	1.44

¹ Oklahoma and Wyoming included with Breckenridge district, Texas.

² Included under "Other States."

³ 1928-30 and 1932: Disk, Lewis, roller, "special," and thermatomic; 1931: Disk, roller, "special," and thermatomic.

⁴ For comparison with 1932.

GOLD, SILVER, COPPER, LEAD, AND ZINC IN IDAHO

(DETAILED STATISTICS—MINE REPORT)

By C. N. GERRY AND T. H. MILLER

SUMMARY

The value of the mine production of gold, silver, copper, lead, and zinc in Idaho decreased from \$11,418,013 in 1931 to \$7,877,604 in 1932 and was less than in any year since detailed records were started in 1903. There was a decided increase in gold production, which was larger than in any year since 1916, but there were decreases in output of silver, copper, lead, and zinc. Since 1863 Idaho's output of the five metals has been as follows: Gold, \$138,858,969; silver, 340,385,909 fine ounces; copper, 159,660,970 pounds; lead, 9,410,781,544 pounds; and zinc, 903,968,097 pounds. The total value has amounted to \$979,297,650.

The value of metal production herein reported has been calculated at the figures given in the table that follows. Gold is figured at the mint value for fine gold; that is, \$20.671835 an ounce. The silver price is the average New York price for bar silver. The copper, lead, and zinc prices are weighted averages, for each year, of all grades of primary metal sold by producers.

Prices of silver, copper, lead, and zinc, 1928-32

Year	Silver	Copper	Lead	Zinc	Year	Silver	Copper	Lead	Zinc
	<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>		<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>
1928-----	\$0.585	\$0.144	\$0.058	\$0.061	1931-----	\$0.290	\$0.091	\$0.037	\$0.038
1929-----	.533	.176	.063	.066	1932-----	.282	.063	.030	.030
1930-----	.385	.130	.050	.048					

Mine production of gold, silver, copper, lead, and zinc in Idaho, 1928-32, in terms of recovered metals

Year	Mines producing		Ore, old tailings, etc. (short tons)	Gold		Silver	
	Lode	Placer		Fine ounces	Value	Fine ounces	Value
1928-----	151	56	2,054,329	20,980.38	\$433,703	8,998,330	\$5,264,023
1929-----	147	51	2,174,125	20,247.11	418,545	9,414,403	5,017,877
1930-----	131	61	1,944,900	21,445.07	443,309	9,420,639	3,626,946
1931-----	136	100	1,299,927	18,361.36	379,563	7,220,923	2,094,068
1932-----	178	280	1,032,853	46,885.39	969,207	6,716,968	1,894,185

Mine production of gold, silver, copper, lead, and zinc in Idaho, 1928-32, in terms of recovered metals—Continued

Year	Copper		Lead		Zinc		Total value
	Pounds	Value	Pounds	Value	Pounds	Value	
1928.....	2, 072, 165	\$298, 392	290, 645, 905	\$16, 857, 462	62, 526, 648	\$3, 814, 126	\$26, 667, 706
1929.....	5, 131, 438	903, 133	297, 389, 488	18, 735, 538	91, 350, 807	6, 029, 153	31, 104, 246
1930.....	3, 111, 555	404, 502	268, 115, 963	13, 405, 798	75, 298, 172	3, 614, 312	21, 494, 867
1931.....	1, 144, 915	104, 187	198, 729, 228	7, 352, 981	39, 137, 212	1, 487, 214	11, 418, 013
1932.....	1, 143, 381	72, 033	144, 235, 067	4, 327, 052	20, 504, 234	615, 127	7, 877, 604

Gold and silver produced at placer mines in Idaho, 1928-32

Year	Gold		Silver		Year	Gold		Silver	
	Fine ounces	Value	Fine ounces	Value		Fine ounces	Value	Fine ounces	Value
1928.....	8, 191. 63	\$169, 336	2, 538	\$1, 485	1931.....	5, 213. 52	\$107, 773	1, 848	\$536
1929.....	4, 129. 92	85, 373	1, 419	756	1932.....	12, 439. 68	257, 151	3, 826	1, 079
1930.....	3, 987. 45	82, 428	1, 355	522					

The large increase in production of gold in Idaho in 1932 was caused by increased activity at both lode and placer mines; the former accounted for about three fourths of the gain. The Boise Rochester property of the St. Joseph Lead Co. at Atlanta, Elmore County, and the Meadow Creek property of the Yellow Pine Co. at Stibnite, Valley County, both new operations, accounted for nearly all the increased output of gold from lode mines. The Boise Rochester property was by far the largest producer of gold in Idaho in 1932. The value of the silver production decreased about 10 percent; large decreases in silver from lead ore and lead-zinc ore were partly offset by an increase from copper-lead ore, and the Sunshine property near Kellogg was again the largest producer. The value of the copper production decreased 31 percent; most of the copper was recovered from copper-lead ore. The value of the lead output decreased 41 percent due to curtailment in output of lead ore and lead-zinc ore; the Bunker Hill & Sullivan property was again the largest producer of lead followed by the Hecla and Morning mines. The value of the zinc production declined nearly 59 percent; the Morning mine was again the leading producer of zinc.

Mine production of gold, silver, copper, lead, and zinc in Idaho in 1932, by counties, in terms of recovered metals

County	Gold					Silver (lode and placer)	
	Lode		Placer		Total value	Fine ounces	Value
	Fine ounces	Value	Fine ounces	Value			
Ada	3.19	\$66	93.80	\$1,939	\$2,005	22	\$6
Adams	5.90	122			122	4	1
Benewah			40.83	844	844	7	2
Bingham			7.26	150	150		
Blaine	100.57	2,079			2,079	1,876	529
Boise	1,270.91	26,272	1,364.95	28,216	54,488	8,510	2,400
Bonner	2.90	60			60	53,971	15,220
Bonneville			62.60	1,294	1,294		
Boundary			2.18	45	45		
Butte						4	1
Camas	32.12	664	2.13	44	708	776	219
Canyon			6.58	136	136		
Clearwater	24.82	513	345.25	7,137	7,650	135	38
Custer	40.83	844	144.88	2,995	3,839	128	36
Elmore	19,338.39	399,760	301.86	6,240	406,000	59,493	16,777
Gem	434.79	8,988	20.85	431	9,419	8,113	2,288
Gooding			44.75	925	925		
Idaho	4,556.83	94,198	8,576.84	177,299	271,497	10,135	2,858
Jefferson			10.93	226	226		
Jerome			34.54	714	714		
Latah			24.19	500	500		
Lemhi	957.78	19,799	364.84	7,542	27,341	968	273
Lewis			16.45	340	340		
Nez Perce			33.67	696	696	7	2
Owyhee	166.07	3,433	467.64	9,667	13,100	5,018	1,415
Power			66.32	1,371	1,371	7	2
Shoshone	219.82	4,544	174.63	3,610	8,154	6,547,674	1,846,444
Twin Falls			200.51	4,145	4,145	14	4
Valley	7,290.79	150,714	31.20	645	151,359	20,106	5,670
Total, 1931	34,445.71 13,147.84	712,056 271,790	12,439.68 5,213.52	257,151 107,773	969,207 379,563	6,716,968 7,220,923	1,894,185 2,094,068

County	Copper		Lead		Zinc		Total value
	Pounds	Value	Pounds	Value	Pounds	Value	
Ada							\$2,011
Adams							723
Benewah							846
Bingham							150
Blaine	270	\$17	2,934	\$88	1,967	\$59	2,772
Boise	238	15	7,433	223			57,126
Bonner	1,588	100	1,152,766	34,583			49,963
Bonneville							1,294
Boundary							45
Butte			2,300	69			70
Camas	32	2	200	6			935
Canyon							136
Clearwater	238	15	167	5			7,708
Custer			500	15			3,890
Elmore			67	2			422,779
Gem	1,000	63	25,067	752			12,522
Gooding							925
Idaho	2,333	147	8,500	255			274,757
Jefferson							226
Jerome							714
Latah							500
Lemhi	6,730	424	20,100	603			28,641
Lewis							340
Nez Perce							698
Owyhee			1,100	33			14,548
Power							1,373
Shoshone	1,129,952	71,187	143,010,500	4,290,315	20,502,267	615,068	6,831,168
Twin Falls							4,149
Valley	1,000	63	3,433	103			157,195
Total, 1931	1,143,381 1,144,915	72,033 104,187	144,235,067 198,729,228	4,327,052 7,352,981	20,504,234 39,137,212	615,127 1,487,214	7,877,604 11,418,013

Ore, old tailings, etc., sold or treated and lode mines producing in Idaho, 1931 and 1932, by counties

County	Ore, old tailings, etc.		Lode mines producing		County	Ore, old tailings, etc.		Lode mines producing	
	1931	1932	1931	1932		1931	1932	1931	1932
	<i>Short tons</i>	<i>Short tons</i>				<i>Short tons</i>	<i>Short tons</i>		
Ada.....	40	5	1	1	Custer.....	15	20	3	10
Adams.....	23	65	1	1	Elmore.....	176	51,778	8	25
Bear Lake.....	3		1		Gem.....		1,701		2
Blaine.....	410	448	6	5	Idaho.....	2,435	8,104	23	33
Boise.....	21,272	3,491	17	16	Lemhi.....	2,496	6,166	17	25
Bonner.....	21,516	12,065	3	6	Owyhee.....	252	221	10	16
Boundary.....	89		1		Shoshone.....	1,239,592	912,664	30	21
Butte.....	5	2	2	1	Valley.....	11,422	35,864	5	6
Camas.....	129	47	4	5	Washington.....	3		1	
Clark.....	25		1						
Clearwater.....	24	212	2	5					
						1,299,927	1,032,853	136	178

Gold and silver produced at placer mines in Idaho in 1932, by counties

County	Mines			Gold	Silver (fine ounces)	Total value
	Drift	Dredge	Hydraulic and sluicing			
Ada.....	1		5	\$1,939	18	\$1,944
Benewah.....			3	844	7	846
Bingham.....			1	150		150
Boise.....	3	1	38	28,216	344	28,313
Bonneville.....			4	1,294		1,294
Boundary.....			2	45		45
Camas.....			1	44		44
Canyon.....			2	136		136
Clearwater.....		1	21	7,137	64	7,155
Custer.....	2		9	2,995	46	3,008
Elmore.....			23	6,240	78	6,262
Gem.....			5	431		431
Gooding.....			3	925		925
Idaho.....	1	2	49	177,299	2,915	178,121
Jefferson.....			1	226		226
Jerome.....			3	714		714
Latah.....			7	500		500
Lemhi.....	1		29	7,542	39	7,553
Lewis.....			3	340		340
Nez Perce.....			5	696		696
Owyhee.....		1	13	9,667	241	9,735
Power.....			4	1,371	7	1,373
Shoshone.....	3		12	3,610	32	3,619
Twin Falls.....			14	4,145	14	4,149
Valley.....			7	645		649
Total, 1931.....	11	5	264	257,151	3,826	258,230
	3	4	153	107,773	1,848	108,309

MINING INDUSTRY

Features of the mining industry in Idaho in 1932 were reviewed in a statement issued in January 1933, and details for the year were given in the Minerals Yearbook of the Bureau of Mines published in August 1933.

ORE CLASSIFICATION

Ore, old tailings, etc., sold or treated in Idaho in 1932, with content in terms of recovered metals

Source	Mines producing	Ore, old tailings, etc.	Gold	Silver	Copper	Lead	Zinc
Dry gold ore.....	142	Short tons 1 107,946	Fine ounces 34,190.69	Fine ounces 103,683	Pounds 8,291	Pounds 46,430	Pounds
Dry gold and silver ore.....	3	2 135	9.62	628	-----	-----	-----
Dry silver ore.....	4	41	14.51	3,946	32	1,300	-----
Copper ore.....	2	12	10.53	34	3,367	-----	-----
Lead ore.....	23	585,841	112.95	2,648,034	373,842	115,936,875	5,182,074
Copper-lead ore.....	2	165,490	-----	3,339,227	641,245	630,696	-----
Lead-zinc ore.....	8	173,388	107.41	617,590	116,604	27,619,766	15,322,160
Total, lode mines.....	3 178	1,032,853	34,445.71	6,713,142	1,143,381	144,235,067	20,504,234
Total, placers.....	280	-----	12,439.68	3,826	-----	-----	-----
Total, 1931.....	458	1,032,853	46,885.39	6,716,968	1,143,381	144,235,067	20,504,234
Total, 1932.....	296	1,299,927	18,361.36	7,220,923	1,144,915	198,729,228	39,137,212

¹ Includes 19 tons of old mill cleanings and 507 tons of old tailings sold to a smelter, 5,002 tons of old tailings reconcentrated, and 135 tons of old tailings treated by cyanidation.

² Includes 1 ton of old mill cleanings sold to a smelter and 90 tons of old tailings treated by cyanidation.

³ A mine producing more than one class of ore is counted but once in arriving at total for all classes.

Value of metals from ore, old tailings, etc., sold or treated in Idaho in 1932, by classes of ore

Class	Ore, old tailings, etc. (short tons)	Gold	Silver	Copper	Lead	Zinc	Total value
Dry gold ore.....	107,946	\$706,784	\$29,289	\$523	\$1,393	-----	\$737,939
Dry gold and silver ore.....	135	199	177	-----	-----	-----	376
Dry silver ore.....	41	300	1,113	2	39	-----	1,454
Copper ore.....	12	218	10	212	-----	-----	440
Lead ore.....	585,841	2,335	746,745	23,552	3,478,106	\$155,462	4,406,200
Copper-lead ore.....	165,490	-----	941,662	40,398	18,921	-----	1,000,981
Lead-zinc ore.....	173,388	2,220	174,160	7,346	828,593	459,665	1,471,984
Total, 1931.....	1,032,853	712,056	1,893,106	72,033	4,327,052	615,127	7,619,374
Total, 1932.....	1,299,927	271,790	2,093,532	104,187	7,352,981	1,487,214	11,309,704

The production of siliceous ore, old tailings, etc., in Idaho in 1932 was more than four times that in 1931; most of the output was gold ore from the Boise Rochester and Meadow Creek properties. Only two small shipments of copper ore were made in 1932. Although there was a decrease of about 15 percent in the quantity of copper-lead ore mined in 1932, there was an increase in the quantity of silver and copper recovered from copper-lead concentrates. The Sunshine mine was the largest producer of copper-lead ore. The output of lead ore decreased about 16 percent and that of lead-zinc ore 54 percent, as a result of curtailment at the Morning, Hecla, Page, and other mines in the Coeur d'Alene region.

Ore, old tailings, etc., sold or treated in Idaho in 1932, by counties, with content in terms of recovered metals

DRY GOLD ORE

County	Ore, old tailings, etc.	Gold	Silver	Copper	Lead	Zinc
	Short tons	Fine ounces	Fine ounces	Pounds	Pounds	Pounds
Ada.....	5	3.19	4			
Adams.....	65	5.90	4			
Blaine.....	407	96.75	207	270	435	
Boise.....	1 3, 491	1, 270.91	8, 166	238	7, 433	
Camas.....	32	30.23	17			
Clearwater.....	212	24.82	71	238	167	
Custer.....	17	33.82	64			
Elmore.....	51, 778	19, 338.39	59, 415		67	
Gem.....	1, 701	434.79	8, 113	1, 000	25, 067	
Idaho.....	4 8, 104	4, 556.83	7, 220	2, 333	8, 500	
Lemhi.....	6, 116	935.70	710	3, 302	1, 534	
Owyhee.....	6	143.83	962			
Shoshone.....	7 178	34.20	22		210	
Valley.....	35, 780	7, 281.33	18, 708	910	3, 017	
Total, 1931.....	107, 946 24, 210	34, 190.69 11, 060.20	103, 683 13, 575	8, 291 2, 503	46, 430 5, 718	

DRY GOLD AND SILVER ORE

Owyhee.....	135	9.62	628			
Total, 1931.....	135 152	9.62 18.02	628 905			

DRY SILVER ORE

Camas.....	15	1.89	759	32	200	
Owyhee.....	26	12.62	3, 187		1, 100	
Total, 1931.....	41 9	14.51 4.65	3, 946 2, 379	32	1, 300 708	

COPPER ORE

Lemhi.....	12	10.53	34	3, 367		
Total, 1931.....	12 548	10.53 439.07	34 1, 421	3, 367 41, 583		

LEAD ORE

Blaine.....	3	0.82	116		865	
Bonner.....	12, 065	2.90	53, 971	1, 588	1, 152, 766	
Butte.....	2		4		2, 300	
Custer.....	3	7.01	18		500	
Lemhi.....	38	11.55	185	61	18, 566	
Shoshone.....	573, 646	81.21	2, 592, 356	372, 103	114, 761, 462	5, 182, 074
Valley.....	84	9.46	1, 384	90	416	
Total, 1931.....	585, 841 701, 230	112.95 749.47	2, 648, 084 3, 273, 934	373, 842 409, 686	115, 936, 875 140, 406, 110	5, 182, 074 4, 991, 984

¹ Includes 2 tons of old mill cleanings sold to a smelter.

² Includes 1 ton of old mill cleanings sold to a smelter.

³ Includes 2 tons of old tailings reconcentrated.

⁴ Includes 1 ton of old mill cleanings sold to a smelter.

⁵ Includes 4 tons of old mill cleanings and 507 tons of old tailings sold to a smelter and 5,000 tons of old tailings reconcentrated.

⁶ Includes 3 tons of old mill cleanings sold to a smelter.

⁷ Includes 8 tons of old mill cleanings sold to a smelter and 135 tons of old tailings treated by cyanidation.

⁸ Includes 1 ton of old mill cleanings sold to a smelter and 90 tons of old tailings treated by cyanidation.

Ore, old tailings, etc., sold or treated in Idaho in 1932, by counties, with content in terms of recovered metals—Continued

COPPER-LEAD ORE

County	Ore, old tailings, etc.	Gold	Silver	Copper	Lead	Zinc
Shoshone.....	<i>Short tons</i> 165, 490	<i>Fine ounces</i> -----	<i>Fine ounces</i> 3, 339, 227	<i>Pounds</i> 641, 245	<i>Pounds</i> 630, 696	<i>Pounds</i> -----
Total, 1931.....	165, 490 195, 643	2. 82	3, 339, 227 2, 671, 907	641, 245 437, 642	630, 696 1, 426, 943	-----

LEAD-ZINC ORE

Blaine.....	38	3. 00	1, 553	-----	1, 634	1, 967
Shoshone.....	173, 350	104. 41	616, 037	116, 604	27, 618, 132	15, 320, 193
Total, 1931.....	173, 388 378, 135	107. 41 873. 61	617, 590 1, 254, 954	116, 604 253, 496	27, 619, 766 56, 889, 749	15, 322, 160 34, 145, 228

Zinc products (as marketed from Idaho mines and mills) sold to smelters or electrolytic plants in 1932

Classification	County	Quantity (dry weight)	Gross zinc	Average assay of concentrates	Recovered zinc
Zinc concentrates.....	Blaine and Shoshone.....	<i>Short tons</i> 19, 254	<i>Pounds</i> 21, 282, 343	<i>Percent</i> 55. 27	<i>Pounds</i> 19, 304, 185
Lead-zinc concentrates.....	Shoshone.....	1, 446	1, 318, 107	45. 58	1, 200, 069
Total, 1931.....	-----	20, 700 33, 805	22, 600, 450 42, 624, 976	54. 59 54. 92	20, 504, 234 39, 137, 212

METALLURGIC INDUSTRY

Of the total ore, old tailings, etc., produced in 1932, 922,698 tons (more than 89 percent) were treated at concentration plants; 96,659 tons (more than 9 percent) were treated at gold and silver mills; and the remainder, 13,496 tons, was shipped to smelters. The ore going to concentrating mills was treated in 29 plants of which 19 used straight flotation, 2 combined gravity and flotation, and 8 straight gravity concentration. In addition, 53 gold and silver mills were active—37 amalgamation plants, 5 amalgamation and flotation plants, 5 amalgamation and gravity concentration plants, 1 cyanidation and flotation plant, and 5 straight cyanidation plants. The total of 82 mills active in 1932 compares with 48 in 1931; the increase resulted from renewed activity at gold and silver mills.

Mine production of metals from gold and silver mills in Idaho in 1932, by counties, in terms of recovered metals

County	Ore and old tailings treated (dry weight)		Recovered in bullion			
			Amalgamation		Cyanidation	
	Ore	Old tailings	Gold	Silver	Gold	Silver
	<i>Short tons</i>	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Fine ounces</i>
Ada.....	5		3.19	4		
Adams.....	65		5.90	4		
Boise.....	2,214		623.63	247	28.30	28
Camas.....	32		26.23	13		
Clearwater.....	192		10.82	4		
Custer.....	11		13.11	22		
Elmore.....	51,766		9,960.65	7,570		
Gem.....	1		1.37	2		
Idaho.....	5,860		3,040.60	1,315	534.33	183
Lemhi.....	433		231.08	60		
Owyhee.....	50	90	34.63	37	6.72	436
Shoshone.....	25	135	8.39	3	10.50	4
Valley.....	35,780		365.57	220	1,139.76	380
Total, 1931.....	96,434 23,786	225 156	14,325.17 9,635.08	9,501 2,259	1,719.61 18.02	1,031 905

County	Concentrates and recovered metal				
	Concentrates produced	Gold	Silver	Copper	Lead
		<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>
Boise.....	74	173.48	2,413	100	314
Camas.....	1	4.00	4		
Clearwater.....	1	2.00			
Elmore.....	460	9,335.73	51,757		
Idaho.....	5	132.23	2,213		
Lemhi.....	14	11.24	12	97	
Owyhee.....	1	9.17	70		
Valley.....	3,242	5,776.00	18,108	910	3,017
Total, 1931.....	3,798 237	15,448.85 600.63	74,586 6,754	1,107 1,489	3,331 2,704

Idaho ore and old tailings concentrated in 1932, by classes of ore, etc., methods of concentration, and classes of concentrates

Class of material concentrated	Method of concentration	Ore and old tailings concentrated	Gross content of mill feed				
			Gold	Silver	Copper	Lead	Zinc
Siliceous ore.....	Flotation.....	<i>Short tons</i> 5,500	<i>Fine ounces</i> 1,771.22	<i>Fine ounces</i> 15,875	<i>Pounds</i> 5,870	<i>Pounds</i> 57,680	<i>Pounds</i> -----
Copper-lead sulphide ore.....	do.....	165,490	-----	3,523,480	962,670	730,400	-----
Lead sulphide ore.....	do.....	14,212	66.00	77,178	6,090	1,945,363	18,970
Lead-zinc sulphide ore.....	do.....	173,388	163.47	677,812	171,300	31,680,275	21,591,215
Lead sulphide ore.....	Gravity and flotation.....	358,590	2,000.69	4,294,345	1,145,930	34,413,718	21,610,185
		559,040	60.00	2,368,098	518,319	112,523,856	18,545,816
Siliceous ore and old tailings.....	Gravity.....	¹ 5,048	87.30	495	55	-----	-----
Lead sulphide ore.....		do.....	20	2.30	710	300	5,000
		5,068	89.60	1,205	355	5,000	-----
		922,698	2,150.29	6,663,648	1,664,604	146,942,574	40,156,001

¹ Includes 5,002 tons of old tailings.

Idaho ore and old tailings concentrated in 1932, by classes of ore, etc., methods of concentration, and classes of concentrates—Continued

Class of material concentrated	Method of concentration	Concentrates produced		Gross content of concentrates				
		Class	Quantity	Gold	Silver	Copper	Lead	Zinc
Siliceous ore.....	Flotation.....	Siliceous.....	Short tons 396	Fine ounces 1,489.91	Fine ounces 13,337	Pounds 4,679	Pounds 48,908	Pounds
Copper-lead sulphide ore.....	do.....	Copper-lead sulphide.....	4,233		3,339,227	894,984	675,330	
Lead sulphide ore.....	do.....	(Lead sulphide.....	1,312	54.34	67,485	4,258	1,747,305	
		Zinc sulphide.....	15		444	45	14,296	14,832
			1,327	54.34	67,929	4,303	1,761,601	14,832
Lead-zinc sulphide ore.....	do.....	(Lead sulphide.....	19,399	2.57	548,282	72,408	27,937,296	
		Lead-zinc sulphide.....	910	4.47	4,136	3,521	117,748	838,922
		Zinc sulphide.....	14,561	100.37	65,172	67,663	899,140	16,128,606
			34,870	107.41	617,590	143,592	28,954,184	16,967,528
			40,826	1,651.66	4,038,083	1,047,558	31,440,023	16,982,360
Lead sulphide ore.....	Gravity and flotation.....	Lead sulphide.....	102,919		2,246,549	438,127	106,488,014	
		Lead-zinc sulphide.....	536	5.16	4,440	3,159	109,075	479,185
		Zinc sulphide.....	4,678	32.27	16,521	14,837	197,245	5,138,905
			108,133	37.43	2,267,510	456,123	106,794,334	5,618,090
Siliceous ore and old tailings.....	Gravity.....	Siliceous.....	² 22	67.83	419	44		
Lead sulphide ore.....	do.....	Lead sulphide.....	6	1.80	599	217	3,988	
			28	69.63	988	261	3,988	
			³ 148,987	1,758.72	6,306,581	1,503,942	138,238,345	22,600,450

² Includes 17 tons of concentrates from old tailings re-treated.

³ Figures do not include 3,798 tons of siliceous concentrates from ore first treated by amalgamation, containing 15,448.85 ounces of gold, 74,586 ounces of silver, 1,684 pounds (1,107 pounds recovered) of copper, and 3,499 pounds (3,331 pounds recovered) of lead.

Mine production of metals from concentrating mills in Idaho in 1932, by counties, in terms of recovered metals

County	Ore and old tailings treated		Concentrates and recovered metal					
	Ore	Old tailings	Concentrates produced	Gold	Silver	Copper	Lead	Zinc
	Short tons	Short tons	Short tons	Fine ounces	Fine ounces	Pounds	Pounds	Pounds
Blaine	438		24	90.75	1,743	237	2,069	1,967
Boise	1,230		49	180.24	1,618		5,586	
Bonner	11,988		824	2.90	51,755	1,524	1,079,482	
Cluster	4		2	11.82	22			
Elmore		2	1	8.69	6			
Gem	1,700		284	433.42	8,111	1,000	25,067	
Idaho	2,200		44	796.00	3,422	2,301	8,500	
Lemhi	10	5,000	17	37.02	23	33		
Owyhee	2		1	2.80	364			
Shoshone	900,040		147,739	185.62	6,238,133	1,098,004	131,372,640	20,502,267
Valley	84		2	9.46	1,384	90	416	
Total, 1931	917,696 1,255,008	5,002	148,987 204,666	1,758.72 1,790.06	6,306,581 6,689,632	1,103,189 1,043,592	132,493,760 180,452,247	20,504,234 39,137,212

Gross metal content of Idaho concentrates produced in 1932, by classes of concentrates

Class of concentrates	Concentrates produced (dry weight)	Gross metal content				
		Gold	Silver	Copper	Lead	Zinc
	Short tons	Fine ounces	Fine ounces	Pounds	Pounds	Pounds
Dry and siliceous	4,216	17,006.59	88,342	6,407	52,407	
Lead	123,636	58.71	2,862,885	515,010	136,176,603	
Zinc	19,254	132.64	82,137	82,545	1,110,681	21,282,343
Copper-lead	4,233		3,339,227	894,984	675,330	
Lead-zinc	1,446	9.63	8,576	6,680	226,823	1,318,107
Total, 1931	152,785 204,903	17,207.57 2,390.69	6,381,167 6,686,386	1,505,626 1,429,327	138,241,844 188,603,840	22,600,450 42,624,976

Mine production of metals from Idaho concentrates in 1932, in terms of recovered metals

BY COUNTIES

	Concentrates	Gold	Silver	Copper	Lead	Zinc
	Short tons	Fine ounces	Fine ounces	Pounds	Pounds	Pounds
Blaine	24	90.75	1,743	237	2,069	1,967
Boise	123	358.72	4,031	100	5,900	
Bonner	824	2.90	51,755	1,524	1,079,482	
Camas	1	4.00	7			
Clearwater	1	2.00				
Cluster	2	11.82	22			
Elmore	461	9,344.42	51,763			
Gem	284	433.42	8,111	1,000	25,067	
Idaho	49	928.23	5,635	2,301	8,500	
Lemhi	31	48.26	35	130		
Owyhee	2	11.97	443			
Shoshone	147,739	185.62	6,238,133	1,098,004	131,372,640	20,502,267
Valley	3,244	5,785.46	19,492	1,000	3,433	
Total, 1931	152,785 204,903	17,207.57 2,390.69	6,381,167 6,686,386	1,104,296 1,045,081	132,497,091 180,454,951	20,504,234 39,137,212

Mine production of metals from Idaho concentrates in 1932, in terms of recovered metals—Continued

BY CLASSES OF CONCENTRATES

	Concentrates	Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Dry and siliceous.....	4, 216	17, 006. 59	88, 342	4, 678	42, 919	-----
Lead.....	123, 636	58. 71	2, 862, 885	389, 888	130, 567, 694	-----
Zinc.....	19, 254	132. 64	82, 137	64, 033	1, 038, 024	19, 304, 165
Copper-lead.....	4, 233	-----	3, 339, 227	641, 245	630, 696	-----
Lead-zinc.....	1, 446	9. 63	8, 576	4, 452	217, 758	1, 200, 069

Gross metal content of Idaho crude ore shipped to smelters in 1932, by classes of ore

Class of ore	Quantity (dry weight)	Gross metal content			
		Gold	Silver	Copper	Lead
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>
Dry and siliceous.....	388	669. 96	8, 855	1, 104	5, 891
Copper.....	12	10. 53	34	3, 534	-----
Lead.....	12, 569	19. 38	312, 026	42, 765	12, 286, 085
	12, 969	699. 87	320, 915	47, 403	12, 291, 976
Total, 1931.....	20, 894	794. 51	519, 020	128, 261	19, 047, 961

Mine production of metals from Idaho crude ore shipped to smelters in 1932, in terms of recovered metals

BY COUNTIES

	Ore	Gold	Silver	Copper	Lead
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>
Blaine.....	10	9. 82	133	33	865
Boise.....	45	182. 02	3, 840	138	1, 533
Bonner.....	77	-----	2, 216	64	73, 284
Butte.....	2	-----	4	-----	2, 300
Camas.....	15	1. 89	759	32	200
Clearwater.....	20	12. 00	67	238	167
Custer.....	4	13. 01	34	-----	500
Elmore.....	10	33. 32	82	-----	67
Idaho.....	43	52. 26	87	32	-----
Lemhi.....	212	289. 48	521	3, 722	20, 100
Owyhee.....	75	95. 52	3, 675	-----	1, 100
Shoshone.....	12, 456	10. 55	309, 497	31, 948	11, 637, 860
	12, 969	699. 87	320, 915	36, 207	11, 737, 976
Total, 1931.....	20, 894	794. 51	519, 020	99, 794	18, 274, 235

BY CLASSES OF ORE

Dry and siliceous.....	388	669. 96	8, 855	767	4, 811
Copper.....	12	10. 53	34	3, 367	-----
Lead.....	12, 569	19. 38	312, 026	32, 073	11, 733, 165

PRODUCTION BY MINING DISTRICTS

The following table shows the mineral production of Idaho in 1932 by mining districts, listed by counties to conform to the arrangement of the review by districts formerly given in the mine chapters of Mineral Resources. A historical table for the Coeur d'Alene region, or Shoshone County, is also given.

GOLD, SILVER, COPPER, LEAD, AND ZINC IN IDAHO 129

Mine production of gold, silver, copper, lead, and zinc in Idaho in 1932, by counties and districts, in terms of recovered metals

County and district	Mines producing		Ore, old tailings, etc.	Gold	Silver	Copper	Lead	Zinc	Total value
	Lode	Placer							
Ada County:			Short tons		Fine ounces	Pounds	Pounds	Pounds	
Black Hornet.....	1		5	\$66	4				\$67
Boise River.....		1		212					212
Highland.....	4			1,612	18				1,617
Snake River.....	1			115					115
Adams County: North Hornet Creek.....	1		65	122	4				123
Benewah County: Tyson Creek.....		3		844	7				846
Bingham County: Snake River.....		1		150					150
Blaine County: Mineral Hill.....	3		408	2,000	255	270	1,100		2,122
Vienna.....	1		(¹)	(¹)	(¹)		(¹)	(¹)	(¹)
Warm Springs.....	1		2	17	68		200		42
Boise County: Banner.....		2		804	21				810
Boise Basin.....	12	28	3,459	51,464	8,429	238	7,300		54,075
Highland.....		3		419					419
Lowman.....		1		76					76
Payette River.....		5		1,116	21				1,122
Summit Flat.....	2		12	239	7				241
Twin Springs.....		3		287	4				288
West View.....	2		20	83	28		133		95
Bonner County: Pend d'Oreille.....	6		12,065	60	53,971	1,588	1,152,766		49,963
Bonneville County: Mount Pisgah.....		4		1,294					1,294
Boundary County: Moyie Yahk.....		2		45					45
Butte County: Dome.....	1		2				2,300		70
Camas County: Little Smoky.....	2	1	15	83	759	32	200		305
Skeleton Creek.....	3		32	625	17				630
Canyon County: Canyon.....		2		136					136
Clearwater County: Burnt Creek.....		1		296					296
Elk River.....		2		145					145
Moose Creek.....		3		410					410
North Fork of Clearwater River.....		3		259					259
Pierce.....	4	12	192	6,045	64				6,063
Ruby Creek.....	1		20	248	67	238	167		287
Silver Creek.....		1		247	4				248
Custer County: Bayhorse.....	1	2	1	713	11				716
East Fork.....	1		2	138					138
Stanley Basin.....	1	7	3	2,182	53		500		2,212
Yankee Fork.....	7	2	14	806	64				824
Elmore County: Bear Creek.....	12	4	382	7,733	170				7,781
Black Warrior.....		4		248					248
Highland.....		3		731	11				734
Middle Boise.....	4	4	51,295	392,493	59,177				409,181
Neal.....	2		21	538	11				541
Pine Grove.....	7		80	1,519	103		67		1,560
Snake River.....		6		1,344					1,344
Twin Springs.....		2		1,394	21				1,400
Gem County: Payette River.....		1		87					87
West View.....	2	4	1,701	9,332	8,113	1,000	25,067		12,435
Gooding County: Snake River.....		3		925					925
Idaho County: Black Tail.....		1		331					331
Camp Howard.....		6		1,734	14				1,738
Dewey.....		1		409	7				411
Dixie.....	5	1	151	1,364	43				1,376
Elk City.....		9		3,522	25				3,529
Florence.....	3	1	6	477	10				480
Lolo.....		1		45					45
Lowell.....		3		265					265
Maggie Creek.....		3		191					191
Marshall Lake.....	6		1,623	31,143	2,951				31,975

¹ Included under "Undistributed."

Mine production of gold, silver, copper, lead, and zinc in Idaho in 1932, by counties and districts, in terms of recovered metals—Continued

County and district	Mines producing		Ore, old tailings, etc.	Gold	Silver	Copper	Lead	Zinc	Total value
	Lode	Placer							
Idaho County—Con.			Short tons		Fine ounces	Pounds	Pounds	Pounds	
Newsome	1	1	2	\$1,112	14				\$1,116
North Fork of Clearwater River		2		561	7				563
Orogrande	4	2	1,123	10,643	170	32			10,693
Ramey Ridge	4		214	7,291	96				7,318
Robbins	2		2,405	17,478	3,447	2,301	8,500		18,850
Salmon River		1		331					331
Simpson		6		3,594	39				3,605
Sugar Loaf	1		1	20					20
Ten Mile	6	3	2,573	26,622	503				26,764
Warren	1	11	1	164,364	2,809				165,156
Jefferson County:									
Snake River		1		226					226
Jerome County: Snake River		3		714					714
Latah County:									
Gold Creek		3		223					223
Hoodoo		2		130					130
Moscow Mountain		2		147					147
Lemhi County:									
Eldorado	3		85	1,287	28	318			1,315
Eureka	2	6	52	2,100	46		2,666		2,201
Gibbonsville	4	8	605	10,281	369	3,095	267		10,588
Indian Creek	1	1	27	830	7				832
Junction	1		17	788	82				811
Mackinaw	2	13	26	4,083	14				4,087
Mineral Hill	8		5,302	6,473	209		700		6,553
Nicholia	1		22		160		15,900		522
Parker Mountain	1		1	51	7				53
Pratt Creek	1		19	122	14	79	567		148
Salmon River		1		1,222	11				1,225
Spring Mountain	1		10	11	21	3,111			213
Yellow Jacket		1		93					93
Lewis County:									
Clearwater River		1		30					30
Salmon River		2		310					310
Nez Perce County:									
Lenore		1		15					15
Salmon River		4		681	7				683
Owyhee County:									
Carson	14	8	64	4,261	1,596				4,711
Castle Creek	2		157	342	3,259		1,100		1,294
Snake River		5		841	7				843
Steele		1		7,656	156				7,700
Power County: Snake River		4		1,371	7				1,373
Shoshone County:									
Beaver	1	9	15	2,464	21				2,470
Coeur d'Alene		2		634	7				636
Eagle	1	1	(1)	(1)	(1)		(1)		(1)
Evolution	1		151,883		3,015,539	561,159	424,000		898,455
Hunter	3		128,521	1,434	491,287	74,841	21,504,666	11,946,100	1,148,215
Lelande	4		150,844	272	947,160	155,098	35,964,534	1,441,000	1,399,346
Placer Center	1		(1)	(1)	(1)	(1)	(1)		(1)
Saint Joe		1		(1)					(1)
Summit	3	2	323	1,968	277	143	8,933		2,323
Yreka	7		479,814	1,226	2,081,784	336,317	84,671,000	7,115,167	3,363,062
Twin Falls County:									
Snake River		14		4,145	14				4,149
Valley County:									
Big Creek		2		157					157
Deadwood Basin	3		214	2,598	64				2,616
Hurdy Creek		1		55					55
Seafoam		1		51					51
Thunder Mountain	1	3	1,200	5,341	170				5,389
Yellow Pine	2		(1)	(1)	(1)	(1)	(1)		(1)
Undistributed ¹			35,752	143,375	33,024	2,794	442,434	1,967	166,196
Total Idaho	178	280	1,032,853	969,207	6,716,968	1,143,381	144,235,067	20,504,234	7,877,604

¹ Included under "Undistributed."² Includes items entered as "(1)" above.

Mine production of gold, silver, copper, lead, and zinc in the Coeur d'Alene region, Shoshone County, Idaho, 1931 and 1932, and total, 1884-1932, in terms of recovered metals

Year	Lode mines	Placers	Ore, old tailings, etc.	Gold	Silver
1931.....	30	7	<i>Short tons</i> 1 1,239,592	2 \$9,418	<i>Fine ounces</i> 2 7,003,541
1932.....	21	15	1 912,664	2 8,154	2 6,547,674
Total, 1884-1932.....			(3)	7,188,305	268,825,052

Year	Copper	Lead	Zinc	Total value
1931.....	<i>Pounds</i> 1,044,885	<i>Pounds</i> 195,541,151	<i>Pounds</i> 37,868,650	\$10,809,561
1932.....	1,129,952	143,010,500	20,502,267	6,831,168
Total, 1884-1932.....	83,806,930	4 4,378,192	873,633,019	738,205,583

¹ Includes old tailings, etc., as follows: 1931, 30 tons of old tailings amalgamated and 5 tons of old mill cleanings sold to a smelter; 1932, 135 tons of old tailings cyanided and 8 tons of old mill cleanings sold to a smelter.

² Includes placer production as follows: 1931, \$1,250 in gold and 12 ounces of silver; 1932, \$3,610 in gold and 32 ounces of silver.

³ Figures not available.

⁴ Short tons.

GOLD, SILVER, COPPER, LEAD, AND ZINC IN WASHINGTON

(DETAILED STATISTICS—MINE REPORT)

By C. N. GERRY AND T. H. MILLER

SUMMARY

The value of the mine production of gold, silver, copper, lead, and zinc in Washington decreased 47 percent—from \$565,498 in 1931 to \$300,263 in 1932—as a result of inactivity at the copper mines and serious curtailment at the mines producing lead ore and lead-zinc ore. The output of gold increased distinctly in 1932 and was larger than in any year since 1928.

Since 1860 Washington has yielded an output of the five metals as follows: Gold, \$30,587,837; silver, 9,324,502 fine ounces; copper, 27,063,115 pounds; lead, 67,823,299 pounds; and zinc, 30,118,363 pounds. The total value has amounted to \$48,329,651, of which 63 percent represents the value of gold.

The value of metal production herein reported has been calculated at the figures given in the table that follows. Gold is figured at the mint value for fine gold; that is, \$20.671835 an ounce. The silver price is the average New York price for bar silver. The copper, lead, and zinc prices are weighted averages, for each year, of all grades of primary metal sold by producers.

Prices of silver, copper, lead, and zinc, 1928-32

Year	Silver	Copper	Lead	Zinc	Year	Silver	Copper	Lead	Zinc
	<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>		<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>
1928.....	\$0.585	\$0.144	\$0.058	\$0.061	1931.....	\$0.290	\$0.091	\$0.037	\$0.038
1929.....	.533	.176	.063	.066	1932.....	.282	.063	.030	.030
1930.....	.385	.130	.050	.048					

Mine production of gold, silver, copper, lead, and zinc in Washington, 1928-32, in terms of recovered metals

Year	Mines producing		Ore, old tailings, etc. (short tons)	Gold		Silver	
	Lode	Placer		Fine ounces	Value	Fine ounces	Value
1928.....	37	1	64,554	16,310.45	\$337,167	99,738	\$58,347
1929.....	29	4	93,527	3,719.94	76,898	47,182	25,148
1930.....	24	14	45,456	4,244.81	87,748	32,816	12,634
1931.....	24	21	92,049	2,904.19	60,035	22,410	6,499
1932.....	40	55	42,272	5,082.13	105,057	17,412	4,910

Mine production of gold, silver, copper, lead, and zinc in Washington, 1928-32, in terms of recovered metals—Continued

Year	Copper		Lead		Zinc		Total value
	Pounds	Value	Pounds	Value	Pounds	Value	
1928.....	1, 177, 246	\$169, 523	1, 084, 739	\$62, 915	85, 318	\$5, 204	\$633, 156
1929.....	1, 400, 489	246, 486	1, 015, 190	63, 956	2, 117, 344	139, 745	552, 233
1930.....	1, 206, 438	156, 837	1, 152, 585	57, 629	703, 782	33, 782	348, 630
1931.....	202, 503	18, 428	2, 771, 116	102, 531	9, 947, 495	378, 005	565, 498
1932.....	5, 524	348	1, 842, 267	55, 268	4, 489, 334	134, 680	300, 263

Gold and silver produced at placer mines in Washington, 1928-32, in fine ounces

Year	Gold	Silver	Year		
			Year	Gold	Silver
1928.....	90.85	30	1931.....	153.06	12
1929.....	295.78	98	1932.....	386.95	75
1930.....	190.90	43			

The production of gold in Washington increased from 2,904.19 ounces in 1931 to 5,082.13 ounces in 1932 and came chiefly from lode mines in Ferry and Whatcom Counties. Silver was unimportant and was recovered chiefly from siliceous ores of smelting grade mined at Republic, Ferry County. A marked decrease was shown in copper output, as the mines in Snohomish and Stevens Counties were idle. The output of lead decreased nearly 34 percent and that of zinc, entirely from Pend Oreille County, 55 percent.

Mine production of gold, silver, copper, lead, and zinc in Washington in 1932, by counties, in terms of recovered metals

County	Gold (lode and placer)		Silver (lode and placer)	
	Fine ounces	Value	Fine ounces	Value
Asotin.....	20.08	\$415	4	\$1
Chelan.....	162.93	3, 368	36	10
Clallam.....	7.35	152		
Douglas.....	13.74	284	4	1
Ferry.....	2, 324.52	48, 052	13, 425	3, 786
Garfield.....	4.74	98		
Grant.....	4.11	85		
King.....	19.01	393	206	58
Kittitas.....	314.58	6, 503	142	40
Lincoln.....	11.37	235	4	1
Okanogan.....	183.34	3, 790	70	20
Pend Oreille.....	28.59	591	2, 606	735
Snohomish.....	30.72	635	7	2
Stevens.....	214.83	4, 441	663	187
Whatcom.....	1, 728.97	35, 741	245	69
Whitman.....	6.00	124		
Yakima.....	7.25	150		
Total, 1931.....	5, 082.13	105, 057	17, 412	4, 910
	2, 904.19	60, 035	22, 410	6, 499

GOLD, SILVER, COPPER, LEAD, AND ZINC IN WASHINGTON 135

Mine production of gold, silver, copper, lead, and zinc in Washington in 1932, by counties, in terms of recovered metals—Continued

County	Copper		Lead		Zinc		Total value
	Pounds	Value	Pounds	Value	Pounds	Value	
Asotin.....							\$416
Chelan.....							3,378
Clallam.....							152
Douglas.....							285
Ferry.....	842	\$53					51,891
Garfield.....							98
Grant.....							85
King.....	175	11	1,067	\$32			494
Kittitas.....							6,543
Lincoln.....							236
Okanogan.....	15	1	300	9			3,820
Pend Oreille.....	3,396	214	1,364,066	40,922	4,489,334	\$134,680	177,142
Snohomish.....							637
Stevens.....			475,667	14,270			18,898
Whatcom.....	1,096	69	1,167	35			35,914
Whitman.....							124
Yakima.....							150
Total, 1931.....	5,524	348	1,842,267	55,268	4,489,334	134,680	300,263
	202,503	18,428	2,771,116	102,531	9,947,495	378,005	565,498

Ore and old mill cleanings sold or treated and lode mines producing in Washington, 1931 and 1932, by counties

County	Ore and old mill cleanings (short tons)		Lode mines producing		County	Ore and old mill cleanings (short tons)		Lode mines producing	
	1931	1932	1931	1932		1931	1932	1931	1932
Chelan.....	130	171	1	7	Pend Oreille.....	80,968	33,443	1	2
Ferry.....	3,736	4,418	5	9	Snohomish.....	5,000		1	
King.....		22		1	Stevens.....	386	762	9	8
Kittitas.....	10	56	3	6	Whatcom.....	1,779	3,067	1	4
Okanogan.....	40	333	3	3					
						92,049	42,272	24	40

MINING INDUSTRY

The mining industry of Washington, except gold mining, was far below normal in 1932, as indicated in the total value of the metal output. Details were published in the statement issued in January 1933 and in the Minerals Yearbook of the Bureau of Mines issued in August 1933.

ORE CLASSIFICATION

Ore and old mill cleanings sold or treated in Washington in 1932, with content in terms of recovered metals

Source	Mines producing	Ore and old mill cleanings	Gold	Silver	Copper	Lead	Zinc
		Short tons	Fine ounces	Fine ounces	Pounds	Pounds	Pounds
Dry gold ore.....	35	18,491	4,695.18	14,467	2,128	2,534	
Dry silver ore.....	1	5		30			
Lead ore.....	3	353		251	36	490,020	
Lead-zinc ore.....	1	33,423		2,589	3,360	1,349,713	4,489,334
Total, lode mines.....	40	42,272	4,695.18	17,337	5,524	1,842,267	4,489,334
Total, placers.....	55		386.95	75			
Total, 1931.....	95	42,272	5,082.13	17,412	5,524	1,842,267	4,489,334
	45	92,049	2,904.19	22,410	202,503	2,771,116	9,947,495

1 Includes 38 tons of old mill cleanings sold to a smelter.

Value of metals from ore and old mill cleanings sold or treated in Washington in 1932, by classes of ore

Class	Ore and old mill cleanings (short tons)	Gold	Silver	Copper	Lead	Zinc	Total value
Dry gold ore.....	8,491	\$97,058	\$4,080	\$134	\$76	-----	\$101,348
Dry silver ore.....	5	-----	8	-----	-----	-----	8
Lead ore.....	353	-----	71	2	14,701	-----	14,774
Lead-zinc ore.....	33,423	-----	730	212	40,491	\$134,630	176,113
	42,272	97,058	4,889	348	55,268	134,630	292,243
Total, 1931.....	92,049	56,871	6,495	18,428	102,531	378,005	562,330

The production of siliceous ore and old mill cleanings, chiefly gold ore from mines in Ferry and Whatcom Counties, increased 47 percent in 1932 and accounted for 20 percent of the total output. Lead-zinc ore from Pend Oreille County accounted for nearly 80 percent of the total ore produced, but the output declined 59 percent from that in 1931.

Ore and old mill cleanings sold or treated in Washington in 1932, by counties, with content in terms of recovered metals

DRY GOLD ORE

County	Ore and old mill cleanings	Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Chelan.....	171	135.55	32	-----	-----	-----
Ferry.....	4,418	2,282.87	13,415	842	-----	-----
King.....	22	19.01	206	175	1,067	-----
Kittitas.....	156	302.00	138	-----	-----	-----
Okanogan.....	333	48.86	46	15	300	-----
Stevens.....	424	177.92	385	-----	-----	-----
Whatcom.....	3,067	1,728.97	245	1,096	1,167	-----
	8,491	4,695.18	14,467	2,128	2,534	-----
Total, 1931.....	5,779	2,725.53	7,316	936	559	-----

DRY SILVER ORE

Stevens.....	5	-----	30	-----	-----	-----
Total, 1931.....	(*) 5	-----	30	-----	-----	-----

LEAD ORE

Pend Oreille.....	20	-----	10	36	14,353	-----
Stevens.....	333	-----	241	-----	475,667	-----
	353	-----	251	36	490,020	-----
Total, 1931.....	239	-----	165	199	255,573	-----

LEAD-ZINC ORE

Pend Oreille.....	33,423	-----	2,589	3,360	1,349,713	4,489,334
	33,423	-----	2,589	3,360	1,349,713	4,489,334
Total, 1931.....	80,968	-----	4,595	2,670	2,514,977	9,947,495

* Includes 3 tons of old mill cleanings sold to a smelter.

* Includes 35 tons of old mill cleanings sold to a smelter.

* None produced in 1931.

Zinc products produced or marketed from Washington mines and mills in 1932

Classification	County	Quantity (dry weight)	Gross zinc	Average assay of concentrates	Recovered zinc
Zinc concentrates.....	Pend Oreille.....	<i>Short tons</i> 4, 047	<i>Pounds</i> 4, 988, 150	<i>Percent</i> 61. 63	<i>Pounds</i> 4, 489, 334
Total, 1931.....		4, 047 9, 085	4, 988, 150 10, 854, 970	61. 63 59. 74	4, 489, 334 9, 947, 495

METALLURGIC INDUSTRY

Milling in 1932 was confined to the treatment of gold ore by amalgamation in Whatcom County and to the treatment of lead-zinc ore in a flotation plant at Metaline Falls, Pend Oreille County. The custom copper smelter and refinery were active at Tacoma, and a small Mace smelter making a gold-copper matte was operated in Whatcom County.

Washington ore concentrated in 1932, by classes of ore, with gross metal content of mill feed.

Class of ore	Quantity (dry weight)	Gross content of mill feed by assay				
		Gold	Silver	Copper	Lead	Zinc
Lead-zinc.....	<i>Short tons</i> 33, 423	<i>Fine ounces</i> -----	<i>Fine ounces</i> 3, 319	<i>Pounds</i> 6, 500	<i>Pounds</i> 1, 811, 527	<i>Pounds</i> -----
Total, 1931.....	33, 423 86, 098	----- 55. 00	3, 319 8, 550	6, 500 215, 610	1, 811, 527 3, 433, 883	----- 6, 203, 310 13, 197, 784

Gross metal content of Washington concentrates produced in 1932, by classes of concentrates

Class of concentrates	Concentrates produced (dry weight)	Gross metal content				
		Gold	Silver	Copper	Lead	Zinc
Dry and siliceous.....	<i>Short tons</i> 9	<i>Fine ounces</i> 26. 35	<i>Fine ounces</i> 27	<i>Pounds</i> 16	<i>Pounds</i> 481	<i>Pounds</i> -----
Lead.....	971	-----	2, 189	1, 942	1, 358, 243	-----
Zinc.....	4, 047	-----	400	3, 000	52, 020	4, 988, 150
Total, 1931.....	5, 027 11, 203	26. 35 41. 60	2, 616 5, 959	4, 958 183, 265	1, 410, 744 2, 646, 790	4, 988, 150 10, 854, 970

138 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Mine production of metals from Washington concentrates in 1932, in terms of recovered metals

BY COUNTIES

	Concentrates	Gold	Silver	Copper	Lead	Zinc
	Short tons	Fine ounces	Fine ounces	Pounds	Pounds	Pounds
Chelan.....	2	2.50	1			
Okanogan.....	7	23.85	26	15	300	
Pend Oreille.....	5,018		2,589	3,360	1,349,713	4,489,334
Total, 1931.....	5,027 11,203	26.35 41.60	2,616 5,959	3,375 177,737	1,350,013 2,515,380	4,489,334 9,947,495

BY CLASSES OF CONCENTRATES

Dry and siliceous.....	9	26.35	27	15	300	
Lead.....	971		2,189	1,360	1,303,913	
Zinc.....	4,047		400	2,000	45,800	4,489,334

Gross metal content of Washington crude ore shipped to smelters in 1932, by classes of ore

Class of ore	Quantity (dry weight)	Gross metal content			
		Gold	Silver	Copper	Lead
	Short tons	Fine ounces	Fine ounces	Pounds	Pounds
Dry and siliceous.....	5,131	2,779.09	14,051	2,281	1,768
Lead.....	353		251	46	510,469
Total, 1931.....	5,484 4,159	2,779.09 2,063.64	14,302 16,387	2,327 25,605	512,237 266,504

Mine production of metals from Washington crude ore shipped to smelters in 1932, in terms of recovered metals

BY COUNTIES

	Ore	Gold	Silver	Copper	Lead
	Short tons	Fine ounces	Fine ounces	Pounds	Pounds
Chelan.....	23	82.00	11		
Ferry.....	4,398	2,273.86	13,387	842	
King.....	22	19.01	206	175	1,067
Okanogan.....	3	2.81	3		
Pend Oreille.....	20		10	36	14,353
Stevens.....	762	177.92	656		475,667
Whatcom.....	256	223.49	29	1,096	
Total, 1931.....	5,484 4,159	2,779.09 2,063.64	14,302 16,387	2,149 24,766	491,087 255,736

BY CLASSES OF ORE

Dry and siliceous.....	5,131	2,779.09	14,051	2,113	1,067
Lead.....	353		251	36	490,020

PRODUCTION BY MINING DISTRICTS

The following table shows the mineral production of Washington in 1932 by districts, listed by counties to conform to the arrangement of the review by districts formerly given in the mine chapters of Mineral Resources.

Mine production of gold, silver, copper, lead, and zinc in Washington in 1932, by counties and districts, in terms of recovered metals

County and district	Mines producing		Ore and old mill cleanings	Gold	Silver	Copper	Lead	Zinc	Total value
	Lode	Placer							
Asotin County: Snake River		5	Short tons	\$415	Fine ounces 4				\$416
Chelan County:									
Blewett	5	2	100	2,325	18				2,330
Columbia River		1		416	4				417
Entiat	2		71	575	14				579
Wenatchee River		1		52					52
Clallam County: Ozette		3		152					152
Douglas County: Columbia River		2		284	4				285
Ferry County:									
Belcher	1		4	104					104
Boundary Creek		1		37					37
Columbia River		4		824	10				827
Danville	1		40	496	46	842			562
Republic	7		4,374	46,591	13,369				50,361
Garfield County: Snake River		1		98					98
Grant County: Columbia River		1		85					85
King County: Miller River	1		22	393	206	175	1,067		494
Kittitas County: Swauk	6	4	56	6,503	142				6,543
Lincoln County: Columbia River		2		235	4				236
Okanogan County:									
Columbia River		2		112					112
Meyers Creek	1	5	300	2,804	42				2,816
Palmer Mountain	1		30	92	18	15	300		107
Similkameen		5		724	7				726
Squaw Creek	1		3	58	3				59
Pend Oreille County: Metairie	2	4	33,443	591	2,606	3,396	1,364,066	4,489,334	177,142
Snohomish County: Sultan		4		635	7				637
Stevens County:									
Columbia River		1		620	7				622
Kettle Falls	3	1	62	930	245				999
Marcus		1		33					33
Northport	2	1	333	52	241	475,667			14,390
Orient	3		367	2,806	170				2,854
Whatcom County:									
Mount Baker	1		2,775	29,354	78				29,376
Slate Creek	3		292	6,387	167	1,096	1,167		6,538
Whitman County:									
Columbia River		1		83					83
Snake River		1		41					41
Yakima County: Summit		2		150					150
Total Washington	40	55	42,272	105,057	17,412	5,524	1,842,267	4,489,334	300,263

GOLD, SILVER, COPPER, LEAD, AND ZINC IN COLORADO

(DETAILED STATISTICS—MINE REPORT)

By CHAS. W. HENDERSON

SUMMARY

The total calculated gross value of the recovered and estimated recoverable gold, silver, copper, lead, and zinc from gravels handled and ores mined in Colorado in 1932 decreased 3 percent from that in 1931, following a decrease of 40 percent in 1931 from 1930. The total value of gold increased 36 percent; the total value of silver decreased 18 percent, copper 37 percent, lead 75 percent, and zinc 99 percent. There were 478 lode mines and 335 placers producing in 1932 and 340 lode mines and 195 placers in 1931, an increase of 138 lode mines and 140 placers.

The total recorded value of gold (\$726,873,920), silver (\$519,686,650), copper (\$47,618,405), lead (\$217,705,031), and zinc (\$157,014,096), all in terms of recovered metals, produced from Colorado ores and gravels from 1858 to 1932, inclusive, is \$1,668,898,102. The total quantities are 35,162,526 ounces of gold, 661,988,241 ounces of silver, 320,803,430 pounds of copper, 4,611,639,583 pounds of lead, and 2,230,343,985 pounds of zinc.

The value of metal production herein reported has been calculated at the figures given in the table that follows. Gold is figured at the mint value for fine gold; that is, \$20.671835 an ounce. The silver price is the average New York price for bar silver. The copper, lead, and zinc prices are weighted averages, for each year, of all grades of primary metal sold by producers.

Prices of silver, copper, lead, and zinc, 1928-32

Year	Silver	Copper	Lead	Zinc	Year	Silver	Copper	Lead	Zinc
	<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>		<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>
1928.....	\$0.585	\$0.144	\$0.058	\$0.061	1931.....	\$0.290	\$0.091	\$0.037	\$0.038
1929.....	.533	.176	.063	.066	1932.....	.282	.063	.030	.030
1930.....	.385	.130	.050	.048					

Mine production of gold, silver, copper, lead, and zinc in Colorado, 1928-32, in terms of recovered metals

Year	Mines producing			Ore sold or treated (short tons)	Gold			Silver (lode and placer)	
	Lode	Placer	Total		Lode	Placer	Total	Fine ounces	Value
1928.....	336	23	359	1,426,084	\$5,243,470	\$61,406	\$5,304,876	4,052,253	\$2,370,568
1929.....	290	13	303	1,172,193	4,371,508	45,850	4,417,358	4,397,377	2,343,802
1930.....	313	21	334	1,335,731	4,379,376	138,243	4,517,619	4,382,852	1,687,398
1931.....	340	195	535	1,036,562	4,801,148	21,586	4,822,734	2,195,914	636,815
1932.....	478	335	813	935,895	6,520,499	51,655	6,572,154	1,860,408	524,635

Mine production of gold, silver, copper, lead, and zinc in Colorado, 1928-32, in terms of recovered metals—Continued

Year	Copper		Lead		Zinc		Total value
	Pounds	Value	Pounds	Value	Pounds	Value	
1928.....	8,594,646	\$1,237,629	53,501,723	\$3,103,100	71,462,000	\$4,359,182	\$16,375,355
1929.....	8,905,074	1,567,293	48,889,906	3,080,064	58,861,000	3,884,826	15,293,343
1930.....	10,514,000	1,366,820	44,260,000	2,213,000	72,518,000	3,480,864	13,265,701
1931.....	8,165,000	743,015	13,768,000	509,416	32,373,000	1,230,174	7,942,154
1932.....	7,398,000	466,074	4,299,000	128,970	218,000	6,540	7,698,373

Gold and silver produced at placer mines in Colorado, 1928-32, in fine ounces, in terms of recovered metals

Year	Sluicing and hydraulic		Dredging		Total	
	Gold	Silver	Gold	Silver	Gold	Silver
1928.....	502.45	100	2,468.06	628	2,970.51	728
1929.....	355.72	60	1,862.27	488	2,217.99	548
1930.....	358.90	57	6,328.61	1,600	6,687.51	1,657
1931.....	777.32	121	266.90	69	1,044.22	190
1932.....	1,376.79	283	1,122.02	288	2,498.81	571

Mine production of gold, silver, copper, lead, and zinc in Colorado in 1932, by counties, in terms of recovered metals

County	Mines producing			Gold (lode and placer)		Silver (lode and placer)	
	Lode	Placer	Total	Fine ounces	Value	Fine ounces	Value
Adams.....		4	4	11.90	\$246	4	\$1
Arapahoe.....		1	1	1.55	32		
Boulder.....	148	10	158	3,865.55	79,908	9,695	2,734
Chaffee.....	12	17	29	150.11	3,103	741	209
Clear Creek.....	52	37	89	5,813.42	120,174	28,124	7,931
Costilla.....		1	1	7.64	158		
Custer.....	2	1	2	1.16	24	14	4
Denver.....		12	12	31.25	646		2
Douglas.....		3	3	34.15	706	7	2
Eagle.....	6	2	8	2,901.63	59,982	1,110,819	313,251
Elbert.....		3	3	27.62	571		
Fremont.....	2	2	4	31.06	642		1
Gilpin.....	54	66	120	15,879.24	328,253	24,943	7,034
Gunnison.....		1	1	1.79	37		
Grand.....	8	10	18	115.47	2,387	57	16
Hinsdale.....	2		2	69.13	1,429	99	28
Huerfano.....		1	1	1.79	37		
Jackson.....		1	1	3.24	67		
Jefferson.....		5	5	11.61	240		
Lake.....	18	11	29	6,274.04	129,696	16,766	4,728
La Plata.....	12	2	14	1,468.52	30,357	6,968	1,965
Larimer.....	2		2	2.71	56		
Mass.....		1	1	7.74	36		
Moffat.....		13	13	60.42	1,249	4	1
Montezuma.....		1	1	1.89	39		
Montrose.....		18	18	99.70	2,061	28	8
Ourray.....	12	3	15	12,478.28	257,949	47,780	13,474
Park.....	18	38	56	125,749.70	2,599,477	63,220	17,828
Pitkin.....	2	1	3	91.09	1,883	45,993	12,970
Rio Grande.....	2	1	3	9.00	186	7	2
Routt.....		8	8	21.72	449	14	4
Saguache.....	5		5	58.63	1,212	32	9
San Juan.....	9		9	28,367.97	586,418	491,195	138,517
San Miguel.....	25	10	35	3,315.72	68,542	4,745	1,338
Summit.....	7	49	56	1,601.02	33,096	1,479	417
Teller.....	80	3	83	109,366.49	2,260,806	7,663	2,161
Total, 1931.....	478	335	813	317,927.95	6,572,154	1,860,408	524,635
	340	195	535	233,299.75	4,822,734	2,195,914	636,815

GOLD, SILVER, COPPER, LEAD, AND ZINC IN COLORADO 143

Mine production of gold, silver, copper, lead, and zinc in Colorado in 1932, by counties, in terms of recovered metals—Continued

County	Copper		Lead		Zinc		Total value
	Pounds	Value	Pounds	Value	Pounds	Value	
Adams.....							\$247
Arapahoe.....							32
Boulder.....			9,000	\$270			82,912
Chaffee.....			6,000	180			3,492
Clear Creek.....	6,000	\$378	75,000	2,250			130,733
Costilla.....							158
Custer.....							28
Denver.....							648
Douglas.....							708
Eagle.....	5,620,000	354,060	441,000	13,230			740,523
Elbert.....							571
Fremont.....							643
Gilpin.....	46,000	2,898	189,000	5,670	84,000	\$2,520	346,375
Grand.....							37
Gunnison.....							2,403
Hinsdale.....			2,000	60			1,517
Huerfano.....							37
Jackson.....							67
Jefferson.....							240
Lake.....	6,000	378	152,000	4,560	126,000	3,780	143,142
La Plata.....			7,000	210			32,532
Larimer.....							56
Mesa.....							36
Moffat.....							1,250
Montezuma.....							39
Montrose.....							2,069
Ourray.....	90,000	5,670	314,000	9,420	8,000	240	286,753
Park.....	60,300	3,799	1,615,000	48,450			2,669,554
Pitkin.....			228,000	6,840			21,693
Rio Grande.....							188
Routt.....							453
Saguache.....							1,221
San Juan.....	1,568,000	98,784	1,239,000	37,170			860,839
San Miguel.....	1,000	63	21,000	630			70,573
Summit.....	700	44	1,000	30			53,587
Teller.....							2,262,967
Total, 1931.....	7,398,000	466,074	4,299,000	128,970	218,000	6,540	7,698,373
	8,165,000	743,015	13,768,000	509,416	32,373,000	1,230,174	7,942,164

Gold and silver produced at lode and placer mines in Colorado in 1932, by counties, in terms of recovered metals

County	Lode mines				Placer mines			Grand total value		
	Ore sold or treated	Gold	Silver		Gold	Silver				
			Total value			Total value				
	<i>Short tons</i>		<i>Fine ounces</i>			<i>Fine ounces</i>				
Adams.....					\$246	4	\$1	\$247		
Arapahoe.....					32			32		
Boulder.....	5,723	\$76,873	9,681	\$2,730	\$79,603	3,035	14	4	3,039	82,642
Chaffee.....	133	1,612	727	205	1,817	1,491	14	4	1,495	3,312
Clear Creek.....	12,959	118,992	28,117	7,929	126,921	1,182	7	2	1,184	128,105
Costilla.....						158			158	158
Custer.....	1	24	14	4	28				28	28
Denver.....					646	7	2		648	648
Douglas.....					706	7	2		708	708
Eagle.....	51,238	59,839	1,110,819	313,251	373,140	93			93	373,233
Elbert.....						571			571	571
Fremont.....	501	475	4	1	476	167			167	643
Gilpin.....	280,415	323,777	24,883	7,017	330,794	4,476	60	17	4,493	335,287
Grand.....						37			37	37
Gunnison.....	345	2,007	53	15	2,022	380	4	1	381	2,403
Hinsdale.....	20	1,429	99	28	1,457					1,457
Huerfano.....						37			37	37
Jackson.....						67			67	67
Jefferson.....						240			240	240
Lake.....	4,351	128,373	16,752	4,724	133,097	1,323	14	4	1,327	134,424
La Plata.....	3,041	30,310	6,968	1,965	32,275	47			47	32,322
Larimer.....	5	56			56				56	56
Mesa.....						36			36	36

Gold and silver produced at lode and placer mines in Colorado in 1932, by counties, in terms of recovered metals—Continued

County	Lode mines				Placer mines			Grand total value		
	Ore sold or treated	Gold	Silver		Total value	Gold	Silver			
			Short tons	Fine ounces			Fine ounces			
Moffat					\$1,249	4	\$1	\$1,250	\$1,250	
Montezuma					39			39	39	
Montrose					2,061	28	8	2,069	2,069	
Ouray	19,572	\$257,803	47,780	\$13,474	\$271,277	146		146	271,423	
Park	42,157	2,596,017	63,188	17,819	2,613,836	3,460	32	3,469	2,617,305	
Pitkin	4,138	1,839	45,993	12,970	14,809	44		44	14,853	
Rio Grande	2	105	7	2	107	81		81	188	
Routt					449	14	4	453	453	
Saguache	44	1,212	32	9	1,221				1,221	
San Juan	191,051	586,418	491,195	138,517	724,935				724,935	
San Miguel	1,795	67,822	4,734	1,335	69,157	720	11	3	69,880	
Summit	5,522	5,064	1,135	320	5,384	28,032	344	97	23,129	
Teller	312,882	2,260,402	7,656	2,159	2,262,561	404	7	2	2,262,967	
Total, 1931	935,895 1,036,562	6,520,499 4,801,148	1,859,837 2,195,724	524,474 636,760	7,044,973 5,437,908	51,655 21,586	571 190	161 55	51,816 21,641	7,096,789 5,459,549

Gold and silver produced at placer mines in Colorado in 1932, by counties, in fine ounces

County	Sluicing and hydraulic		Dredging		Total	
	Gold	Silver	Gold	Silver	Gold	Silver
Adams	11.90	4			11.90	4
Arapahoe	1.55				1.55	
Boulder	146.82	14			146.82	14
Chaffee	72.13	14			72.13	14
Clear Creek	57.18	7			57.18	7
Costilla	7.64				7.64	
Denver	31.25	7			31.25	7
Douglas	34.15	7			34.15	7
Eagle	4.50				4.50	
Elbert	27.62				27.62	
Fremont	8.08				8.08	
Gilpin	216.53	60			216.53	60
Grand	1.79				1.79	
Gunnison	18.38	4			18.38	4
Huerfano	1.79				1.79	
Jackson	3.24				3.24	
Jefferson	11.61				11.61	
Lake	64.00	14			64.00	14
La Plata	2.27				2.27	
Mesa	1.74				1.74	
Moffat	60.42	4			60.42	4
Montezuma	1.89				1.89	
Montrose	99.70	28			99.70	28
Ouray	7.06				7.06	
Park	167.38	32			167.38	32
Pitkin	2.13				2.13	
Rio Grande	3.92				3.92	
Routt	21.72	14			21.72	14
San Miguel	34.83	11			34.83	11
Summit	234.03	56	1,122.02	288	1,356.05	344
Teller	19.54	7			19.54	7
Total, 1931	1,376.79 777.32	283 121	1,122.02 266.90	288 69	2,498.81 1,044.22	571 190

MINING INDUSTRY

Important features of the mining industry in Colorado are given under Review by Counties and Districts, page 149, and also in the Minerals Yearbook, 1932-33, pages 138 to 141.

ORE CLASSIFICATION

Ore sold or treated in Colorado in 1932, with content in terms of recovered metals

Source	Ore	Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Dry gold ore.....	635, 428	282, 533. 56	171, 640	200, 600	2, 149, 100	84, 000
Dry gold and silver ore.....	193, 656	29, 668. 59	506, 355	1, 565, 600	1, 193, 160	-----
Dry silver ore.....	6, 003	18. 16	59, 796	2, 600	290, 000	8, 000
	885, 087	312, 220. 31	737, 791	1, 768, 800	3, 632, 260	92, 000
Copper ore.....	49, 404	2, 402. 30	1, 103, 829	5, 624, 200	440, 600	-----
Copper-lead ore.....	25	12. 30	556	1, 400	10, 880	-----
Lead ore.....	837	794. 23	17, 661	3, 600	188, 960	-----
Zinc ore.....	542	-----	-----	-----	26, 300	126, 000
	50, 808	3, 208. 83	1, 122, 046	5, 629, 200	666, 740	126, 000
Total, lode mines.....	935, 895	315, 429. 14	1, 859, 837	7, 398, 000	4, 299, 000	218, 000
Total, placers.....	-----	2, 498. 81	571	-----	-----	-----
	935, 895	317, 927. 95	1, 860, 408	7, 398, 000	4, 299, 000	218, 000
Total, 1931.....	1, 036, 562	233, 299. 75	2, 195, 914	8, 165, 000	13, 768, 000	32, 373, 000

METALLURGIC INDUSTRY

Custom reduction plants operating in Colorado in 1932 were the lead bullion-lead copper matte smelter at Leadville, the Golden Cycle roast-amalgamation-cyanidation-flotation mill at Colorado Springs, the Chain O'Mines amalgamation-gravity concentration-selective flotation mill at Central City, the Black Swan amalgamation-flotation concentration mill between Salina and Crisman, Boulder County, and the sampling plant at Boulder. Zinc concentrates from Gilpin and Ouray Counties were shipped to Amarillo, Tex., zinc sulphide ore from Lake County was shipped to Coffeyville, Kans., and iron-copper-silver ore from the western part of the State went to Utah smelters for reduction. Of the total ore produced, 70 percent went to amalgamation and cyanidation mills with or without supplementary concentration, 22 percent went to mills equipped for concentration only, and 8 percent was shipped crude to smelters. Methods of recovery of the concentrates included straight gravity concentration (24 percent), combined gravity and flotation (62 percent), and straight flotation (14 percent).

Mine production of metals in Colorado in 1932, by methods of recovery, in terms of recovered metals

Method of recovery	Material treated	Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Ore amalgamated.....	604, 054	66, 319. 00	9, 337	-----	-----	-----
Ore, concentrates, sands, and slimes cyanided.....	313, 317	111, 522. 99	35, 064	-----	-----	-----
Concentrates smelted.....	16, 684	48, 592. 57	630, 046	1, 741, 600	2, 285, 750	92, 000
Ore smelted.....	76, 703	88, 994. 58	1, 185, 390	5, 656, 400	2, 013, 250	126, 000
Placer.....	-----	2, 498. 81	571	-----	-----	-----
	-----	317, 927. 95	1, 860, 408	7, 398, 000	4, 299, 000	218, 000
Total, 1931.....	-----	233, 299. 75	2, 195, 914	8, 165, 000	13, 768, 000	32, 373, 000

Ore treated by amalgamation, ore, concentrates, sands, and slimes treated by cyanidation, and gold and silver contained in bullion and precipitates in Colorado in 1932

Process	Material treated	Gold in bullion	Silver in bullion	Quicksilver purchased	Sodium cyanide used
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>
Amalgamation.....	604, 054	66, 319. 00	9, 337	1, 214	.....
Cyanidation.....	1 313, 317	111, 522. 99	35, 064	.....	2 347, 874

¹ Includes 24,511 tons of raw ore and concentrates treated by direct cyanidation and 288,806 tons of sands and slimes from ore and concentrates first amalgamated.

² Reduced to equivalent of 96 to 98 percent strength. Actually 695,748 pounds of cyanamid of approximately 48 to 49 percent strength.

Mine production of metals from gold and silver mills in Colorado in 1932, by counties, in terms of recovered metals

County	Ore treated	Recovered in bullion		Concentrates and recovered metal					
		Gold	Silver	Concentrates produced	Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Boulder.....	5, 670	3, 479. 24	5, 684	.....	.....	.....	.....	.....	.....
Chaffee.....	95	38. 10	432	.....	.....	.....	.....	.....	.....
Clear Creek.....	11, 919	3, 895. 37	8, 810	381	1, 453. 30	11, 050	900	35, 200	.....
Custer.....	.....	1. 16	.....	.....	.....	.....	.....	.....	.....
Eagle.....	70	236. 11	112	.....	.....	.....	.....	.....	.....
Fremont.....	50	2. 42	.....	.....	.....	.....	.....	.....	.....
Gilpin.....	280, 056	10, 169. 30	5, 167	3, 755	5, 133. 30	18, 678	41, 600	176, 700	84, 000
Gunnison.....	341	92. 89	36	.....	.....	.....	.....	.....	.....
Hinsdale.....	14	68. 79	21	.....	.....	.....	.....	.....	.....
Lake.....	388	680. 12	917	.....	.....	.....	.....	.....	.....
La Plata.....	737	1, 136. 25	3, 797	.....	.....	.....	.....	.....	.....
Larimer.....	5	2. 71	.....	.....	.....	.....	.....	.....	.....
Ouray.....	17, 754	7, 706. 50	2, 710	1, 142	3, 074. 64	30, 627	88, 400	270, 500	.....
Park.....	16, 490	38, 738. 10	7, 951	676	8, 857. 10	11, 927	44, 200	300, 100	.....
Pitkin.....	.....	2. 22	.....	.....	.....	.....	.....	.....	.....
Rio Grande.....	2	5. 08	7	.....	.....	.....	.....	.....	.....
Saguache.....	16	6. 02	.....	.....	.....	.....	.....	.....	.....
San Juan.....	27	265. 37	73	.....	.....	.....	.....	.....	.....
San Miguel.....	1, 299	1, 763. 25	893	14	76. 84	94	.....	.....	.....
Summit.....	5, 502	206. 04	135	.....	.....	.....	.....	.....	.....
Teller.....	312, 882	109, 346. 95	7, 656	.....	.....	.....	.....	.....	.....
Total, 1931.....	653, 317 615, 857	177, 841. 99 142, 129. 84	44, 401 30, 163	5, 968 4, 505	18, 595. 18 11, 807. 87	72, 376 56, 678	175, 100 178, 536	782, 500 432, 901	84, 000

Mine production of metals from concentrating mills in Colorado in 1932, by counties, in terms of recovered metals

County	Ore treated	Concentrates and recovered metal					
		Concentrates produced	Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Clear Creek.....	750	52	38. 07	127	.....	600	.....
Eagle.....	1, 786	343	214. 82	6, 272	.....	150	.....
Fremont.....	450	1	19. 76	4	.....	.....	.....
Gilpin.....	198	23	36. 30	140	100	1, 500	.....
La Plata.....	2, 303	70	320. 00	3, 166	.....	7, 000	.....
Ouray.....	1, 400	66	6. 10	12, 828	800	35, 000	8, 000
Park.....	3, 998	263	1, 305. 10	933	600	43, 000	.....
Pitkin.....	4, 100	228	.....	45, 901	.....	228, 000	.....
San Juan.....	190, 890	9, 670	28, 057. 00	488, 299	1, 565, 000	1, 188, 000	.....
Total, 1931.....	205, 875 328, 922	10, 716 48, 901	29, 997. 39 31, 719. 13	557, 670 598, 811	1, 566, 500 1, 380, 403	1, 503, 250 8, 593, 150	8, 000 26, 518, 000

GOLD, SILVER, COPPER, LEAD, AND ZINC IN COLORADO 147

Gross metal content of concentrates produced from ores mined in Colorado in 1932, by classes of concentrates

Class of concentrates	Concentrates produced (dry weight)		Gross metal content				
			Gold	Silver	Copper (wet assay)	Lead (wet assay)	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	
Dry gold.....	3,727	5,285.28	18,999	51,875	197,261	369,450	
Dry gold and silver.....	343	214.82	6,272		177		
Copper-lead.....	11,482	39,936.94	530,593	2,120,073	1,944,629	1,774,410	
Lead.....	1,002	3,157.44	74,196	3,080	391,095	149,190	
Zinc.....	130	26.00	2,343	8,248	5,319	110,639	
Total, 1931.....	16,684 53,406	48,620.48 44,081.49	632,403 737,087	2,183,276 2,171,992	2,538,481 10,313,682	2,403,689 35,337,743	

Mine production of metals from Colorado concentrates in 1932, in terms of recovered metals

BY COUNTIES

	Concentrates		Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	
Clear Creek.....	433	1,491.37	11,177	900	35,800		
Eagle.....	343	214.82	6,272		150		
Fremont.....	1	19.76	4				
Gilpin.....	3,778	5,169.60	18,818	41,700	178,200	84,000	
La Plata.....	70	320.00	3,166		7,000		
Ourray.....	1,208	3,080.74	43,455	89,200	305,500	8,000	
Park.....	939	10,162.20	12,860	44,800	343,100		
Pitkin.....	228	24	45,901		228,000		
San Juan.....	9,670	28,057.00	488,299	1,565,000	1,188,000		
San Miguel.....	14	76.84	94				
Total, 1931.....	16,684 53,406	48,592.57 43,527.00	630,046 655,489	1,741,600 1,558,939	2,285,750 9,026,051	92,000 26,518,000	

BY CLASSES OF CONCENTRATES

Dry gold.....	3,727	5,283.37	18,985	41,600	177,300		
Dry gold and silver.....	343	214.82	6,272		150		
Copper-lead.....	11,482	39,936.94	530,593	1,697,600	1,757,200		
Lead.....	1,002	3,157.44	74,196	2,400	351,100		
Total to copper and lead plants.....	16,554	48,592.57	630,046	1,741,600	2,285,750		
Zinc.....	130					92,000	
	16,684	48,592.57	630,046	1,741,600	2,285,750	92,000	

Gross metal content of Colorado crude ore shipped to smelters in 1932, by classes of ore

Class of ore	Ore		Gross metal content				
			Gold	Silver	Copper	Lead	Zinc
			<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Dry gold.....	<i>Short tons</i> 25,257	<i>Percent</i> 32.93	85,574.95	58,551	30,641	1,460,288	
Dry gold and silver.....	135	.18	199.00	3,726	845	5,546	
Dry silver.....	503	.65	11.82	1,067	2,023	29,852	
Copper.....	49,404	64.41	2,402.30	1,103,829	6,180,446	806,131	977,700
Copper-lead.....	25	.03	12.30	556	1,451	11,838	
Lead.....	837	1.09	794.23	17,661	4,572	212,688	8,140
Zinc.....	542	.71				37,908	157,048
Total, 1931.....	76,703 91,783	100.00	88,994.60 46,895.52	1,185,390 1,539,122	6,219,978 6,893,823	2,564,251 6,538,057	2,427,788 9,160,654

Mine production of metals from Colorado crude ore shipped to smelters in 1932, in terms of recovered metals

BY COUNTIES

	Ore	Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Boulder.....	53	239.49	3,997		9,000	
Chaffee.....	38	39.88	295		6,000	
Clear Creek.....	290	369.50	8,130	5,100	39,200	
Custer.....	1		14			
Eagle.....	49,382	2,446.20	1,104,435	5,620,000	440,850	
Fremont.....	1	.80				
Gilpin.....	161	323.81	898	4,300	10,800	
Gunnison.....	4	4.20	17			
Hinsdale.....	6	.34	78		2,000	
Lake.....	3,963	5,529.92	15,835	6,000	152,000	126,000
La Plata.....	1	10.00	5			
Ouray.....	418	1,683.98	1,615	800	8,500	
Park.....	21,669	76,682.02	42,377	15,500	1,271,900	
Pitkin.....	38	86.50	92			
Saguache.....	28	52.61	32			
San Juan.....	134	45.60	2,823	3,000	51,000	
San Miguel.....	496	1,440.80	3,747	1,000	21,000	
Summit.....	20	38.93	1,000	700	1,000	
Total, 1931.....	76,703 91,783	88,994.58 46,598.69	1,185,390 1,510,072	5,656,400 6,606,061	2,013,250 4,741,949	126,000 5,855,000

BY CLASSES OF ORE

Dry gold.....	25,257	85,574.93	58,551	24,800	1,314,500	
Dry gold and silver.....	135	199.00	3,726	600	5,010	
Dry silver.....	503	11.82	1,067	1,800	27,000	
Copper.....	49,404	2,402.30	1,103,829	5,624,200	440,600	
Copper-lead.....	25	12.30	556	1,400	10,850	
Lead.....	837	794.23	17,661	3,600	188,960	
Total to copper and lead plants.....	76,161 542	88,994.58	1,185,390	5,656,400	1,986,950 26,300	126,000
Zinc.....	76,703	88,994.58	1,185,390	5,656,400	2,013,250	126,000

REVIEW BY COUNTIES AND DISTRICTS

Mine production of gold, silver, copper, lead, and zinc in Colorado in 1932, by counties and districts, in terms of recovered metals

County and district	Number of mines producing		Ore sold or treated	Gold			Silver			Copper	Lead	Zinc	Total value	
	Lode	Placer		Short tons	Lode	Placer	Total	Lode	Placer					Total
					Fine ounces	Fine ounces	Fine ounces	Fine ounces	Fine ounces					Fine ounces
Adams County.....		4			11.90	11.90			4			\$247		
Arapahoe County.....		1			1.55	1.55						32		
Boulder County:														
Central.....	20	3	846	473.98	4.40	478.38	954		954			10,157		
Gold Hill.....	45	2	1,267	691.46	15.82	697.28	1,195	4	1,199			14,752		
Grand Island.....	8	1	58	301.81	4.21	306.02	4,057		4,057	7,000		7,680		
Magnolia.....	18		421	257.21		257.21	53		53			5,332		
Sugar Loaf.....	31	4	2,863	1,682.05	122.39	1,804.44	3,057	10	3,067			38,166		
Ward.....	26		268	322.27		322.27	365		365	2,000		6,825		
Chaffee County:														
Browns Canyon.....		2			1.84	1.84						38		
Chalk Creek.....	2		83	50.02		50.02	642		642	4,000		1,335		
Free Gold.....		1			3.48	3.48						72		
Granite ¹	3	14	27	9.29	66.81	76.10	14	14	28	600		1,599		
La Plata.....	1		1	2.08		2.08						43		
Monarch.....	1			.77		.77						16		
Trout Creek.....	3		11	8.90		8.90	71		71	1,400		246		
Turret.....	2		11	6.92		6.92						143		
Clear Creek County:														
Alice.....	1		4	1.79		1.79						37		
Argentine.....	1		18	7.40		7.40	145		145	600	1,200	268		
Empire.....	10		526	272.45		272.45	319		319	300		5,731		
Griffith.....	3		769	64.68		64.68	4,213		4,213	4,600		2,663		
Idaho Springs.....	29	37	11,479	5,366.63	57.18	5,366.63	22,688	7	22,695	5,400	60,000	119,478		
Montana.....	5		118	54.42		54.42	596		596	5,900		1,470		
Trall.....	3		45	46.05		46.05	156		156	3,000		1,086		
Costilla County.....		1			7.64	7.64						158		
Custer County:														
Hardscrabble ²	1		1				14		14			4		
Lake Creek.....	1			1.16		1.16						24		
Denver County.....		12			31.25	31.25		7	7			648		
Douglas County.....		3			34.15	34.15		7	7			708		
Eagle County:														
Eagle.....		1			2.08	2.08						43		
Mount Egley.....		1			2.42	2.42						50		
Red Cliff.....	6		51,238	2,897.13		2,897.13	1,110,819		1,110,819	5,620,000	441,000	740,430		

¹ The Granite District lies in both Chaffee and Lake Counties.

² The Hardscrabble District lies in both Custer and Fremont Counties.

Mine production of gold, silver, copper, lead, and zinc in Colorado in 1932, by counties and districts, in terms of recovered metals—Continued

County and district	Number of mines producing		Ore sold or treated	Gold			Silver			Copper	Lead	Zinc	Total value
	Lode	Placer		Lode	Placer	Total	Lode	Placer	Total				
			Short tons	Fine ounces	Fine ounces 27.62	Fine ounces 27.62	Fine ounces	Fine ounces	Fine ounces	Pounds	Pounds	Pounds	
Elbert County.....		3											\$571
Fremont County:													
Arkansas River.....		2			8.08	8.08							167
Hardscrabble ²	2		501	22.98		22.98		4					476
Gilpin County:									4				
Southern.....	47	21	278,905	15,315.09	146.82	15,461.91	24,670	50	24,720	46,000	189,000	84,000	337,685
Northern.....	7	45	1,510	347.62	69.71	417.33	213	10	223				8,690
Grand County.....		1			1.79	1.79							37
Gunnison County:													
Box Canyon.....	1		1	2.27		2.27							47
Cochetopa.....	1		150	47.94		47.94	10		10				994
Domingo.....	1	2	3	1.06	2.32	3.38							70
Elk Mountain.....		1			1.26	1.26		1	1				26
Gold Brick.....	3		184	42.09		42.09	39		39				881
Taylor Park.....	2	5	7	3.73	10.74	14.47	4	2	6				301
Tin Cup.....		1			2.71	2.71							56
West Brush.....		1			1.35	1.35		1	1				28
Hinsdale County:													
Galena.....	1		6	34		34	78		78		2,000		89
Lake City.....	1		14	68.79		68.79	21		21				1,428
Huerfano County.....		1			1.79	1.79							37
Jackson County.....		1			3.24	3.24							67
Jefferson County.....		5			11.61	11.61							240
Lake County:													
California (Leadville).....	15	9	4,339	6,181.55	51.62	6,233.17	16,738	11	16,749	6,000	152,000	126,000	142,202
Granite ¹	1	1	5	20.22	1.69	21.91	7		7				455
Twin Lakes.....	2	1	7	8.27	10.69	18.96	7	3	10				395
La Plata County: California.....	12	2	3,041	1,466.25	2.27	1,468.52	6,968		6,968		7,000		32,532
Larimer County: Manhattan.....	2		5	2.71		2.71							56
Mesa County.....		1			1.74	1.74							36
Moffat County:													
Fourmile (Timberlake).....		11			46.20	46.20		2	2				956
Great Divide.....		1			4.50	4.50							93
Round Bottom.....		1			9.72	9.72		2	2				201
Montezuma County.....		1			1.89	1.89							39
Montrose County: Naturita.....		18			99.70	99.70		28	28				2,069

Ouray County:															
Red Mountain.....	2	2	18	14.80	4.35	19.15	60		60		3,000				503
Ridgway.....		1			2.71	2.71									56
Sniefels.....	7		17,966	11,703.22		11,703.22	34,415		34,415		88,700	276,000			265,500
Uncompahgre.....	3		1,588	753.29		753.29	13,305		13,305		1,300	35,000	8,000		20,694
Park County:															
Alma.....		5			37.30	37.30			7	7					773
Beaver Creek.....	1	3	2	3.77	11.08	14.85			3	7					309
Buckskin.....	3	3	68	20.51	.92	21.43	4			39					454
Consolidated Montgomery.....	2	1	299	105.80		108.07	14			14					2,238
Fairplay.....		23			63.27	63.27			15	15					1,312
Horseshoe.....	1		4	12.00		12.00			28	28		300			265
Mosquito.....	11		41,784	125,440.24		125,440.24	63,103		63,103		60,300	1,614,700			2,663,115
Tarryall.....		3			52.54	52.54			7	7					1,088
Pitkin County:															
Independence.....	1		38	88.72		88.72			92	92					1,860
Roaring Fork.....	1	1	4,100	.24	2.13	2.37	45,901		45,901			228,000			19,833
Rio Grande County: Summitville.....	2	1	2	5.08	3.92	9.00	7		7						188
Routt County: Columbine.....		8			21.72	21.72			14	14					453
Saguache County:															
Crestone.....	3		17	14.22		14.22									294
Karber Creek.....	1		4	3.00		3.00	21		21						68
Vulcan.....	1		23	41.41		41.41	11		11						859
San Juan County:															
Animas.....	8		191,023	28,275.19		28,275.19	491,177		491,177		1,568,000	1,239,000			858,966
Eureka.....	1		28	92.78		92.78	18		18						1,923
San Miguel County:															
Iron Springs.....	7	2	708	284.98	3.10	288.08	170		170						6,003
Lower San Miguel.....		7			20.85	20.85			4	4					432
Mount Wilson.....	3		12	25.06		25.06	11		11						521
Upper San Miguel.....	15	1	1,075	2,970.85	10.88	2,981.73	4,553		7	4,560	1,000	21,000			63,617
Summit County:															
Breckenridge.....	6	48	5,517	242.26	1,329.20	1,571.46	1,131	340	1,471.46	700	1,000				32,974
Ten Mile.....	1	1	5	2.71	26.85	29.56	4		4						613
Teller County: Cripple Creek.....	80	3	312,882	109,346.95	19.54	109,366.49	7,656		7	7,663					2,262,967
Total, Colorado.....	478	335	935,895	315,429.14	2,498.81	317,927.95	1,859,837	571	1,860,408	7,398,000	4,299,000	218,000			7,698,373

¹ The Granite District lies in both Chaffee and Lake Counties.

² The Hardscrabble District lies in both Custer and Fremont Counties.

ADAMS COUNTY

A placer machine demonstrating on the dump of the Carlson gravel pit on Clear Creek handled 400 tons of gravel and recovered 4.11 fine ounces of gold and 2 ounces of silver in 1932, and sluice boxes placed below the waste flumes of the Brannan gravel plant on Clear Creek yielded 3.60 fine ounces of gold and 2 ounces of silver; 2 other placer operations each yielded a small quantity of gold. From 1922, when sluice boxes first were placed below the Brannan and other gravel and sand plants, to 1932, inclusive, 1,116.54 fine ounces of gold and 165 ounces of silver have been recovered.

ARAPAHOE COUNTY

A small operation in Arapahoe County in 1932 yielded 1.61 crude ounces of placer gold 0.971 fine in gold and 0.019 in silver.

BOULDER COUNTY

Small lots of ore mined and concentrates produced in Boulder County in 1932 were sampled and bought by the Boulder Ore Sampling Works at Boulder, which reshipped nearly all the ore to the Golden Cycle mill. Crude ore and dump material from various properties totaling 2,636 tons were purchased and treated in 1932 by the Equity Reduction Co., which operated the Black Swan mill between Salina and Crisman. This mill was remodeled in 1931, and additional machinery was installed in 1932. The new mill equipment includes a rag plant upon which any free gold was caught; the gold was amalgamated and retorted. The flow was then diverted to flotation cells, and the concentrates were shipped to the Golden Cycle mill.

Central District (Jamestown).—Of the total ore mined in the Central District in 1932 the Wano group produced 605 tons and the Golden Age dump 121 tons; the ore from both went to the Golden Cycle mill. The remainder of the district output was shipped from various properties in small lots ranging from less than one half ton to 21 tons. Placer gold was recovered by panning and sluicing on James and Left Hand Creeks.

Gold Hill District.—The principal producing mines in the Gold Hill District in 1932 were the Atlanta, Big Horn, Emancipation, Fairfax, Ingram, Lucky Star, Mack, Myrtle, St. Joe, Scotia, and White Crow. All production was classed as gold or gold-silver ore. Slightly more than half the ore was milled at the Black Swan mill; the bulk of the remainder was shipped either direct or through the Boulder Ore Sampling Works to the Golden Cycle mill. Operators at the Greenhorn and McKnight placers produced gold by sluicing and panning.

Grand Island District (Cardinal, Caribou, Eldora, and Nederland).—Forty-three tons of lead ore from the Potosi group at Caribou yielded most of the gold and silver and all the lead produced in the Grand Island District in 1932. The Beaver Creek placer produced 4.55 ounces of bullion 0.928 fine in gold and 0.068 in silver.

Magnolia District.—Mines producing 1 car or more of ore in the Magnolia District in 1932 were the Cash, Hereafter, KeKeOnga, Keystone, and Mountain Lion.

Sugar Loaf District.—Ores from the Sugar Loaf District in 1932 were all classed as gold or gold-silver and were sold to the Black Swan mill, the Boulder Ore Sampling Works, and the Golden Cycle mill. Principal producing properties were the Dime, Logan-Croesus group, Milan, Nancy-Gray Copper group, Nelson, Sparkling Jewel, Tambourine, Victory, and Wood Mountain group. A steam shovel and sluices handled 5,000 cubic yards of stream gravel at the Colby and Giggey placers and recovered 128.72 ounces of placer gold; the bullion when melted at the Denver Mint weighed 123.74 ounces and was 0.922 fine in gold and 0.067 in silver. The operation proved to be unsatisfactory and was abandoned. Sluicing and panning also yielded a small quantity of placer gold.

Ward District.—Most of the output of the Ward District in 1932 consisted of small lots of ore sold to the Boulder Ore Sampling Works. Mines producing 1 carload or more were the Dew Drop, Humboldt, and Little Ida. Lead was contained in 10 tons of ore from the Rio Tinto mine.

CHAFFEE COUNTY

Browns Canyon District (Salida).—A small quantity of placer gold was recovered by sluicing and panning in the Browns Canyon District in 1932.

Chalk Creek District (Romley, St. Elmo).—Production of metals in the Chalk Creek District in 1932, all from lode mining, came from 53 tons of hand-sorted gold-silver ore shipped to the Golden Cycle mill and 3 test lots of lead ore aggregating 10 tons shipped to the Leadville smelter from the Mary Murphy mine and 7 tons of gold ore and 13 tons of lead ore shipped to the same plants, respectively, from the St. Elmo Queen.

Free Gold District (1 mile north of Buena Vista).—A placer mine along the bed of the Arkansas River, worked by a small sluice box, yielded gold bullion which was sold to the Denver Mint in 1932.

Granite District.—Production from lode mines in the Granite District (Chaffee County) in 1932 consisted of three lots of ore, of which 26 tons were classified as gold ore and 1 ton as lead ore. Placer mining was done by sluicing and panning on the Arkansas River, hydraulicking and drag-line excavator in bench gravel on Lake Creek 3 miles from Granite, and drift mining to test the average value of the Old Channel placer ground. The general merchandise store at Granite exchanged merchandise for 28.17 ounces of the gold from these operations; the rest was shipped to the Denver Mint direct.

La Plata District.—One ton of gold ore was shipped from the La Plata District to the Leadville smelter in 1932.

Trout Creek District.—Eight tons of lead ore and 3 tons of gold ore were shipped to the Leadville smelter from the Trout Creek District in 1932.

Turret District.—Six tons of gold ore from the Gold Crown mine and 5 tons from the Monongahela were shipped to the Golden Cycle mill in 1932.

CLEAR CREEK COUNTY

Alice District (Yankee, Lincoln).—At the Reynolds stamp mill 4 tons of ore from the Reynolds mine were treated in 1932 and yielded amalgamation bullion which was sold to the Denver Mint.

Argentine District.—The only production from mines in the Argentine District in 1932 was 18 tons of gold-silver ore shipped to the Leadville smelter by the Santiago Mines Co.

Empire District.—The output of mines in the Empire District in 1932 was chiefly gold ore. A small 3-stamp mill on the Golden Eagle property treated 270 tons and obtained 23.31 ounces of bullion 0.672 fine in gold and 0.306 in silver. Eight tons of ore were sold to the Boulder Ore Sampling Works, 246 tons to the Golden Cycle mill, and 2 tons of lead ore to the Leadville smelter. Producing mines were the Atlantic-Rifle group, Badger, Gold Dirt, Gold Fissure, Golden Eagle, Mint, N & B, O. S. Storrs, Puzzler, and Silver Mountain.

Griffith District (Georgetown-Silver Plume).—The Crown Point Gold Mining Co., operating the Pulaski mine, rented a 30-ton flotation mill 2 miles from the mine for experimental work and treated approximately 750 tons of ore by flotation during a run of 7 weeks; the resulting gold-silver-lead concentrates were shipped to the Leadville smelter. Other producers in 1932 were the Commonwealth Tunnel Transportation Co. property and the Eva D mine.

Idaho Springs District.—The Mattie group of mines was the largest producer of gold, silver, and lead in Clear Creek County in 1932. The Mattie amalgamation-concentration mill ran 200 days and treated a daily average of 47 tons. Other important producing mines in the Idaho Springs District were the Black Eagle, Lincoln, Summit, and West Gold. The total gross calculated value of the district output of gold, silver, copper, and lead was \$119,478 in 1932 compared with \$74,126 in 1931. Placer mining was done by panning, rocking, and sluicing on the bars of Clear Creek.

Montana District (Lawson, Dumont).—Producing properties in the Montana District in 1932 were the Albro No. 155, Donaldson mill site, Pioneer, Princess of India group, and Star of the West.

Trail Creek District (Lamartine, Freeland).—The Freeland, New Era, and Empress were the only producing mines in the Trail Creek District in 1932.

COSTILLA COUNTY

A prospector in the Grayback District in 1932 obtained 8.50 ounces of placer gold 0.898 fine in gold and 0.093 in silver.

CUSTER COUNTY

Hardscrabble District (Westcliffe, Silver Cliff).—One ton of ore containing 14 ounces of silver and a small quantity of copper and lead was shipped to the Leadville smelter from the Hardscrabble District in 1932.

Lake Creek District.—Rebuilding of the flotation mill destroyed by fire late in 1931 was begun in 1932 at the Big Horn mine. A shipment of 307 pounds of gold ore was made from this mine to the Golden Cycle mill in 1932.

DENVER COUNTY

Compared with 1931 only a few people were engaged in panning and rocking within the bounds of the city and county of Denver in 1932. Some were thus engaged during 1932 on the Platte River and some of its tributaries, between its junction with Cherry Creek (in

the heart of the city of Denver) and Englewood, Arapahoe County, and east and south on Cherry Creek in Denver, Arapahoe, Douglas, and Elbert Counties. Those who recovered any gold in these counties naturally gravitated to Denver to sell it to assayers, jewelers, dental-supply concerns, and the Denver Mint. The aggregate of the production of placer gold in Arapahoe, Denver, Douglas, and Elbert Counties is correct, but the separation as to counties is naturally partly estimated. The estimate for Denver County in 1932 is 31.25 fine ounces of gold and 7 ounces of silver.

DOUGLAS COUNTY

Douglas County is credited with the production of 34.15 fine ounces of placer gold and 7 ounces of silver in 1932, all marketed through assayers and dental-supply concerns.

EAGLE COUNTY

Eagle District.—An operator working on an experimental process for handling gravel containing fine placer gold recovered bullion in 1932 which when melted at the Denver Mint weighed 3.02 ounces and was 0.696 fine in gold and 0.131 in silver.

Mount Egley District.—Sluicing of a gravel deposit on the Norgaard ranch in the Mount Egley District in 1932 yielded placer bullion which was sold to the Denver Mint.

Red Cliff (Battle Mountain) District.—The 600-ton flotation mill of the Empire Zinc Co. (New Jersey Zinc Co.) at Gilman was not operated in 1932. Crude iron-silver-copper ore from the Eagle mine was shipped to the Leadville (Colo.) smelter and to the Garfield (Utah) smelter. At the Champion mine, where operations were begun in April 1932, 1,786 tons of gold-silver ore from development were treated by a small 2-cell jig, and 343 tons of gold-silver concentrates were shipped to the Leadville smelter. A group of mines, including the Potvin, Copper King, and Pine Martin, produced 29 tons of gold-silver ore averaging 3.37 ounces of gold and 16 ounces of silver per ton. The Ground Hog mine produced 19 tons of gold-silver ore, which was sold to the Leadville smelter. The Tip Top mine produced 90 tons of gold-silver ore averaging 4.20 ounces of gold and 5 ounces of silver per ton. One ton of gold-silver ore was shipped from the Alligator mine to the Leadville smelter.

ELBERT COUNTY

Gold produced in Elbert County in 1932 came from placers on Ronk Creek and on the Crail and Tanner ranches.

EL PASO COUNTY

The Golden Cycle mill¹ at Colorado Springs, El Paso County, treats all the gold sulphotelluride ores containing 0.1125 ounce or more of gold from the Cripple Creek District, Teller County. When built in 1907 the mill was a 1,200-ton roast-amalgamation-cyanidation mill. Since 1927 a supplementary installation comprising crushers, a ball mill, and a Dorr classifier has been used to treat in an all-sliming cyanidation circuit, without preliminary roasting, gold pyrite ores and concentrates, siliceous silver ores, and other miscellaneous ores.

¹ Harner, L. S., *Milling Methods and Costs at the Golden Cycle Mill, Colorado Springs, Colo.*: Inf. Circ. 6739, Bureau of Mines, 1933, 18 pp.

In 1929 crushers, ball mills, and Fahrenwald flotation machines were installed to treat any ores offered, including zincky ores. This addition to the plant began operating in November 1929, and zincky ores were purchased until November 1930. In 1932 the flotation plant was operated chiefly on low-grade sulphotelluride ores from Cripple Creek but also floated out graphitic or carbonaceous gangue material with the lead and copper from ore from the American and London mines of the Mosquito District, Park County, to make high-grade gold-[silver-lead-copper] concentrates to eliminate carbon and copper (cyanicides). The bulk of the ore received was from the Cripple Creek District and, with all the concentrates produced from Cripple Creek ores, went through the regular process of roasting, amalgamation, and cyanidation. Ore from other counties, which did not need flotation to remove cyanicides (such as carbon and copper), was treated by fine grinding and cyanidation. The tailings from all operations (except Cripple Creek ore concentrated) were cyanided.

FREMONT COUNTY

Arkansas River District.—Sluicing operations along the Arkansas River yielded placer bullion which was sold to the Denver Mint in 1932.

Canon City smelter.—The Empire Zinc Co. (New Jersey Zinc Co.) oxide plant at Canon City closed down early in 1932 and remained idle throughout the year.

Hardscrabble District.—A clean-up of an old mill location by concentrating 500 tons of material with a special machine yielded 1 ton of gold concentrate which was shipped to the Leadville smelter in 1932; one other shipment of 1 ton of gold ore was made to the smelter.

GILPIN COUNTY

Southern districts (Black Hawk, Central City, Nevadaville, Russell Gulch).—The principal producer in Gilpin County in 1932 was the Chain O'Mines, Inc., which operated "The Patch" by shrinkage stoping and glory-holing. The company amalgamation-gravity concentration-selective flotation mill, which also handled ore and dump material from various other properties in the southern districts, was operated approximately 330 days during the year at an average daily rate of 800 tons. The mill has a reported capacity of 1,500 tons per 24 hours. The flotation equipment was not used during 1932 except part time on tailings as a check. Amalgamation bullion was shipped direct to the Denver Mint. Copper-[zinc]-lead-silver-gold concentrates were shipped to the Leadville smelter and zinc concentrates to the American Smelting & Refining Co. natural-gas retort plant at Amarillo, Tex. Other lode producers worthy of mention were the Old Town group, Perrin, Pittsburg, Saratoga, and West Notaway.

An Ainlay centrifugal bowl installation, using a gasoline engine for power, at the Sparks and Nichols placer operated from June 13 to August 7 and handled approximately 360 cubic yards of stream gravel. The operator makes the following statement in his report for 1932:

Operations were eminently unsuccessful due to lack of water and inability to handle large amounts of gravel. The gulch has been worked several times and only in spots will run more than \$0.25 per yard. Pick and shovel excavation is not feasible except from May 15 to July 1.

Other placer mines in the southern districts were worked by panning and sluicing.

Northern districts.—Producing lode-mine properties in the northern districts in 1932 were the Mackey, Mann, Mineral Mines, Newport, and Perigo and the Reform Mining Co. property. A small hydraulic installation was used for recovering placer gold at the Fontleroy placer; other small placers were worked by sluicing and panning.

GRAND COUNTY

A small placer on the Blue River in Grand County yielded 2.29 ounces of bullion 0.771 fine in gold and 0.221 in silver in 1932.

GUNNISON COUNTY

Box Canyon District.—The only metal output in the Box Canyon District in 1932 was 2.27 fine ounces of gold obtained by the owner of the Nettetted Gem mine by hand-working samples of ore.

Cochetopa (Parlin) District.—All ore produced in the Cochetopa District in 1932 came from the Maple Leaf mine and was classed as gold ore. Recovery of the gold was made at the mine by amalgamation in a plant equipped with a ball mill and plates.

Domingo (Goose Creek, White Earth) District (Madera, Powderhorn, Spencer, Vulcan).—A test lot of gold ore mined near Powderhorn in 1932 yielded 1.06 fine ounces of gold. Small panning and sluicing operations produced the placer gold shipped.

Elk Mountain District.—A placer worked by a drag-line excavator in Washington Gulch yielded 1.26 ounces of gold and 1 ounce of silver in 1932.

Gold Brick District (Ohio).—The principal producer in the Gold Brick District in 1932 was the Carter Mines Co. which mined 160 tons of gold ore and shipped 52.74 ounces of amalgamation bullion 0.577 fine in gold and 0.388 in silver. The mill is equipped for amalgamation and concentration, but the 3 tons of concentrates produced were not shipped during the year. Four tons of gold ore were shipped from the Dodson mine to the Leadville smelter. Amalgamation bullion was sold to the Denver Mint from one other property.

Taylor Park District.—Two small retorts of gold bullion from lode mining in the Taylor Park District were sold to the Denver Mint in 1932. Placer gold was produced by various placer miners from the panning and sluicing of old tailings and stream gravel.

Tin Cup District.—A small quantity of placer gold was produced at the Gold Nugget placer in 1932.

West Brush District.—A placer miner by sluicing at the Hayden claim recovered a small quantity of gold in 1932 which was sold to a jewelry company at Grand Junction.

HINSDALE COUNTY

Galena District.—Six tons of lead ore were shipped from the Galena District to the Leadville smelter in 1932.

Lake City District.—The Golden Wonder mine was the only producer in the Lake City District in 1932; the output was classed as gold ore and was sold to the Golden Cycle mill at Colorado Springs.

HUERFANO COUNTY

The only production from Huerfano County in 1932 was 1.79 fine ounces of gold reported to have been mined on Placer Creek.

JACKSON COUNTY

Sluicing and panning operations on a placer in the Independence Mountain District in 1932 yielded 3.47 ounces of bullion 0.939 fine in gold and 0.059 in silver.

JEFFERSON COUNTY

Small sluicing and panning operations on Clear Creek in 1932 yielded placer bullion which was sold to the Denver Mint.

LAKE COUNTY

LEADVILLE DISTRICT

The Leadville District in 1932 produced 4,339 tons of ore yielding, in terms of recovered metals, gold, silver, copper, lead, and zinc having a total gross calculated value of \$141,222 compared with 24,888 tons of ore and \$457,643 in 1931. Properties producing more than 1 carload each were the American smelter dump, Dennis No. 2, Dolly B, Elva Elma, Ibex, Iron-Silver Mining Co. group, Lilian, New Monarch, St. Louis Tunnel, Tribune, and Venir. Active placer mines were the Ball, Buckeye, Fortune, Harlan, Hector, Placer Survey No. 158, Thomas Starr, Wells & Moyer, and Zion. The Leadville smelter was idle in January and October; it was run as a lead-bullion plant in February and March, as a copper-matte smelter from April through August, and again as a lead furnace in September, November, and December.

OTHER DISTRICTS

Granite District.—The Belle of Granite, producing gold ore, was the only lode mine active in the Granite District (Lake County) in 1932. An experimental placer machine in the Arkansas River above Granite produced a small quantity of placer gold.

Tenmile (Climax, Fremont Pass) District.—In 1932 the Climax Molybdenum Co. mill at Climax on Fremont Pass treated 354,030 tons of molybdenum ore yielding 1,797 tons of molybdenum sulphide concentrates containing 1,913,395 pounds of elemental molybdenum.

Molybdenum production at the Climax mill in Colorado, 1924-32

	Elemental molybdenum (pounds)		Elemental molybdenum (pounds)
1924 (idle first 7 months; operated last 5 months) ²	156, 935	1928	2, 957, 845
1925	821, 757	1929	3, 529, 295
1926	1, 057, 367	1930	3, 083, 000
1927	1, 858, 228	1931	2, 644, 399
		1932	1, 913, 395

Twin Lakes District.—Lode mines shipping from the Twin Lakes District in 1932 were the Doodle Bug Mining Co. property, producing 2 tons, and the Roebuff mine, producing 5 tons—all gold ore. Placer gold was produced by lessees sluicing on the Derry Ranch placers.

² Idle from April 1919 to Aug. 1, 1924.

LA PLATA COUNTY

California (or La Plata) District (Hesperus, La Plata).—The principal producing properties in the California District in 1932 were the Bessie G, Golden Rule, Gold King group, Jumbo Mine Co. property, Last Chance, and May Day. Two placer miners recovered a small quantity of placer gold by sluicing.

LARIMER COUNTY

Manhattan District.—Two tons of gold ore were shipped to the Golden Cycle mill at Colorado Springs and 3 tons to the Boulder Ore Sampling Works from the Manhattan District in 1932.

MESA COUNTY

A prospector from Mesa County deposited 1.83 ounces of placer gold at the Denver Mint in 1932. The bullion was 0.951 fine in gold and 0.041 in silver.

MOFFAT COUNTY

Fourmile (or Timberlake) District.—Six weeks were spent in 1932 by the Wyoming Placer Mining Co. in setting up an experimental centrifugal bowl gold-saving machine on Timberlake Creek to work bench gravel containing flour gold. The machine operated 31 days and recovered bullion yielding 6.23 fine ounces of gold when deposited at the Denver Mint. The remainder of the gold produced in Moffat County was recovered by panning, rocking, and sluicing.

MONTEZUMA COUNTY

A small sluicing operation on the East Mancos River in the La Plata Mountains yielded placer gold in 1932 which was marketed through the First National Bank of Mancos.

MONTROSE COUNTY

Sluices on stream and bench gravel on the San Miguel River below Naturita recovered all the gold and silver produced in Montrose County in 1932.

OURAY COUNTY

Red Mountain District.—A shipment of 18 tons of lead ore was made in 1932 from the Magnet mine to the Banner American mill 2½ miles north of Ouray, and gold bullion from the Black Jack mine was sold through a bank at Ouray. Two placers yielded a small quantity of gold.

Ridgway District.—Placer gold was recovered in 1932 by sluicing at the Dallas placer on the Uncompahgre River.

Sneffels District.—The King Lease continued operation on the upper workings of the Camp Bird mine in 1932 and operated both the mine and mill 366 days. Other producers in the Sneffels District—all small—were the Alma, Atlas (mill clean-up), Governor, Hidden Treasure, Revenue Tunnel (mill-site clean-up), and Trust Ruby.

Uncompahgre District (Ouray).—Producers in the Uncompahgre District in 1932 were the Pony Express, Valley View Consolidated Gold Mines Co. property, and Wanakah group.

PARK COUNTY

Alma District.—Placer mines on the Platte River east of the town of Alma were worked by sluices during 1932.

Beaver Creek District.—A 2-ton lot of gold ore was shipped from the Beaver Creek District to the Golden Cycle mill at Colorado Springs in 1932. A small production was made from placer mines on Beaver Creek.

Buckskin District (Alma).—Shipments of gold ore were made in 1932 from the Excelsior mine (2 tons), Great West (40 tons), and Phillips (26 tons). Placer miners recovered a small quantity of gold by sluicing and panning.

Consolidated Montgomery District (Alma).—The Atlantic & Pacific mine produced 45 tons and the Magnolia 254 tons of gold ore in 1932. A sluicing operation on Lewistown Dredging Co. ground yielded 2.27 fine ounces of placer gold.

Fairplay District.—Small panning and sluicing operations by individual miners on the Beaver Creek, Fairplay, Snowstorm, and Van Eck placers yielded the gold and silver produced in the Fairplay District in 1932.

Horseshoe District.—One lot of gold-silver-lead ore was shipped to the Leadville smelter from the Horseshoe District in 1932.

Mosquito District (Alma).—The Mosquito mining district was the most important gold-producing district in Colorado in 1932. The largest producing mines in the district were the American, London proper, and London Extension. Ore from these mines was shipped crude to the Golden Cycle mill and to the Leadville smelter. Other producers of more than 1 car of ore each were the Hock Hocking, Orphan Boy, "North London", and West London.

Tarryall District.—Placer miners, one of whom employed teams and scrapers, produced the gold and silver shipped from the Tarryall District in 1932.

PITKIN COUNTY

Independence District.—The metal output of the Independence District in 1932 came from gold ore mined at the Myrtle mine.

Roaring Fork District (Aspen).—The lode-mine output of the Roaring Fork District in 1932 consisted of silver-lead ore from the Midnight mine milled at the Midnight 50-ton flotation mill; the resulting lead-silver concentrates were shipped to the Leadville smelter. A placer miner from Aspen deposited a small quantity of placer gold at the Denver Mint.

RIO GRANDE COUNTY

Summitville District.—A small production of gold and silver was made in the Summitville District in 1932 from 2 lode mines, each yielding 1 ton of ore, and from 1 placer operation.

ROUTT COUNTY

The output of gold and silver from Routt County in 1932 was the result of sluicing and panning on various small placers and of hydraulic mining on the Nova Scotia placer.

SAGUACHE COUNTY

Crestone District.—Five tons of gold ore from the Empire mine and 11 tons from the Reed mine in the Crestone District were shipped to the Golden Cycle mill in 1932. One ton of gold ore was shipped from another property to the Leadville smelter.

Kerber Creek District (Bonanza).—The only shipment from the Kerber Creek District in 1932 was one lot of gold ore sent to the Leadville smelter by the Magnolia Mining Co.

Vulcan District.—From the Continental mine 1 ton of gold ore was shipped to the Leadville smelter and 22 tons were shipped to the Garfield (Utah) smelter in 1932.

SAN JUAN COUNTY

Animas District (Silverton).—The bulk of the output of San Juan County in 1932 came from the Shenandoah-Dives mine which produced 190,890 tons of gold-silver ore yielding 9,670 tons of gold-silver-copper-lead-[zinc] concentrates; the ore was milled at the company 550-ton combined flotation and gravity-concentration mill. The zinc was not saved at the Leadville smelter and seldom reached the penalty point. Only two other mines in the Animas District—the North Star-Sultan and San Juan Queen—produced more than one half ton of ore.

Operating costs at the Shenandoah-Dives mine, Silverton, Colo., 1930-32

Item	1930	1931	1932
Ore milled.....short tons.....	100,141	170,795	190,890
Cost of development and exploration per ton.....	\$0.4900	\$0.5443	\$0.2528
Operating expense per ton:			
Mine (including development and exploration).....	\$2.6900	\$2.1467	\$1.5640
Mill.....	1.1000	.9041	.7934
Tramway.....	.1700	.1313	.1021
General.....	.2600	.1215	.0975
Total.....	4.2200	3.3086	2.5570

Eureka District (Eureka, Silverton).—The only production from the Eureka District in 1932 came from a clean-up of old mill tailings at the Gold King group.

SAN MIGUEL COUNTY

Iron Springs District (Ophir).—At the Boot Jack mine 700 tons of gold ore were mined and treated by amalgamation and concentration and yielded the bulk of the metals produced in the Iron Springs District in 1932. The only other tonnage was 8 tons of gold ore from the Hattie mine, but some gold bullion from specimen ore from various properties was also sold. Placer miners recovered a small quantity of gold bullion.

Lower San Miguel District (Sawpit, Vanadium).—Individual placer miners sluicing gravel on San Miguel River recovered the gold and silver produced in the Lower San Miguel District in 1932.

Mount Wilson District.—Specimen ore from the Charter Oak mine and Soul's lease and 12 tons of material from a mill clean-up yielded amalgamation bullion in 1932.

Upper San Miguel District (Telluride).—The Smuggler Union mine was the principal producer in the Upper San Miguel District in 1932. Gouging operations within the mine yielded approximately half the gold; the other half was contained in 431 tons of ore shipped to smelters and 3 tons shipped to the Golden Cycle mill. Other producers of one car or more were the Alta, Cimarron Mining Co. property, Hop claims, and Nellie and Laura. Placer gold was recovered at the Union placer.

SUMMIT COUNTY

Breckenridge District.—The Royal Tiger mine was the principal producer of gold from lode mines in the Breckenridge District in 1932, but most of the silver came from 4 tons of ore mined at the Silver King; the Jumbo mine produced 12 tons of gold-silver-copper ore, and the remainder of the lode output came from specimen ore. The Continental Dredging Co. operated its electrically driven dredge equipped with 96 buckets, each with a capacity of 8½ cubic feet, intermittently for 128 days. About 5 months were spent in remodeling the dredge to reach bedrock at greater depth and in repairing machinery because of numerous break-downs. The capacity of the dredge per 24 hours is reported as 4,000 cubic yards. Production by the dredge in 1932 was 1,122.02 fine ounces of gold and 288 fine ounces of silver. A power shovel and drag-line excavator, followed by sluice boxes, were employed at the Bemrose-Bostwick placer in Hoosier Gulch to recover placer gold. The Louis D. Emile placer was worked by hydraulicicking. Miscellaneous small producers worked placer ground by panning and sluicing.

Ten Mile District (Frisco, Kokomo, Robinson).—Five tons of ore were shipped from the Boston mine in 1932. Sluicing operations at the Eureka placer yielded the placer gold produced in the Ten Mile District.

TELLER COUNTY

Cripple Creek District.—In 1932 the Golden Cycle mill at Colorado Springs continued to be the exclusive market for Cripple Creek ores. The principal producers were the properties of the Cresson Consolidated Gold Mining & Milling Co., Granite Gold Mining Co., Portland Gold Mining Co., Stratton-Cripple Creek Mining & Development Co., and United Gold Mines Co. Other important producers were the Atlas Gold Mines Co. (Midget-Bonanza King), Acacia Gold Mining Co. (Morning Star and North and South Burns), Buckeye Mines & Milling Co., Dr. Jack Pot Mining Co., Economic mill dump, Elkton Co. group, Empire Lee Mining Co., Free Coinage Gold Mining Co., Jerry Johnson Gold Mining Co., LeClair Consolidated Mines Co. (Mary McKinney), Mexican Gold & Silver Mining Co. (Gold Pinnacle), New Gold Dollar Mining Co., New El Paso Mines, Inc., Raven Apex, School Section 16, Smith Moffat Mines Co., and Strong Mining Co.

STONE

(DETAILED STATISTICS)

By A. T. COONS

SUMMARY OF PRODUCTION

Stone sold or used by producers in the United States, 1928-32, by kinds

[Quantities approximate]

Year	Granite		Basalt and related rocks (trap rock)		Marble		Limestone	
	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value
1928.....	9,556,500	\$33,994,527	15,327,760	\$19,693,945	579,490	\$16,402,986	96,864,650	\$110,231,974
1929.....	10,826,730	34,225,110	14,871,780	18,946,197	553,660	16,545,312	100,686,960	113,906,071
1930.....	10,047,430	30,423,853	14,532,250	17,053,031	477,240	12,905,596	88,741,440	100,002,114
1931.....	8,068,470	25,973,510	12,552,880	13,822,835	350,420	10,419,834	66,751,040	71,875,886
1932.....	5,118,550	15,978,363	9,328,580	8,879,702	342,830	7,532,309	46,913,520	48,015,748

Year	Sandstone		Other stone ¹		Total	
	Short tons	Value	Short tons	Value	Short tons	Value
1928.....	4,716,530	\$10,498,440	6,824,580	\$5,998,825	133,869,510	\$196,820,697
1929.....	5,790,200	11,023,981	8,330,250	8,046,091	141,109,580	202,692,762
1930.....	4,594,310	10,285,391	8,603,670	8,278,626	126,996,340	178,948,611
1931.....	4,581,780	7,575,320	5,628,590	5,418,242	97,933,180	135,085,627
1932.....	2,973,040	4,081,804	5,967,790	4,575,682	70,644,310	89,063,608

¹ Includes mica schist, conglomerate, argillite, various light-colored volcanic rocks, serpentine not used as marble, soapstone sold as dimension stone, and such other stone as cannot properly be classed in any main group.

Stone sold or used by producers in the United States, 1931 and 1932, by uses

Use	1931		1932	
	Quantity	Value	Quantity	Value
Building stone..... cubic feet..	21,461,440	\$28,111,058	16,624,000	\$20,184,566
Approximate equivalent in short tons.....	1,669,440		1,295,590	
Monumental stone..... cubic feet..	2,869,150	9,634,168	2,038,370	6,244,654
Approximate equivalent in short tons.....	236,650		168,050	
Paving blocks..... number.....	22,440,590	1,938,158	7,583,490	620,178
Approximate equivalent in short tons.....	197,020		71,850	
Curbing..... cubic feet..	2,135,690	2,241,586	991,240	926,190
Approximate equivalent in short tons.....	171,120		79,840	
Flagging..... cubic feet..	611,920	446,525	320,470	206,552
Approximate equivalent in short tons.....	50,020		26,450	
Rubble..... short tons.....	432,230	592,243	179,100	195,650
Riprap..... do.....	4,222,570	4,276,626	3,452,290	2,874,179
Crushed stone..... do.....	72,624,410	70,404,964	51,995,100	46,891,765
Furnace flux (limestone and marble)..... do.....	9,727,230	7,193,944	3,991,160	2,929,116
Refractory stone (ganister, mica schist, and dolomite)..... short tons.....	611,070	633,199	197,430	228,550
Agricultural (limestone and marble)..... do.....	1,421,050	2,117,141	910,430	1,230,542
Manufacturing industries (limestone and marble)..... short tons.....	4,501,370	3,842,158	4,369,210	3,926,882
Other uses..... do.....	2,069,000	3,653,857	1,389,800	1,260,475
Total (quantities approximate, in short tons).....	97,933,180	135,085,627	70,644,310	89,063,608

¹ Includes 3,192,520 tons of stone valued at \$869,585 used as road base (of which 3,074,360 tons valued at \$319,947 were from Pennsylvania) and 68,960 tons of roofing granules valued at \$458,795. There were also produced in 1932, 174,140 tons of slate granules valued at \$1,058,713, used for roofing and included in the chapter on Slate.

Building stone sold or used by producers in the United States in 1932, by kinds

Kind	Rough			
	Constructional		Architectural	
	Cubic feet	Value	Cubic feet	Value
Granite.....	2,598,710	\$341,256	859,940	\$1,270,223
Basalt.....	57,770	5,900	-----	5,900
Marble.....	-----	-----	318,170	625,856
Limestone.....	609,630	77,872	3,275,830	1,334,095
Sandstone.....	442,550	61,435	321,690	219,560
Miscellaneous ¹	1,855,710	97,487	-----	-----
	5,564,400	583,950	4,775,630	3,458,734

Kind	Finished				Total	
	Sawed ²		Cut ²			
	Cubic feet	Value	Cubic feet	Value	Cubic feet	Value
Granite.....	298,510	\$509,297	638,190	\$3,743,384	4,395,350	\$5,873,160
Basalt.....	-----	-----	-----	-----	57,770	5,900
Marble.....	173,810	356,306	1,189,870	4,645,440	1,681,850	5,627,602
Limestone.....	1,145,030	988,958	2,383,640	4,627,299	7,414,130	7,028,224
Sandstone.....	221,110	259,877	141,610	505,235	1,126,990	1,046,107
Miscellaneous ¹	-----	-----	92,200	506,086	1,947,910	603,573
	1,838,460	2,114,438	4,445,510	14,027,444	16,624,000	20,184,566

¹ Includes soapstone sold as dimension stone.
² For granite, sawed stone corresponds to dressed stone for construction work (walls, foundations, bridges) and cut stone to architectural stone for high-class buildings.

PRODUCTION BY STATES

Stone sold or used by producers in the United States in 1932, by States

State	Number of active plants	Short tons (approximate)	Value	State	Number of active plants	Short tons (approximate)	Value
Alabama.....	15	1 269,570	\$1,141,476	Nebraska.....	6	84,050	\$96,570
Alaska.....	1	(²)	(²)	Nevada.....	5	236,590	213,014
Arizona.....	16	199,410	145,897	New Hampshire.....	22	208,710	846,188
Arkansas.....	12	1 48,530	1 82,177	New Jersey.....	37	1 514,800	1 743,302
California.....	192	3 807,080	3 925,122	New Mexico.....	3	1 308,640	1 253,051
Colorado.....	30	133,300	248,789	New York.....	134	8 312,260	9 349,273
Connecticut.....	33	1 144,720	1 142,050	North Carolina.....	30	1 429,990	1 924,022
Delaware.....	2	(²)	(²)	Ohio.....	147	6 319,870	5 107,775
District of Columbia.....	1	(²)	(²)	Oklahoma.....	28	788,780	589,617
Florida.....	28	1 877,880	1 701,593	Oregon.....	62	1 831,150	1 692,266
Georgia.....	42	1 094,040	3 374,555	Pennsylvania.....	* 847	10 842,100	9 264,631
Hawaii.....	9	231,130	394,457	Puerto Rico.....	7	27,300	32,043
Idaho.....	50	1 699,400	1 534,990	Rhode Island.....	12	1 41,740	1 290,547
Illinois.....	83	3 002,030	2 157,368	South Carolina.....	11	450,150	717,095
Indiana.....	89	2 472,450	6 987,755	South Dakota.....	22	196,100	442,507
Iowa.....	62	1 591,240	1 389,465	Tennessee.....	87	1 235,220	3 121,740
Kansas.....	53	1 733,350	1 650,843	Texas.....	37	1 920,070	1 366,243
Kentucky.....	74	1 651,540	1 278,792	Utah.....	18	143,150	230,645
Louisiana.....	1	(²)	(²)	Vermont.....	40	1 267,010	4 777,754
Maine.....	40	1 251,710	1 588,031	Virginia.....	87	2 399,640	2 704,009
Maryland.....	44	1 993,500	1 209,706	Washington.....	95	2 483,090	2 195,076
Massachusetts.....	70	1 824,380	4 079,845	West Virginia.....	55	1 264,040	1 312,551
Michigan.....	32	3 695,210	2 003,492	Wisconsin.....	124	1 682,510	2 190,938
Minnesota.....	46	1 302,080	1 876,420	Wyoming.....	14	1 309,780	1 320,378
Mississippi.....	2	(²)	(²)	Undistributed.....	-----	799,160	1 361,391
Missouri.....	156	3 303,290	3 769,087				
Montana.....	22	222,570	239,072				
					* 3,135	70,644,310	89,063,608

¹ To avoid disclosing confidential information, certain State totals are slightly incomplete, the figures not included being combined under "Undistributed."
² Included under "Undistributed."
³ Increase over the total of 2,751 in the United States in 1931 due chiefly to large number of operations (especially in Pennsylvania) for production of material for secondary roads.

EXPORTS AND IMPORTS

Stone¹ exported from the United States, 1928-32, by classes

[Figures on exports and imports compiled by C. Galliher, of the Bureau of Mines, from records of the Bureau of Foreign and Domestic Commerce]

Year	Marble in blocks, rough or dressed		Other building or monumental stone (including cement building blocks)		Value of other manufactures of stone (including other cement manufactures)	Total value
	Cubic feet	Value	Cubic feet	Value		
1928.....	64,326	\$254,266	653,108	\$473,166	\$1,245,792	\$1,973,224
1929.....	98,478	394,654	825,254	682,632	1,487,993	2,565,279
1930.....	84,550	375,964	731,359	594,177	1,066,584	2,036,725
1931.....	32,443	141,216	284,050	209,353	627,771	978,340
1932.....	30,691	99,943	73,098	75,558	273,755	449,256

¹ Figures not separately recorded for stone and for cement building blocks and for stone and for cement manufactures.

Stone¹ exported from the United States in 1932, by classes and countries

Country	Marble in blocks, rough or dressed		Other building or monumental stone (including cement building blocks)		Value of other manufactures of stone (including other cement manufactures)	Total value
	Cubic feet	Value	Cubic feet	Value		
North America:						
Bermudas.....	76	\$707	176	\$726	\$4,340	\$5,773
Canada.....	10,694	46,715	72,538	73,433	197,957	318,105
Central America:						
British Honduras.....	6	50			515	565
Costa Rica.....					90	90
Guatemala.....					120	120
Honduras.....					2,366	2,366
Nicaragua.....					85	85
Panama.....	1,522	4,730	335	803	4,910	10,443
Salvador.....					207	207
Mexico.....	332	2,471			11,296	13,767
Newfoundland and Labrador.....	1,044	5,478			80	5,558
West Indies:						
British: Jamaica.....					3,721	3,721
Cuba.....					4,252	4,252
Dominican Republic.....					270	270
Haiti.....					179	179
Netherland.....					423	423
Virgin Islands of the United States.....	50	351			248	599
Other.....	27	356			355	711
South America:						
Argentina.....					80	80
Brazil.....					378	378
Chile.....					126	126
Colombia.....					1,740	1,740
Ecuador.....					1	1
Peru.....					263	263
Venezuela.....					385	385
Other.....					5	5
Europe:						
France.....					12,135	12,135
Germany.....	1	35			3,785	3,820
Netherlands.....					252	252
United Kingdom.....	16,713	38,093	40	510	3,743	42,346
Other.....					1,963	1,963
Asia:						
China.....	3	100	9	86	2,781	2,967
India (British).....					5,114	5,114
Japan.....	223	857			3,890	4,747
Philippine Islands.....					428	428
Other.....					86	86
Africa:						
Union of South Africa.....					2,152	2,152
Other.....					310	310
Oceania:						
Australia.....					545	545
New Zealand.....					891	891
Other.....					1,288	1,288
	30,691	99,943	73,098	75,558	273,755	449,256

¹ Figures not separately recorded for stone and for cement building blocks and for stone and for cement manufactures.

166 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Value of stone imported for consumption in the United States, 1928-32

1928.....	\$3, 491, 353	1931.....	\$1, 497, 696
1929.....	3, 589, 259	1932.....	766, 706
1930.....	3, 145, 861		

Stone imported for consumption in the United States in 1932, by classes

Class	Quantity	Value	Class	Quantity	Value
Marble, breccia, and onyx: In blocks, rough, etc.			Quartzite.....short tons..	51, 415	\$79, 979
cubic feet.....	153, 660	\$318, 469	Travertine stone (unmanufactured).....cubic feet..	37, 706	23, 583
do.....	168	619			
Sawed.....			Stone (other):		
Slabs or paving tiles			Dressed.....		9, 163
superficial feet.....	232, 264	71, 832	Rough (monumental or building stone).....cubic feet..	25, 931	18, 867
All other manufactures.....		64, 724	Rough (other).....		10, 717
Mosaic cubes of marble or onyx:					
Loose.....		54			
		455, 698	Grand total.....		766, 706
Granite:					
Dressed.....cubic feet..	18, 193	90, 700			
Rough.....do.....	49, 140	77, 999			
	67, 333	168, 699			

Stone imported into the United States in 1932, by classes and countries

[General imports]

Country	Marble, breccia, and onyx			Granite		Other building or monumental stone (value)	Other stone, n.e.s. (value)	Total value
	Rough		Manufactures (value)	Cubic feet	Value			
	Cubic feet	Value						
Canada.....	2, 774	\$1, 295	\$60	24, 934	\$47, 628	\$18	\$80, 376	\$129, 377
Cuba.....			6					6
Total North America.....	2, 774	1, 295	66	24, 934	47, 628	18	80, 376	129, 383
Austria.....			1, 793			74		1, 867
Belgium.....	22, 359	45, 213	13, 118	780	771	13, 163		72, 265
Czechoslovakia.....			891	2, 016	9, 499	2, 905		13, 295
Finland.....				25, 625	65, 297			65, 297
France.....	17, 069	24, 802	9, 764	285	562	15, 519		50, 647
Germany.....	4, 011	15, 989	9, 659	3, 982	22, 475	19, 695	831	68, 649
Greece.....	716	2, 957						2, 957
Italy.....	86, 714	148, 954	96, 658			117, 164		362, 776
Netherlands.....			80					80
Norway.....				571	1, 305	155		1, 460
Portugal.....			5					5
Soviet Russia.....						153		153
Spain.....	5, 701	7, 351	140			250		7, 741
Sweden.....	195	320		8, 493	17, 278			17, 598
United Kingdom.....	1, 428	4, 695	918	468	2, 562	8, 372	1, 075	17, 622
Other Europe ¹	1, 552	2, 609	138	2	11	3, 654	21	6, 433
Total Europe.....	139, 745	252, 890	133, 164	42, 222	119, 760	181, 104	1, 927	688, 845
China.....			637			54, 157		54, 794
Japan.....			1, 403	14	23	5, 453		6, 879
Other countries ²	3, 025	45, 866	732			718	86	47, 402
Grand total.....	145, 544	300, 051	136, 002	67, 170	167, 411	241, 450	82, 389	927, 303

¹ Includes Denmark, Poland and Danzig, Rumania, Switzerland, and Yugoslavia.

² Includes Algeria and Tunisia, Argentina, Brazil, Egypt, Hong Kong, India (British), Malaya (British), Siam, Syria, and Uruguay.

PRODUCTION BY KINDS AND STATES

GRANITE

Granite sold or used by producers in the United States in 1932, by uses

Use	Quantity	Value
Building stone (rough and dressed)..... cubic feet.....	4,395,350	\$5,873,160
Approximate equivalent in short tons.....	358,060	
Monumental stone..... cubic feet.....	1,605,780	4,574,965
Approximate equivalent in short tons.....	131,290	
Paving..... number of blocks.....	6,804,270	563,258
Approximate equivalent in short tons.....	62,790	
Curbing..... linear feet.....	1,071,070	692,860
Approximate equivalent in short tons.....	57,430	
Rubble..... short tons.....	38,850	39,165
Riprap..... do.....	537,810	280,282
Crushed stone..... do.....	3,897,350	3,901,237
Other uses..... do.....	34,970	53,386
Total (quantities approximate, in short tons).....	5,118,550	15,978,363

Granite sold or used by producers in the United States in 1932, by States

[Quantities approximate]

State	Short tons	Value	State	Short tons	Value
California.....	659,190	\$807,045	Oklahoma.....	890	\$42,805
Colorado.....	8,730	50,738	Oregon.....	90	9,207
Connecticut.....	9,090	84,611	Pennsylvania.....	100,280	242,726
Georgia.....	517,070	1,340,047	Rhode Island.....	25,240	258,317
Idaho.....	274,060	161,854	South Carolina.....	450,150	717,095
Maine.....	182,430	1,497,667	South Dakota.....	8,730	241,071
Maryland.....	120,150	228,309	Texas.....	76,580	251,215
Massachusetts.....	728,720	2,934,028	Vermont.....	112,620	2,044,513
Minnesota.....	41,470	1,305,272	Virginia.....	623,300	583,392
Missouri.....	360	6,544	Washington.....	62,260	125,235
Montana.....	890	14,239	Wisconsin.....	45,640	674,296
New Hampshire.....	200,160	815,359	Undistributed ¹	229,230	229,826
New York.....	305,390	492,537			
North Carolina.....	335,830	820,410		5,118,550	15,978,363

¹ Includes Arizona, Delaware, District of Columbia, New Jersey, and Utah.

Granite sold or used by producers in the United States in 1932, by States and uses

State	Number of active plants	Building						Monumental				Paving blocks	
		Rough				Dressed		Rough		Dressed		Number	Value
		Construction		Architectural		Cubic feet	Value	Cubic feet	Value	Cubic feet	Value		
		Short tons	Value	Cubic feet	Value								
Arizona	1												
California	35	10,180	\$20,488	(2)	(2)	2 39,850	2 \$233,763	8,590	\$18,408	14,420	\$101,427		
Colorado	9	600	600	(1)	(1)			(2)	(2)	2 6,870	2 39,600		
Connecticut	10	2,470	3,745	2 9,220	2 \$14,467	(2)	(2)	19,990	32,954	1,410	7,683	7,700	\$523
Delaware	2	(1)	(1)										
District of Columbia	1	(1)	(1)										
Georgia	28	4,490	6,750	3,060	4,237	70,320	337,070	223,330	329,673	22,470	117,256	279,060	14,828
Idaho	21	150	80					60	182				
Maine	29	70,080	71,851	102,930	113,602	257,960	695,099	38,410	40,510	9,790	15,988	4,715,560	437,797
Maryland	10	20,990	61,588	(1)	(1)								
Massachusetts	39	12,070	26,246	99,150	125,335	265,020	1,470,542	76,060	143,531	13,670	97,987	1,542,610	90,137
Minnesota	24			354,220	738,778	33,770	170,756	58,200	164,994	26,840	229,001		
Missouri	3							3,300	6,460				
Montana	7							130	166	1,760	13,639		
New Hampshire	19	1,380	3,585	112,210	95,752	123,840	533,586	7,530	15,170	12,360	45,699	44,750	2,895
New Jersey	2												
New York	13	2,220	10,356	8,980	4,620	11,080	28,774			550	6,218	119,540	8,673
North Carolina	20	1,130	933	(2)	(2)	2 70,520	2 220,384	(2)	(2)	2 44,580	2 164,286	(1)	(1)
Oklahoma	6			(1)	(1)	(1)	(1)	(2)	(2)	2 9,490	2 40,910		
Oregon	1									(1)	(1)		
Pennsylvania	18	8,010	24,732	(1)	(1)			2 38,790	2 115,025	(2)	(2)	(1)	(1)
Rhode Island	8	(1)	(1)					2 59,860	2 231,535	(2)	(2)	(1)	(1)
South Carolina	11							(1)	(1)			(1)	(1)
South Dakota	9	(1)	(1)							36,120	235,201		
Texas	8	65,700	88,301	2 51,340	2 114,319	(2)	(2)	10,610	18,469	4,300	28,444		
Utah	1			(1)	(1)								
Vermont	17	150	540	2 107,270	2 341,815	(2)	(2)	650,460	1,610,197	5,280	42,410		
Virginia	8	(1)	(1)					(1)	(1)			(1)	(1)
Washington	7					9,980	43,414	(1)	(1)	(1)	(1)		
Wisconsin	22	320	3,974			23,480	217,061	14,800	31,886	40,020	362,568	(1)	(1)
Undistributed		9,250	17,487	36,600	22,180	840	6,350	144,530	252,975	1,200	14,523	95,050	8,405
	389	209,190	341,256	859,940	1,279,223	936,700	4,252,681	1,358,530	2,940,629	247,250	1,634,336	6,804,270	563,258

State	Curbing		Rubble		Riprap		Crushed stone				Other uses		Total	
							Concrete and road metal		Railroad ballast					
	Linear feet	Value	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value	Short tons (approximate)	Value
Arizona.....					(1)	(1)							(1)	(1)
California.....	3,400	\$4,600	1,070	\$1,275	256,200	\$173,819	316,720	\$222,792	69,160	\$30,337	460	\$136	659,190	\$807,045
Colorado.....							(1)	(1)					8,730	50,738
Connecticut.....	21,980	22,962	350	1,320	2,020	797					80	160	9,090	84,611
Delaware.....					(1)	(1)							(1)	(1)
District of Columbia.....													(1)	(1)
Georgia.....	226,030	115,834	8,650	8,748	12,810	10,093	437,700	383,327	11,250	11,426	1,340	805	517,070	1,340,047
Idaho.....					1,900	360	272,010	161,232					274,060	161,854
Maine.....	97,760	73,496	2,250	2,761	910	975	21,250	42,520	420	444	730	2,624	182,430	1,497,667
Maryland.....			(1)	(1)	(1)	(1)	87,930	143,027	(1)	(1)	1,060	5,300	120,150	228,309
Massachusetts.....	496,170	352,166	15,530	12,149	12,100	10,850	612,330	603,599	1,000	1,250	190	236	728,720	2,934,028
Minnesota.....							2,200	1,743					41,470	1,305,272
Missouri.....			80	94									6,544	360
Montana.....					730	434							890	14,239
New Hampshire.....	40,500	20,141	(1)	(1)	101,050	6,100	72,840	87,729			(1)	(1)	200,160	815,359
New Jersey.....							(1)	(1)	(1)	(1)			(1)	(1)
New York.....	70,000	17,750	2,130	2,270			141,310	150,751	152,720	257,299	1,280	5,826	305,390	492,537
North Carolina.....	110,000	84,675	(1)	(1)	(1)	(1)	249,210	280,349	69,790	65,167	430	3,687	335,830	820,410
Oklahoma.....			(1)	(1)									890	42,805
Oregon.....													90	9,207
Pennsylvania.....	(1)	(1)	5,980	5,025	110	68	51,000	60,890	15,510	15,506	13,550	4,774	100,280	242,726
Rhode Island.....			(1)	(1)	(1)	(1)	17,940	23,575			150	600	25,240	258,317
South Carolina.....	(1)	(1)	(1)	(1)	(1)	(1)	325,950	364,450	101,090	90,747	(1)	(1)	450,150	717,095
South Dakota.....			(1)	(1)	(1)	(1)	5,030	5,273			10	20	8,730	241,071
Texas.....					5,450	1,682							76,580	251,215
Utah.....													(1)	(1)
Vermont.....	600	275					50,050	49,063	560	218			112,620	2,044,518
Virginia.....							201,850	205,755	420,700	372,187			623,300	583,392
Washington.....					38,730	31,856	22,000	37,352			530	172	62,260	125,235
Wisconsin.....					(1)	(1)	24,910	28,194			12,190	25,994	45,640	674,296
Undistributed.....	4,630	961	2,810	5,523	105,800	43,248	121,660	179,541	21,270	25,544	2,970	3,052	229,230	229,826
	1,071,070	692,860	38,850	39,165	537,810	280,282	3,033,890	3,031,162	863,460	870,125	434,970	453,386	5,118,550	15,978,363

¹ Included under "Undistributed."

² Rough stone included under dressed stone.

³ Dressed stone included under rough stone.

⁴ Includes 890 tons of Durax paving blocks, valued at \$11,679, made in North Carolina and Wisconsin.

STONE

170 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Monumental granite sold by the quarrymen at Quincy, Mass., 1928-32¹

Year	Number of active plants	Short tons (approximate)	Value	Year	Number of active plants	Short tons (approximate)	Value
1928.....	6	12,400	\$369,184	1931.....	5	8,110	\$192,671
1929.....	6	10,840	288,492	1932.....	4	4,330	103,091
1930.....	5	8,030	224,165				

¹ Quincy granite sold also for construction as follows: 1929, 15,000 tons, valued at \$18,300; 1930, 14,410 tons, \$11,646; 1931, 14,620 tons, \$12,450; 1932, 12,610 tons, \$13,982. Corresponding figures for 1928 not available.

Monumental granite sold by the quarrymen in the Barre district, Vermont, 1928-32¹

Year	Cubic feet	Value	Year	Cubic feet	Value
1928.....	1,225,800	\$3,395,628	1931.....	823,160	\$2,295,179
1929.....	1,140,540	3,485,191	1932.....	618,890	1,549,113
1930.....	1,024,600	2,996,032			

¹ Barre granite is sold also for construction, paving blocks, and crushed stone.

Estimated output of monumental granite in Barre district, Vermont, 1930-32¹

	1930	1931	1932
Total quarry output, rough stock.....cubic feet..	1,125,840	842,922	651,401
Shipped out of Barre district in rough.....do.....	225,168	168,584	130,280
Manufactured in Barre district.....do.....	900,672	674,338	521,121
Light stock consumed in district.....do.....	562,920	421,460	325,701
Dark stock consumed in district.....do.....	337,752	252,878	195,420
Number of cutters in district.....do.....	1,500	900	900
Average daily wage.....do.....	\$9.00	\$9.00	\$8.00
Average number of days worked.....do.....	256	200	200
Total pay roll for year.....do.....	\$3,456,000	\$1,620,000	\$1,440,000
Estimated overhead.....do.....	1,728,000	810,000	720,000
Estimated value of light stock.....do.....	2,026,512	1,517,256	1,172,523
Estimated value of dark stock.....do.....	1,452,333	1,087,367	840,306
Estimated polishing cost.....do.....	712,317	533,316	412,140
Output from saws.....do.....	237,439	177,772	137,380
Total value of granite.....do.....	9,612,601	5,745,711	4,722,349

¹ Through the kindness of the Granite Manufacturers' Association, Barre, figures covering the entire granite industry of the Barre district are given in this table to supplement figures of sales reported by quarrymen.

BASALT AND RELATED ROCKS (TRAP ROCK)

Basalt and related rocks (trap rock) sold or used by producers in the United States in 1932, by uses

Use	Quantity	Value
Building stone.....cubic feet..	57,770	\$5,900
Approximate equivalent in short tons.....do.....	5,080	
Rubble.....short tons..	8,240	12,988
Riprap.....do.....	863,490	531,377
Crushed stone.....do.....	8,381,350	8,027,826
Other.....do.....	70,420	301,611
Total (quantities approximate, in short tons).....do.....	9,328,580	8,879,702

Basalt and related rocks (trap rock) sold or used by producers in the United States in 1932, by States

[Quantities approximate]

State	Short tons	Value	State	Short tons	Value
California.....	654,740	\$645,655	New Jersey.....	1,351,780	\$1,431,895
Connecticut.....	1,109,480	979,847	New York.....	637,460	755,297
Hawaii.....	230,700	392,912	Oregon.....	805,020	664,933
Idaho.....	415,700	346,175	Pennsylvania.....	630,690	818,847
Maine.....	24,320	34,398	Washington.....	2,168,910	1,524,394
Maryland.....	154,280	179,317	Undistributed ¹	200,910	259,789
Massachusetts.....	887,490	785,990			
Michigan.....	57,100	60,253		9,328,580	8,879,702

¹ Includes Minnesota, Montana, Nevada, Texas, Virginia, and Wisconsin.

Basalt and related rocks (trap rock) sold or used by producers in the United States in 1932, by States and uses

State	Number of active plants	Building, rough construction		Rubble and riprap		Crushed stone				Other uses		Total	
		Short tons	Value	Short tons	Value	Concrete and road metal		Railroad ballast		Short tons	Value	Short tons	Value
						Short tons	Value	Short tons	Value				
California.....	24			(1)	(1)	652,200	\$642,525	(1)	(1)			654,740	\$645,655
Connecticut.....	17	3,090	\$3,458			999,460	889,170	106,930	\$87,219			1,109,480	979,847
Hawaii.....	8	(1)	(1)	800	\$800	227,270	387,438	2,390	4,406	(1)	(1)	230,700	392,912
Idaho.....	23	(1)	(1)	3,090	2,057	412,610	344,118					415,700	346,175
Maine.....	3	(1)	(1)			24,200	33,758			(1)	(1)	24,320	34,398
Maryland.....	7			(1)	(1)	145,810	169,467	(1)	(1)			154,280	179,317
Massachusetts.....	15			4,000	3,000	868,190	770,264	15,300	12,726			887,490	785,990
Michigan.....	7					57,100	60,253					57,100	60,253
Minnesota.....	2			(1)	(1)	(1)	(1)			(1)	(1)	(1)	(1)
Montana.....	2			(1)	(1)	(1)	(1)			(1)	(1)	(1)	(1)
Nevada.....	1			(1)	(1)	(1)	(1)			(1)	(1)	(1)	(1)
New Jersey.....	28					1,235,960	1,312,808	99,820	103,087	16,000	\$16,000	1,351,780	1,431,895
New York.....	3					(1)	(1)	(1)	(1)			637,460	755,297
Oregon.....	56			71,340	45,413	727,810	615,810	170	110	5,700	3,600	805,020	664,933
Pennsylvania.....	19	1,660	1,973	930	932	523,920	508,456	63,580	66,003	40,600	241,483	630,690	818,847
Texas.....	1					(1)	(1)	(1)	(1)			(1)	(1)
Virginia.....	2	(1)	(1)			(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Washington.....	71			754,990	460,123	1,413,920	1,064,271					2,168,910	1,524,394
Wisconsin.....	1					(1)	(1)	(1)	(1)			(1)	(1)
Undistributed.....		330	469	36,580	32,040	659,840	789,111	144,870	166,826	8,120	40,528	200,910	259,789
	290	5,080	5,900	871,730	544,365	7,948,290	7,587,449	433,060	440,377	70,420	301,611	9,328,580	8,879,702

¹ Included under "Undistributed."

MARBLE

Marble sold by producers in the United States in 1932, by uses

Use	Quantity	Value
Building stone:		
Rough:		
Exterior.....cubic feet..	67, 550	\$151, 115
Interior.....do....	250, 620	474, 741
Finished:		
Exterior.....do....	796, 140	2, 062, 558
Interior.....do....	567, 540	2, 939, 188
Total exterior.....do....	863, 690	2, 213, 673
Total interior.....do....	818, 160	3, 413, 929
Total building stone.....do....	1, 681, 850	5, 627, 602
Monumental stone:		
Rough.....do....	93, 770	102, 576
Finished.....do....	338, 820	1, 567, 113
Total monumental stone.....do....	432, 590	1, 669, 689
Total building and monumental.....do....	2, 114, 440	7, 297, 291
Marble for other uses (byproducts).....short tons..	179, 130	235, 018
Total marble, approximate short tons.....	163, 700	235, 018
Total marble, approximate short tons.....	342, 830	7, 532, 309

Marble sold by producers in the United States in 1932, by States and uses

State	Building and monumental (rough and finished)		Other uses		Total	
	Cubic feet	Value	Short tons	Value	Short tons (approximate)	Value
Alabama.....	96, 790	\$380, 158	35, 310	\$34, 391	43, 540	\$414, 549
Arkansas.....	16, 750	36, 996	2, 850	3, 226	4, 280	40, 222
California.....	10, 910	35, 905	4, 510	12, 004	5, 440	47, 909
Georgia.....	322, 940	1, 524, 253	16, 870	27, 499	44, 310	1, 551, 752
Missouri.....	189, 340	384, 661	39, 580	18, 278	55, 330	402, 939
New York.....	20, 300	70, 083	10, 520	44, 419	12, 260	114, 502
Tennessee.....	424, 430	1, 900, 700	44, 210	26, 508	80, 010	1, 927, 208
Vermont.....	937, 300	2, 611, 246	640	7, 965	80, 300	2, 619, 211
Other States ¹	95, 680	353, 289	9, 210	60, 728	17, 360	414, 017
	2, 114, 440	7, 297, 291	163, 700	235, 018	342, 830	7, 532, 309

¹ Alaska, Arizona, Colorado, Maryland, Massachusetts, New Jersey, North Carolina, Pennsylvania, Utah, and Washington.

SERPENTINE

Serpentine ¹ (verde antique) sold by producers in the United States in 1932, by uses

Use	Quantity	Value
Building and ornamental stone.....cubic feet..	22, 360	\$174, 428
Rough construction, crushed, etc.....short tons..	179, 910	218, 366
		392, 794

¹ Serpentine sold from dimension-stone quarries is included in the figures for marble; serpentine sold for road work and other low-grade material is included in the figures for "miscellaneous" stone.

LIMESTONE

Limestone sold or used by producers in the United States in 1932, by uses

Use	Quantity	Value
Building stone ¹ cubic feet.....	7,414,130	\$7,028,224
Approximate equivalent in short tons.....	545,340	
Curbing, flagging, and paving..... cubic feet.....	122,000	38,332
Approximate equivalent in short tons.....	10,870	
Rubble..... short tons.....	84,570	84,308
Riprap..... do.....	1,448,040	1,421,024
Crushed stone..... do.....	35,063,520	30,398,610
Fluxing stone..... do.....	3,945,170	2,902,847
Sugar factories..... do.....	507,980	772,587
Glass factories..... do.....	108,720	149,262
Paper mills..... do.....	152,710	231,618
Agriculture..... do.....	909,470	1,229,107
Other uses ² do.....	4,137,130	3,759,829
Total (quantities approximate, in short tons).....	46,913,520	48,015,748

¹ Figures for building stone include small amounts of monumental stone.² See table on p. 178 for further distribution of limestone products.*Limestone sold or used by producers in the United States in 1932, by States*

[Quantities approximate]

State	Short tons	Value	State	Short tons	Value
Alabama.....	226,030	\$726,927	Nebraska.....	84,050	\$96,570
Arizona.....	36,740	35,679	New Mexico.....	308,640	253,051
Arkansas.....	31,460	29,170	New York.....	7,178,790	7,617,699
California.....	242,020	491,537	North Carolina.....	32,160	41,612
Colorado.....	97,060	127,657	Ohio.....	6,072,400	4,119,540
Connecticut.....	26,150	77,592	Oklahoma.....	765,240	536,666
Florida.....	877,880	701,593	Pennsylvania.....	5,989,360	6,110,073
Georgia.....	532,660	482,756	Puerto Rico.....	27,300	32,043
Hawaii.....	430	1,545	South Dakota.....	13,680	16,091
Idaho.....	9,640	26,961	Tennessee.....	1,151,650	1,131,182
Illinois.....	2,965,300	2,133,081	Texas.....	747,420	1,025,628
Indiana.....	2,472,450	6,987,755	Utah.....	136,480	165,580
Iowa.....	1,591,240	1,389,465	Vermont.....	74,090	114,025
Kansas.....	733,350	650,843	Virginia.....	1,685,260	1,570,359
Kentucky.....	1,645,110	1,252,920	Washington.....	112,610	164,855
Maine.....	44,960	55,966	West Virginia.....	1,071,150	928,814
Maryland.....	524,260	592,554	Wisconsin.....	1,537,840	1,359,421
Massachusetts.....	54,230	128,425	Wyoming.....	309,300	317,378
Michigan.....	3,592,020	1,918,556	Undistributed ¹	460,590	767,056
Minnesota.....	258,580	556,297			
Missouri.....	3,137,900	3,223,507			
Montana.....	56,040	57,319			
				46,913,520	48,015,748

¹ Includes Louisiana, Mississippi, Nevada, New Jersey, Oregon, and Rhode Island.

Limestone sold or used by producers in the United States in 1932, by States and uses

State	Number of active plants	Building						Rubble		Riprap		Crushed stone			
		Rough construction		Rough architectural		Finished (cut and sawed)		Short tons	Value	Short tons	Value	Concrete and road metal		Railroad ballast	
		Short tons	Value	Cubic feet	Value	Cubic feet	Value					Short tons	Value	Short tons	Value
Alabama	11			(1)	(1)	(1)	(1)			4,720	\$3,529	26,330	\$16,480		
Arizona	4									(1)	(1)	16,870	22,113		
Arkansas	3											(1)	(1)	(1)	(1)
California	24	890	\$1,288					2,790	\$975			62,830	76,249		
Colorado	10	80	1,000	500	\$1,000							450	508		
Connecticut	4											(1)	(1)		
Florida	26	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	764,420	545,855	39,940	\$22,595
Georgia	12											505,600	416,382		
Hawaii	1														
Idaho	4														
Illinois	80	(1)	(1)	(1)	(1)			(1)	(1)	181,680	152,812	2,277,120	1,517,402	159,700	106,233
Indiana	89	2,360	6,068	2,932,050	1,096,170	2,998,690	\$4,407,605			20,690	8,016	1,787,600	1,295,378	75,690	51,500
Iowa	62	1,670	1,929					670	871	23,690	19,069	1,468,220	1,276,213	(1)	(1)
Kansas	51	(1)	(1)	10,000	2,500	2,720	1,836	3,080	2,594	23,090	25,229	549,540	493,088	141,180	110,796
Kentucky	71	(1)	(1)	(1)	(1)			(1)	(1)	106,880	125,020	1,338,110	1,011,747	137,570	81,079
Louisiana	1									(1)	(1)			(1)	(1)
Maine	6											19,220	17,761		
Maryland	18	5,640	6,978					(1)	(1)			499,530	549,486	(1)	(1)
Massachusetts	10											5,560	5,051		
Michigan	19	(1)	(1)							16,000	3,200	667,270	398,954	(1)	(1)
Minnesota	17	(1)	(1)	72,010	50,704	102,750	248,885	5,470	6,005	18,690	17,731	206,510	194,735		
Mississippi	2														
Missouri	142	5,040	6,692			5,450	4,679	25,410	44,341	856,650	899,679	2,121,100	2,109,598	35,830	25,134
Montana	7									11,170	3,917	2,720	2,580		
Nebraska	6									19,450	15,655	50,010	45,224	(1)	(1)
Nevada	2									(1)	(1)				
New Jersey	2									(1)	(1)				
New Mexico	2											308,640	253,051		
New York	75	(1)	(1)					(1)	(1)	16,780	14,523	5,834,690	6,172,667	268,170	234,753
North Carolina	6											27,720	32,454		
Ohio	134	4,320	4,917					(1)	(1)	18,180	14,715	4,544,720	3,069,764	325,880	211,829
Oklahoma	18			(1)	(1)			25,100	5,940	11,610	9,208	616,870	430,115	107,620	78,238
Oregon	1														
Pennsylvania	216	7,710	8,179					(1)	(1)			3,997,610	4,125,158	151,130	87,803
Puerto Rico	7							100	200			16,440	14,800	430	178

¹ Included under "Undistributed."

STONE

175

Limestone sold or used by producers in the United States in 1932, by States and uses—Continued

State	Number of active plants	Building						Rubble		Riprap		Crushed stone			
		Rough construction		Rough architectural		Finished (cut and sawed)						Concrete and road metal		Railroad ballast	
		Short tons	Value	Cubic feet	Value	Cubic feet	Value	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value
Rhode Island.....	1														
South Dakota.....	6														
Tennessee.....	74									(1)	(1)	11,270	\$12,281		
Texas.....	22	480	\$598	134,520	\$84,534	212,720	\$431,959			5,280	\$4,804	795,220	789,455	254,410	\$182,826
Utah.....	14									22,370	18,565	617,290	422,586	59,620	45,679
Vermont.....	13									850	626	5,000	3,760		
Virginia.....	74							(1)	(1)			60,740	71,955		
Washington.....	7											998,830	906,971	383,030	311,209
West Virginia.....	34	(1)	(1)									37,200	46,502		
Wisconsin.....	93	13,650	20,466	(1)	(1)	6,860	19,501	1,500	\$3,109	72,210	74,967	499,330	520,684	181,290	111,449
Wyoming.....	12	1,040	11,304							(1)	(1)	1,331,320	1,059,880	58,620	37,991
Undistributed.....		7,700	8,453	126,750	99,187	199,480	501,792	20,450	20,273	18,050	9,759	143,500	115,025	(1)	(1)
	1,493	50,580	77,872	3,275,830	1,334,095	3,528,670	5,616,257	84,570	84,308	1,448,040	1,421,024	32,612,550	28,650,198	2,450,970	1,748,412

State	Fluxing stone		Sugar factories		Glass factories		Paper mills		Agriculture		Other uses		Total	
	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value	Short tons (approximate)	Value
Alabama.....	170,730	\$220,081							5,440	\$3,387	(1)	(1)	226,030	\$726,927
Arizona.....	(1)	(1)							(1)	(1)	(1)	(1)	36,740	35,679
Arkansas.....									(1)	(1)	(1)	(1)	31,460	29,170
California.....	22,870	27,100	86,340	\$234,746	8,960	\$24,850			1,160	2,900	56,180	\$123,429	242,020	491,537
Colorado.....	21,110	21,849	75,380	103,300									97,060	127,667
Connecticut.....													26,150	77,592
Florida.....									17,110	56,416	(1)	(1)	877,880	701,593
Georgia.....									5,470	10,161	(1)	(1)	532,660	482,756
Hawaii.....	2,640	3,681							14,110	18,883	10,310	43,810	430	1,545
Idaho.....	(1)	(1)	(1)	(1)					(1)	1,545	(1)	(1)	430	1,545
Illinois.....	144,440	115,878			(1)	(1)			(1)	(1)	(1)	(1)	9,640	26,961
Indiana.....	32,760	7,430	(1)	(1)	(1)	(1)	(1)	(1)	154,910	132,262	40,340	100,207	2,965,300	2,133,081
									61,860	54,260	51,440	48,410	2,472,450	6,987,755

Iowa	(1)	(1)	19,680	30,093					67,660	50,983	(1)	(1)	1,591,240	1,389,465
Kansas			(1)	(1)					11,880	6,701	(1)	(1)	733,360	650,843
Kentucky	(1)	(1)							56,030	24,389	(1)	(1)	1,645,110	1,252,920
Louisiana													(1)	(1)
Maine	230	358				23,440	\$29,613		2,070	8,234			44,960	55,966
Maryland	(1)	(1)							(1)	(1)			524,260	592,554
Massachusetts	3,040	3,849							36,450	52,863			54,230	128,425
Michigan	792,330	460,851	70,000	42,510		(1)	(1)		23,200	19,020	1,979,840	926,052	3,592,020	1,918,556
Minnesota	(1)	(1)							7,170	7,656	(1)	(1)	258,580	556,297
Mississippi									(1)	(1)			(1)	(1)
Missouri	5,950	6,591			19,950	20,135			31,700	24,486	35,830	82,172	3,137,900	3,223,507
Montana	12,310	10,005	29,090	37,817							750	3,000	56,040	57,319
Nebraska			5,660	9,514	(1)	(1)			(1)	(1)	5,670	23,232	84,050	96,570
Nevada	(1)	(1)											(1)	(1)
New Jersey	(1)	(1)							(1)	(1)	(1)	(1)	(1)	(1)
New Mexico													306,640	253,051
New York	11,780	9,967					5,830	7,938	49,620	149,159	989,440	1,027,651	7,178,790	7,617,699
North Carolina									4,380	9,075		60	32,160	41,612
Ohio	642,920	338,189	(1)	(1)	42,070	46,526	(1)	(1)	104,570	103,748	357,980	288,599	6,072,400	4,119,540
Oklahoma	(1)	(1)			(1)	(1)			(1)	(1)	550	1,663	765,240	536,666
Oregon									(1)	(1)	(1)	(1)	(1)	(1)
Pennsylvania	1,528,660	1,270,014			18,510	29,510	(1)	(1)	50,930	137,466	214,910	432,025	5,989,360	6,110,073
Puerto Rico			7,530	3,914					2,300	12,701		250	27,300	32,043
Rhode Island	(1)	(1)									(1)	(1)	(1)	(1)
South Dakota			(1)	(1)									13,680	16,091
Tennessee	4,240	4,424							71,130	83,489	21,370	66,184	1,151,650	1,131,182
Texas	18,650	17,764			(1)	(1)			(1)	(1)	(1)	(1)	747,420	1,025,628
Utah	90,710	71,763	34,890	62,859						5,030	26,582	(1)	136,480	165,580
Vermont								(1)	5,570	20,848		(1)	74,000	114,025
Virginia	(1)	(1)						(1)	69,310	83,612	213,850	249,236	1,685,260	1,570,359
Washington	(1)	(1)	520	655			55,750	96,619	(1)	(1)	1,660	6,835	112,610	164,855
West Virginia	378,670	264,141			(1)	(1)			5,170	11,970	(1)	(1)	1,071,150	928,814
Wisconsin	(1)	(1)							21,360	29,111	25,280	57,646	1,537,840	1,059,421
Wyoming			142,030	185,805									309,300	317,378
Undistributed	61,130	48,912	36,860	61,374	19,230	28,241	67,690	97,448	28,480	78,792	127,830	254,433	460,590	767,056
	3,945,170	2,902,847	507,980	772,587	108,720	149,262	152,710	231,618	909,470	1,229,107	4,148,000	3,798,161	46,913,520	48,015,748

1 Included under "Undistributed."

STONE

177

178 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Limestone sold or used by producers in the United States for miscellaneous uses in 1932

Use	Short tons	Value	Use	Short tons	Value
Alkali works.....	3,211,770	\$2,084,444	Poultry grit.....	14,960	\$78,481
Asphalt filler.....	177,110	450,530	Refractory stone (dolomite).....	72,240	45,186
Calcium carbide works.....	188,050	125,430	Road base.....	77,940	46,044
Coal-mine dusting.....	25,400	76,139	Roofing gravel.....	4,890	10,011
Filler (not whitening).....	15,070	31,914	Stucco, terrazzo, and artificial stone.....	22,460	97,153
Filter beds.....	81,600	68,137	Whiting substitute.....	76,020	386,191
Magnesia works (dolomite).....	62,930	82,822	Other ¹	40,450	47,513
Mineral food.....	23,060	91,513			
Mineral (rock) wool.....	43,180	38,321			
				4,137,130	3,759,829

¹ Includes stone for bird grit, carbon dioxide, chemicals, dye works, explosives, landscaping, lime burning, slabs, spalls, and uses not specified.

Dolomite and dolomitic lime sold or used by producers in the United States for specified purposes, 1928-32

	1928	1929	1930	1931	1932
Dolomite for—					
Basic magnesium carbonate:					
Short tons.....	94,200	84,750	111,740	80,820	62,930
Value.....	\$122,260	\$129,383	\$189,219	\$122,525	\$82,822
Carbon dioxide.....	(¹)	(¹)	(¹)	(¹)	(¹)
Dead-burned dolomite:					
Short tons.....	522,850	516,400	453,350	268,500	72,240
Value.....	\$509,502	\$461,444	\$356,025	\$183,020	\$45,186
Dolomitic lime for—					
Refractory (dead-burned dolomite):					
Short tons.....	448,761	448,032	351,740	243,769	135,733
Value.....	\$4,283,036	\$4,261,942	\$3,045,082	\$1,866,971	\$1,055,339
Sulphite pulp:					
Short tons.....	46,000	51,000	38,400	32,000	24,000
Value.....	\$359,000	\$398,000	\$295,000	\$233,000	\$148,000
Total (calculated as raw stone)—short tons.....	1,605,000	1,654,000	1,360,000	922,000	472,000

¹ Bureau of Mines not at liberty to publish figures.

Limestone used for all purposes in the United States, 1931 and 1932, in short tons

Use	1931	1932
Limestone (as given in this report).....	66,751,040	46,913,520
Portland cement (including "cement rock") ¹	31,500,000	19,400,000
Natural cement ("cement rock") ¹	236,000	4,000,000
Lime ²	5,420,000	4,000,000
	103,907,040	70,313,520

¹ Value reported as cement in the chapter on Cement.

² Value reported as lime in the chapter on Lime.

LIMESTONE FOR CONSTRUCTION

Limestone sold by producers in the Indiana oolitic limestone district, 1928-32

Year	Construction		Other		Total	
	Cubic feet	Value	Short tons	Value	Short tons (approximate)	Value
1928.....	14,520,260	\$17,760,622	429,890	\$302,819	1,482,610	\$18,063,441
1929.....	14,009,850	17,419,183	414,140	250,578	1,429,840	17,669,761
1930.....	12,308,340	15,276,487	538,490	364,365	1,430,840	15,640,852
1931.....	7,865,210	8,570,563	313,100	200,754	883,330	8,771,317
1932.....	5,927,350	5,491,276	136,130	85,957	565,860	5,577,233

Limestone sold by producers in the Indiana oolitic limestone district in 1932, by classes

Class	Quantity	Value
Construction:		
Rough blocks.....cubic feet..	2,932,040	\$1,096,161
Sawed.....do.....	1,061,080	806,365
Semifinished.....do.....	1,934,230	3,588,750
Cut.....do.....		
Total construction.....do.....	5,927,350	5,491,276
Other stone.....short tons..	136,130	85,957
Grand total (quantities approximate, in short tons).....	565,860	5,577,233

Indiana oolitic limestone sold by mills not operated by quarry companies, 1928-32¹

Year	Cubic feet	Value	Year	Cubic feet	Value
1928.....	1,177,320	\$2,594,224	1931.....	1,394,130	\$2,930,978
1929.....	1,370,200	3,374,490	1932.....	1,404,310	2,375,274
1930.....	1,991,000	4,645,824			

¹ Includes some stone purchased by quarry operators and milled and resold.*Indiana oolitic limestone sold by mills not operated by quarry companies, 1931 and 1932, by classes¹*

Year	Sawed		Cut		Total	
	Cubic feet	Value	Cubic feet	Value	Cubic feet	Value
1931.....	77,550	\$72,737	1,316,580	\$2,858,241	1,394,130	\$2,930,978
1932.....	27,440	22,238	1,376,870	2,353,036	1,404,310	2,375,274

¹ Includes some stone purchased by quarry operators and milled and resold.*Limestone sold by producers at Mankato and Kasota, Minn., 1928-32*

Year	Building stone (rough and dressed)		Other		Total	
	Cubic feet	Value	Short tons	Value	Short tons (approximate)	Value
1928.....	184,610	\$339,291	30,900	\$19,850	45,560	\$359,141
1929.....	230,290	495,895	38,410	22,962	56,590	518,857
1930.....	241,400	451,683	50,170	42,193	68,420	493,873
1931.....	216,720	469,684	74,150	65,659	90,420	535,343
1932.....	157,110	246,434	70,800	49,464	82,730	295,898

180 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Limestone and marble sold by producers in the Carthage district, Jasper County, Mo., 1928-32, by classes

Year	Building stone (rough and dressed)		Monumental stone (rough and dressed)		Other		Total	
	Cubic feet	Value	Cubic feet	Value	Short tons	Value	Short tons (approximate)	Value
1928.....	450,670	\$1,009,927	14,720	\$23,231	118,130	\$182,171	156,890	\$1,215,329
1929.....	278,340	553,468	21,610	43,202	174,810	228,941	199,860	825,611
1930.....	158,270	436,593	8,200	14,253	133,830	109,912	147,730	560,758
1931.....	105,310	305,810	6,140	11,228	91,850	110,192	101,150	427,230
1932.....	139,720	• 286,849	9,600	12,874	72,520	53,588	84,990	353,311

SANDSTONE

Sandstone sold or used by producers in the United States in 1932, by uses

Use	Quantity	Value
Building stone..... cubic feet.....	1,126,990	\$1,046,107
Approximate equivalent in short tons.....	87,400	
Paving blocks..... number.....	779,220	56,920
Approximate equivalent in short tons.....	9,070	
Curbing..... cubic feet.....	296,080	233,330
Approximate equivalent in short tons.....	22,410	
Flagging..... cubic feet.....	198,470	168,220
Approximate equivalent in short tons.....	15,580	
Crushed stone..... short tons.....	1,599,420	1,768,717
Rubble..... do.....	37,720	19,645
Riprap..... do.....	403,910	426,419
Refractory stone (ganister)..... do.....	119,360	165,477
Other uses..... do.....	673,170	196,969
Total (quantities approximate, in short tons).....	2,973,040	4,081,804

Sandstone sold or used by producers in the United States in 1932, by States

[Quantities approximate]

State	Short tons	Value	State	Short tons	Value
Arkansas.....	12,790	\$12,785	Pennsylvania.....	1,347,060	\$1,067,578
California.....	471,850	368,114	South Dakota.....	69,160	94,911
Colorado.....	9,090	16,243	Tennessee.....	3,560	63,350
Illinois.....	36,730	24,287	Texas.....	63,260	70,290
Kentucky.....	6,430	25,872	Virginia.....	58,630	32,475
Maryland.....	31,320	36,875	Washington.....	23,760	255,357
Michigan.....	46,090	24,683	West Virginia.....	192,890	383,737
Minnesota.....	2,030	14,851	Wisconsin.....	22,230	44,717
Missouri.....	98,870	112,337	Wyoming.....	480	3,000
New York.....	¹ 153,730	¹ 343,337	Undistributed ²	41,920	67,989
Ohio.....	247,470	988,235			
Oklahoma.....	7,650	7,650			
Oregon.....	26,040	18,126			
				2,973,040	4,081,804

¹ Includes biuestone.

² Includes Alabama, Arizona, Connecticut, Kansas, and Montana.

Sandstone sold or used by producers in the United States in 1932, by States and uses

73601-34-15

State	Number of active plants	Building stone						Refractory stone (ganister)		Paving blocks		Curbing	
		Rough construction		Rough architectural		Dressed (sawed and cut)		Short tons	Value	Number	Value	Cubic feet	Value
		Short tons	Value	Cubic feet	Value	Cubic feet	Value						
Alabama	1							(1)	(1)				
Arizona	1												
Arkansas	1												
California	16	(1)	(1)					(1)	(1)				
Colorado	5	(1)	(1)					2,400	\$3,395				
Connecticut	2	(1)	(1)	(1)	(1)	(1)	(1)						
Illinois	3							230	1,125				
Kansas	2												
Kentucky	3	(1)	(1)			(1)	(1)	(1)	(1)				
Maryland	4	(1)	(1)										
Michigan	3	(1)	(1)										
Minnesota	3					(1)	(1)			(1)	(1)		
Missouri	5	100	\$156										
Montana	2			(1)	(1)			(1)	(1)				
New York	35	1,170	8,720	4,660	\$3,393	23,790	\$71,990			234,500	\$13,213	47,730	\$54,945
Ohio	12	520	758	212,960	147,973	222,530	410,698	3,300	10,833			197,240	143,258
Oklahoma	3												
Oregon	4												
Pennsylvania	252	19,160	18,455	22,920	10,146	7,920	20,002	88,410	115,934	(1)	(1)	50,640	29,561
South Dakota	4	(1)	(1)			(1)	(1)	3,580	4,469				
Tennessee	2	(2)	(1)					50	230				
Texas	5												
Virginia	1												
Washington	8			74,000	46,000	49,580	193,330					470	566
West Virginia	20												
Wisconsin	7	600	1,000	150	100	(1)	(1)	14,340	17,611				
Wyoming	1					8,000	3,000						
Undistributed		13,570	32,346	7,000	11,943	52,900	61,092	6,990	11,880	544,720	43,707		
	396	35,120	61,435	321,690	219,560	362,720	765,112	119,360	165,477	779,220	56,920	296,080	233,330

¹ Included under "Undistributed."

STONE

Sandstone sold or used by producers in the United States in 1932, by States and uses—Continued

State	Flagging		Rubble		Riprap		Crushed stone				Other uses		Total		
	Cubic feet	Value	Short tons	Value	Short tons	Value	Concrete and road metal		Railroad ballast		Short tons	Value	Short tons (approximate)	Value	
							Short tons	Value	Short tons	Value					
Alabama.....														(1)	(1)
Arizona.....					(1)	(1)								(1)	(1)
Arkansas.....							12,790	\$12,785						12,790	\$12,785
California.....	(1)	(1)	33,390	\$12,500	(1)	(1)	308,500	259,782	(1)	(1)	45,410	\$14,487		471,850	368,114
Colorado.....	190	\$157	(1)	(1)	(1)	(1)	1,970	2,414						9,090	16,248
Connecticut.....	(1)	(1)			(1)	(1)								(1)	(1)
Illinois.....					13,970	\$11,739	22,530	11,423						36,730	24,287
Kansas.....	(1)	(1)					(1)	(1)						6,430	25,872
Kentucky.....	(1)	(1)			(1)	(1)								31,320	36,875
Maryland.....	(1)	(1)					(1)	(1)						46,090	24,683
Michigan.....			(1)	(1)			(1)	(1)			(1)	(1)		31,320	36,875
Minnesota.....					(1)	(1)	440	590	(1)	(1)	(1)	(1)		46,090	24,683
Missouri.....					91,270	104,681	7,500	7,500						2,030	14,851
Montana.....														98,370	112,337
New York.....	45,690	28,225			1,930	1,319	136,430	164,404			1,620	2,128		153,730	348,337
Ohio.....	81,050	56,480	920	2,407	182,840	204,125	6,000	3,000			1,400	3,703		247,470	988,235
Oklahoma.....							7,500	7,500			150	150		7,650	7,650
Oregon.....							26,040	18,126						26,040	18,126
Pennsylvania.....	46,370	28,161	(1)	(1)	(1)	(1)	573,260	600,568	61,660	\$61,280	585,340	138,376	1,347,060	1,067,578	
South Dakota.....					6,890	5,995	51,160	58,388			6,530	7,934		69,160	94,911
Tennessee.....	15,980	50,615									(1)	(1)		3,560	70,290
Texas.....					12,000	15,000	51,260	55,290						63,260	70,290
Virginia.....							58,630	32,475						58,630	32,475
Washington.....					5,600	3,353	6,860	6,308	1,410	800				23,760	255,357
West Virginia.....							192,890	383,737						192,890	383,737
Wisconsin.....			940	549	2,900	2,142	1,050	1,407			(1)	(1)		22,230	44,717
Wyoming.....														480	3,000
Undistributed.....	9,190	4,582	2,470	4,189	86,510	78,065	53,310	67,238	18,230	13,702	37,720	30,191		41,920	67,989
	198,470	168,220	37,720	19,645	403,910	426,419	1,518,120	1,692,935	81,300	75,782	678,170	196,969		2,973,040	4,081,804

¹ Included under "Undistributed."

BLUESTONE

Bluestone sold in New York and Pennsylvania in 1932, by uses¹

State	Building stone		Curbing		Flagging		Other		Total	
	Cubic feet	Value	Cubic feet	Value	Cubic feet	Value	Short tons	Value	Short tons (approximate)	Value
New York.....	25,450	\$68,383	47,330	\$54,490	43,840	\$26,913	4,380	\$7,059	14,220	\$156,850
Pennsylvania.....	22,880	4,935	6,960	4,725	39,500	26,192	10	25	5,830	35,877
	48,330	73,318	54,290	59,215	83,340	53,110	4,390	7,084	20,050	192,727

¹ Figures included in foregoing for sandstone.

MISCELLANEOUS STONE

Miscellaneous varieties of stone¹ sold or used by producers in the United States in 1932, by uses

Use	Quantity	Value
Building stone..... cubic feet.....	1,947,910	\$603,573
Approximate equivalent in short tons.....	157,340	
Riprap and rubble..... short tons.....	156,830	223,724
Crushed stone..... do.....	3,053,460	2,795,325
Refractory stone (mica schist)..... do.....	5,830	17,596
Other uses..... do.....	2,594,330	930,164
Total (quantities approximate, in short tons).....	5,967,790	4,575,682

¹ Includes mica schist, conglomerate, argillite, various light-colored volcanic rocks, serpentine not used as marble, soapstone used as dimension stone, and such other stone as cannot properly be classed in any main group.

² Chiefly field stones, etc., from Pennsylvania. See footnote 3 to table on p. 184.

Miscellaneous varieties¹ of stone sold or used by producers in the United States in 1932, by States

[Quantities approximate]

State	Short tons	Value	State	Short tons	Value
Arizona.....	61,290	\$78,832	Oklahoma.....	15,000	\$2,496
California.....	1,773,840	1,564,862	Pennsylvania.....	2,774,710	1,025,407
Maryland.....	163,490	172,651	Rhode Island.....	16,500	32,230
Massachusetts.....	152,090	188,298	South Dakota.....	104,530	90,434
Missouri.....	10,830	23,760	Texas.....	32,810	19,110
Montana.....	134,500	132,000	Washington.....	115,550	125,235
New Hampshire.....	8,550	30,829	Undistributed ¹	490,640	975,802
New Jersey.....	26,830	30,835			
New York.....	24,630	20,901		5,967,790	4,575,682
North Carolina.....	62,000	62,000			

¹ Includes Arkansas, Colorado, Florida, Idaho, Maine, Michigan, Nevada, New Mexico, Ohio, Utah, Vermont, Virginia, West Virginia, Wisconsin, and Wyoming.

Miscellaneous varieties of stone sold or used by producers in the United States in 1932, by States and uses

State	Number of active plants	Building		Riprap and rubble		Crushed stone				Other uses		Total	
		Short tons	Value	Short tons	Value	Concrete and road metal		Railroad ballast		Short tons	Value	Short tons (approximate)	Value
						Short tons	Value	Short tons	Value				
Arizona	9	500	\$3,923	(1)	(1)	54,680	\$74,726	(1)	(1)	6,110	\$183	61,290	\$78,832
Arkansas	2			(1)	(1)	(1)	(1)	(1)	(1)			(1)	(1)
California	88	910	14,067	29,920	\$87,543	1,615,740	1,239,833	54,740	\$24,893	72,530	148,476	1,773,840	1,564,862
Colorado	3			(1)	(1)	(1)	(1)	(1)	(1)			(1)	(1)
Florida	2			(1)	(1)	(1)	(1)	(1)	(1)			(1)	(1)
Idaho	2			(1)	(1)	(1)	(1)	(1)	(1)			(1)	(1)
Maine	3	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	163,490	172,651
Maryland	3			(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	152,090	188,298
Massachusetts	4			(1)	(1)	137,500	171,100	(1)	(1)	(1)	(1)	(1)	(1)
Michigan	3			(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Missouri	2			(1)	(1)	10,830	23,760					10,830	23,760
Montana	4			(1)	(1)	134,500	132,000					134,500	132,000
Nevada ¹	2	(1)	(1)	(1)	(1)	(1)	(1)			(1)	(1)	(1)	(1)
New Hampshire	3	(1)	(1)	(1)	(1)	(1)	(1)			(1)	(1)	8,550	30,829
New Jersey	4	750	3,251			26,080	27,584					26,830	30,835
New Mexico	1			(1)	(1)	(1)	(1)			(1)	(1)	(1)	(1)
New York	4			(1)	(1)	(1)	(1)			3,340	3,350	24,630	20,901
North Carolina	3					62,000	62,000					62,000	62,000
Ohio	1									(1)	(1)	(1)	(1)
Oklahoma	1							15,000	2,496			15,000	2,496
Pennsylvania	341			1,700	1,087	273,780	316,641			² 2,499,230	³ 707,679	2,774,710	1,025,407
Rhode Island	3					16,500	32,230					16,500	32,230
South Dakota	3					104,530	90,434					104,530	90,434
Texas	3			410	244	32,400	18,866					32,810	19,110
Utah	2			(1)	(1)	(1)	(1)					(1)	(1)
Vermont	2			(1)	(1)	(1)	(1)					(1)	(1)
Virginia ¹	2	(1)	(1)			(1)	(1)					(1)	(1)
Washington	6	790	791	20,000	25,728	94,760	98,716					115,550	125,235
West Virginia	1					(1)	(1)					(1)	(1)
Wisconsin	1			(1)	(1)	(1)	(1)					(1)	(1)
Wyoming	1					(1)	(1)					(1)	(1)
Undistributed		³ 154,390	³ 581,541	104,800	114,122	344,410	352,090	76,010	77,906	18,950	88,372	490,640	975,802
	508	157,340	603,573	156,830	228,724	2,907,710	2,690,030	145,750	105,295	³ 2,600,160	³ 948,060	5,967,790	4,575,682

¹ Included under "Undistributed."² Totals for building stone under "Undistributed" include stone from Nevada used in construction of Boulder Dam; also soapstone from Virginia used as dimension stone and included in 1932 for the first time in the figures for stone.³ Includes mica schist (5,830 tons valued at \$17,896) from Pennsylvania used as refractory stone and field stones, fence stones, and miscellaneous varieties of (stone 2,490,100 tons valued at \$688,783) collected and used for road base by the Department of Highways, State of Pennsylvania.

CRUSHED STONE (CONCRETE AND ROAD METAL AND RAILROAD BALLAST)*Crushed stone sold or used by producers in the United States in 1932, by kinds and uses*

Kind	Concrete and road metal		Railroad ballast		Total		
	Short tons	Value	Short tons	Value	Short tons	Value	
						Total	Average
Granite.....	3,033,890	\$3,031,162	863,460	\$870,125	3,897,350	\$3,901,287	\$1.00
Basalt and related rocks (trap rock).....	7,948,290	7,587,449	433,060	440,377	8,381,350	8,027,826	.96
Limestone.....	32,612,550	28,650,198	2,450,970	1,748,412	35,063,520	30,398,610	.87
Sandstone.....	1,518,120	1,692,935	81,300	75,782	1,599,420	1,768,717	1.11
Miscellaneous.....	2,907,710	2,690,080	145,750	105,295	3,053,460	2,795,325	.92
Average value per ton.....	48,020,560	43,651,774 \$0.91	3,974,540	3,239,991 \$0.82	51,995,100	46,891,765 \$0.90	-----

Crushed stone sold or used by producers in the United States, 1928-32, by uses

Year	Concrete and road metal		Railroad ballast		Total	
	Short tons	Value	Short tons	Value	Short tons	Value
1928.....	74,384,490	\$81,041,349	16,880,870	\$13,144,910	91,265,360	\$94,186,259
1929.....	76,174,770	80,685,493	16,546,490	13,702,385	92,721,260	94,387,873
1930.....	74,293,090	77,347,379	12,817,800	10,206,975	87,110,890	87,554,354
1931.....	65,811,520	64,908,509	6,812,890	5,496,455	72,624,410	70,404,964
1932.....	48,020,560	43,651,774	3,974,540	3,239,991	51,995,100	46,891,765

Crushed stone sold or used by producers in the United States in 1932, by States and uses

State	Concrete and road metal		Railroad ballast		Total	
	Short tons	Value	Short tons	Value	Short tons	Value
Alabama.....	26,330	\$16,480	-----	-----	26,330	\$16,480
Arizona.....	71,550	96,839	-----	-----	71,550	96,839
Arkansas.....	64,680	57,778	(1)	(1)	64,680	57,778
California.....	2,955,990	2,491,231	143,430	\$70,020	3,099,420	2,561,251
Colorado.....	2,420	2,922	-----	-----	2,420	2,922
Connecticut.....	999,460	889,170	106,930	87,219	1,106,390	976,389
Delaware.....	(1)	(1)	-----	-----	(1)	(1)
Florida.....	764,420	545,855	39,940	22,595	804,360	568,450
Georgia.....	943,300	799,709	11,250	11,426	954,550	811,135
Hawaii.....	227,270	387,438	2,390	4,406	229,660	391,844
Idaho.....	684,620	505,350	-----	-----	684,620	505,350
Illinois.....	2,299,650	1,528,825	159,700	106,233	2,459,350	1,635,058
Indiana.....	1,787,600	1,295,378	75,690	51,500	1,863,290	1,346,878
Iowa.....	1,468,220	1,276,213	(1)	(1)	1,468,220	1,276,213
Kansas.....	549,540	493,088	141,180	110,796	690,720	603,884
Kentucky.....	1,338,110	1,011,747	137,570	81,079	1,475,680	1,092,826
Louisiana.....	(1)	(1)	(1)	(1)	(1)	(1)
Maine.....	64,670	94,039	420	444	65,090	94,483
Maryland.....	858,480	993,585	85,570	89,173	944,050	1,082,758
Massachusetts.....	1,623,580	1,550,014	16,300	13,976	1,639,880	1,563,990
Michigan.....	733,810	473,917	(1)	(1)	733,810	473,917
Minnesota.....	209,150	197,068	(1)	(1)	209,150	197,068
Missouri.....	2,139,430	2,140,858	35,830	25,134	2,175,260	2,166,992
Montana.....	137,220	134,580	-----	-----	137,220	134,580
Nebraska.....	50,010	45,224	(1)	(1)	50,010	45,224
Nevada.....	(1)	(1)	-----	-----	(1)	(1)
New Hampshire.....	72,840	87,729	-----	-----	72,840	87,729
New Jersey.....	1,331,270	1,440,862	99,820	103,087	1,431,090	1,543,949

1 Included under "Undistributed."

2 To avoid disclosing confidential information certain totals are somewhat incomplete, the figures not included being combined under "Undistributed."

186 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Crushed stone sold or used by producers in the United States in 1932, by States and uses—Continued

State	Concrete and road metal		Railroad ballast		Total	
	Short tons	Value	Short tons	Value	Short tons	Value
New Mexico.....	² 308,640	² \$253,051			² 308,640	² \$253,051
New York.....	6,652,950	7,123,432	² 420,890	² \$492,052	² 7,073,840	² 7,615,484
North Carolina.....	338,930	374,803	69,790	65,167	408,720	439,970
Ohio.....	4,550,720	3,072,764	325,880	211,829	4,876,600	3,284,593
Oklahoma.....	624,370	437,615	122,620	80,734	746,990	518,349
Oregon.....	753,850	633,936	170	110	754,020	634,046
Pennsylvania.....	5,419,570	5,611,713	291,880	230,592	5,711,450	5,842,305
Puerto Rico.....	16,440	14,800	430	178	16,870	14,978
Rhode Island.....	34,440	55,805			34,440	55,805
South Carolina.....	325,950	364,450	101,090	90,747	427,040	455,197
South Dakota.....	171,990	166,376			171,990	166,376
Tennessee.....	795,220	789,455	254,410	182,826	1,049,630	972,281
Texas.....	² 700,950	² 496,712	² 59,620	² 45,679	² 760,570	² 542,391
Utah.....	² 5,000	² 3,750			² 5,000	² 3,750
Vermont.....	² 110,790	² 121,018	560	218	² 111,350	² 121,236
Virginia.....	1,278,980	1,166,548	² 803,730	² 683,396	² 2,082,710	² 1,849,944
Washington.....	1,574,740	1,253,149	1,410	800	1,576,150	1,253,949
West Virginia.....	² 692,220	² 904,421	181,290	111,449	² 873,510	² 1,015,870
Wisconsin.....	² 1,357,280	² 1,089,481	58,620	37,991	² 1,415,900	² 1,127,472
Wyoming.....	² 143,500	² 115,025	(¹)	(¹)	² 143,500	² 115,025
Undistributed.....	760,410	1,047,571	226,130	229,135	986,540	1,276,706
	48,020,560	43,651,774	3,974,540	3,239,991	51,995,100	46,891,765

¹ Included under "Undistributed."

² To avoid disclosing confidential information certain totals are somewhat incomplete, the figures not included being combined under "Undistributed."

GOLD, SILVER, COPPER, LEAD, AND ZINC IN ARIZONA

(DETAILED STATISTICS—MINE REPORT)

By C. N. GERRY AND T. H. MILLER

SUMMARY

The value of the gold, silver, copper, and lead produced from Arizona mines was \$13,535,935 in 1932, a decrease of \$26,608,759 (66 percent) from 1931 and less than 15 percent of the average annual value (\$93,396,758) of the metal output for the decade 1923 to 1932. The value of the output was lower by far in 1932 than in any year since detailed records were begun in 1903. From 1903 to the end of 1932 mines in Arizona have produced 347,829,847 tons of ore, old tailings, etc., 5,442,125.58 ounces of gold, 140,475,008 ounces of silver, 13,935,944,377 pounds of copper, 352,109,616 pounds of lead, and 137,933,262 pounds of zinc. The total value of the metal output for this period is \$2,522,771,302, distributed as follows: Gold, \$112,498,720; silver, \$95,072,271; copper, \$2,280,864,616; lead, \$22,254,626; and zinc, \$12,081,069.

The value of metal production herein reported has been calculated at the figures given in the table that follows. Gold is figured at the mint value for fine gold; that is, \$20.671835 an ounce. The silver price is the average New York price for bar silver. The copper, lead, and zinc prices are weighted averages, for each year, of all grades of primary metal sold by producers.

Prices of silver, copper, lead, and zinc, 1928-32

Year	Silver	Copper	Lead	Zinc	Year	Silver	Copper	Lead	Zinc
	<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>		<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>
1928.....	\$0.585	\$0.144	\$0.058	\$0.061	1931.....	\$0.290	\$0.091	\$0.037	\$0.038
1929.....	.533	.176	.063	.066	1932.....	.282	.063	.030	.030
1930.....	.385	.130	.050	.048					

Mine production of gold, silver, copper, lead, and zinc in Arizona, 1928-32, in terms of recovered metals

Year	Mines producing		Ore, old tailings, etc. (short tons)	Gold		Silver	
	Lode	Placer		Fine ounces	Value	Fine ounces	Value
1928.....	298	22	22,828,766	191,927.23	\$3,967,488	6,791,351	\$3,972,940
1929.....	390	22	25,860,772	202,318.14	4,182,287	7,543,283	4,020,670
1930.....	301	41	19,802,919	169,390.38	3,501,610	5,540,732	2,133,182
1931.....	252	68	13,690,610	126,185.94	2,608,495	3,245,311	941,140
1932.....	341	179	4,414,579	66,789.67	1,380,665	2,082,823	687,356

188 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Mine production of gold, silver, copper, lead, and zinc in Arizona, 1928-32, in terms of recovered metals—Continued

Year	Copper		Lead		Zinc		Total value
	Pounds	Value	Pounds	Value	Pounds	Value	
1928.....	732, 276, 803	\$105, 447, 860	14, 380, 964	\$834, 096	1, 278, 636	\$77, 997	\$114, 300, 381
1929.....	830, 628, 411	146, 190, 600	16, 054, 122	1, 011, 410	2, 458, 580	162, 266	155, 567, 133-
1930.....	576, 190, 607	74, 904, 779	8, 491, 623	424, 581	1, 630, 506	78, 264	81, 042, 416
1931.....	401, 344, 909	36, 522, 387	1, 964, 112	72, 672	-----	-----	40, 144, 694-
1932.....	182, 491, 825	11, 496, 985	2, 364, 300	70, 929	-----	-----	13, 535, 935-

Production of gold from Arizona lode mines and placers was 47 percent less in 1932 than in 1931 due to the large decrease in output of siliceous gold ore from the Tom Reed mine at Oatman and to curtailed output of copper ore from the United Verde, New Cornelia, Copper Queen, Morenci, and Magma properties. There was a large increase in the number of mines producing siliceous gold ore. The output of gold from placer claims was more than three times that in 1931. The output of silver declined 36 percent as a result of drastic curtailment in output of copper ore; there were also large decreases in shipments of silver ore from mines in Pinal and Santa Cruz Counties. The decrease in output of copper (nearly 55 percent in quantity and 69 percent in value) accounted for 94 percent of the decrease in total value of State output. Several of the large copper mines, including the Copper Queen mine of the Phelps Dodge Corporation at Bisbee and the United Verde and Old Dominion mines, were closed in 1931; others, including New Cornelia, Miami, Inspiration, and Morenci, were closed early in 1932; and those at Ray, Superior, and Bisbee operated at a greatly reduced rate. The closing or curtailing of these copper producers resulted in 1932 in the lowest annual output of copper, gold, and silver since detailed records were begun in 1903. The United Verde Extension mine at Jerome was the only large copper producer to maintain normal output during 1932. The output of lead increased slightly in 1932; nearly all of it came from the Tombstone Extension mine at Tombstone and the Copper Queen mine at Bisbee, both in Cochise County. No zinc was produced in Arizona in 1931 or 1932.

Mine production of gold, silver, copper, and lead in Arizona in 1932, by counties, in terms of recovered metals

County	Gold				Total value	Silver (lode and placer)	
	Lode		Placer			Fine ounces	Value
	Fine ounces	Value	Fine ounces	Value			
Cochise.....	25, 724. 52	\$531, 773	46. 68	\$965	\$532, 738	1, 066, 103	\$300, 641
Gila.....	732. 83	15, 149	96. 51	1, 995	17, 144	17, 021	4, 800
Graham.....	23. 51	486	5. 37	111	597	7	2
Greenlee.....	1, 013. 31	20, 947	148. 32	3, 066	24, 013	30, 213	8, 520
Maricopa.....	2, 068. 18	42, 753	97. 33	2, 012	44, 765	897	253
Mohave.....	6, 999. 14	144, 685	74. 64	1, 543	146, 228	9, 486	2, 675-
Pima.....	4, 475. 75	92, 522	204. 53	4, 228	96, 750	41, 195	11, 617
Pinal.....	6, 840. 95	141, 415	7. 40	153	141, 568	520, 532	146, 790-
Santa Cruz.....	178. 26	3, 685	3. 92	81	3, 766	13, 922	3, 926
Yavapai.....	14, 074. 22	290, 940	2, 286. 88	47, 274	338, 214	381, 057	107, 458-
Yuma.....	1, 179. 24	24, 377	508. 18	10, 505	34, 882	2, 390	674-
Total, 1931.....	63, 309. 91	1, 308, 732	3, 479. 76	71, 933	1, 380, 665	2, 082, 823	587, 356-
	125, 116. 71	2, 586, 392	1, 069. 23	22, 103	2, 608, 495	3, 245, 311	941, 140-

GOLD, SILVER, COPPER, LEAD, AND ZINC IN ARIZONA 189

Mine production of gold, silver, copper, and lead in Arizona in 1932, by counties, in terms of recovered metals—Continued

County	Copper		Lead		Total value
	Pounds	Value	Pounds	Value	
Cochise.....	47, 443, 857	\$2, 988, 963	2, 100, 833	\$63, 025	\$3, 885, 367
Gila.....	28, 696, 190	1, 807, 860	32, 967	989	1, 830, 793
Graham.....					599
Greenlee.....	23, 861, 254	1, 503, 259	1, 733	52	1, 535, 844
Maricopa.....	11, 968	754			45, 772
Mohave.....	5, 810	366	17, 967	539	149, 808
Pima.....	10, 193, 365	642, 182	29, 567	887	751, 436
Pinal.....	36, 461, 952	2, 297, 103	77, 400	2, 322	2, 587, 783
Santa Cruz.....	3, 206	202	37, 633	1, 129	9, 023
Yavapai.....	35, 808, 937	2, 255, 963	60, 667	1, 820	2, 703, 455
Yuma.....	5, 286	333	5, 533	166	36, 055
Total, 1931.....	182, 491, 825	11, 496, 985	2, 364, 300	70, 929	13, 535, 935
	401, 344, 909	36, 522, 387	1, 964, 112	72, 672	40, 144, 694

Ore, old tailings, etc., sold or treated and lode mines producing in Arizona, 1931 and 1932, by counties

County	Ore, old tailings, etc. (short tons)		Lode mines producing	
	1931	1932	1931	1932
	Cochise.....	1, 206, 513	271, 547	20	36
Gila.....	7, 510, 422	1, 999, 698	24	26
Graham.....	1, 094	71	4	2
Greenlee.....	1, 304, 478	751, 483	2	3
Maricopa.....	1, 709	6, 517	26	26
Mohave.....	47, 184	18, 661	27	49
Pima.....	1, 648, 537	357, 994	28	33
Pinal.....	1, 536, 702	742, 728	38	35
Santa Cruz.....	2, 316	291	13	13
Yavapai.....	431, 174	264, 213	58	90
Yuma.....	481	1, 376	12	28
	13, 690, 610	4, 414, 579	252	341

MINING INDUSTRY

A detailed statement of the condition of the mining industry in Arizona in 1932 may be found on pages 101 to 105 of the Minerals Yearbook, 1932-33, published by the Bureau of Mines in August 1933.

ORE CLASSIFICATION

Ore, old tailings, etc., sold or treated in Arizona in 1932, with content in terms of recovered metals

Source	Mines producing	Ore, old tailings, etc.	Gold	Silver	Copper	Lead
			<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>
Dry gold ore.....	292	<i>Short tons</i> 1 55, 730	19, 061. 43	42, 529	56, 829	67, 156
Dry gold and silver ore.....	8	2 4, 095	487. 06	26, 886	15, 533	43, 761
Dry silver ore.....	5	304	56. 39	16, 969	1, 104	5, 855
Copper ore.....	17	3 4, 343, 070	38, 631. 14	4 1, 862, 366	5 182, 365, 547	-----
Lead ore.....	26	11, 362	5, 073. 71	133, 509	52, 021	2, 240, 485
Copper-lead ore.....	2	18	. 18	110	791	7, 053
Total, lode mines.....	341	4, 414, 579	63, 309. 91	2, 082, 369	5 182, 491, 825	2, 364, 300
Total, placers.....	179		3, 479. 76	454		-----
Total, 1931.....	520	4, 414, 579	66, 789. 67	2, 082, 823	5 182, 491, 825	2, 364, 300
	320	13, 690, 610	126, 185. 94	7 3, 245, 311	5 401, 344, 909	1, 964, 112

¹ Includes 15,065 tons of old tailings treated by cyanidation and 217 tons of old tailings and 3 tons of old mill cleanings sold to a smelter.

² Includes 2,586 tons of old tailings sold to a smelter.

³ Includes 537,929 tons of ore leached and 488 tons of old mill cleanings sold to a smelter.

⁴ Includes 50 ounces of silver recovered from precipitates.

⁵ Includes 957,136 pounds of copper recovered from precipitates.

⁶ A mine producing more than 1 class of ore is counted but once in arriving at total for all classes.

⁷ Includes 137 ounces of silver recovered from precipitates.

⁸ Includes 8,881,853 pounds of copper recovered from precipitates.

Value of metals from ore, old tailings, etc., sold or treated in Arizona in 1932, by classes of ore

Class	Ore, old tailings, etc. (short tons)	Gold	Silver	Copper	Lead	Total
Dry gold ore.....	55, 730	\$394, 035	\$11, 993	\$3, 580	\$2, 015	\$411, 623
Dry gold and silver ore.....	4, 095	10, 068	7, 582	979	1, 312	19, 941
Dry silver ore.....	304	1, 166	4, 785	70	176	6, 197
Copper ore.....	4, 343, 070	798, 576	1 525, 187	1 11, 489, 029	-----	12, 812, 792
Lead ore.....	11, 362	104, 883	37, 650	3, 277	67, 214	213, 024
Copper-lead ore.....	18	4	31	50	212	297
Total, 1931.....	4, 414, 579	1, 308, 732	1 587, 228	1 11, 496, 985	70, 929	13, 463, 874
	13, 690, 610	2, 586, 392	2 941, 095	2 36, 522, 387	72, 672	40, 122, 546

¹ Includes value of 50 ounces of silver and 957,136 pounds of copper recovered from precipitates.

² Includes value of 137 ounces of silver and 8,881,853 pounds of copper recovered from precipitates.

The output of siliceous ore, old tailings, etc., from mines and dumps in Arizona was 14 percent less in 1932 than in 1931. The closing of the Tom Reed mine resulted in a decrease of more than 28,000 tons in such material from Mohave County, but this loss was almost offset by increased output of siliceous gold ore from a large number of small producers in Yavapai, Maricopa, Cochise, Pinal, and Yuma Counties. The output of copper ore, old mill cleanings, etc., decreased 68 percent as a result of closing or curtailing the large producers. The output of first-class lead ore, chiefly from Cochise County, was more than double that in 1931 due to increased shipments from the Copper Queen and Tombstone Extension mines.

GOLD, SILVER, COPPER, LEAD, AND ZINC IN ARIZONA 191

Ore, old tailings, etc., sold or treated in Arizona in 1932, by counties, with content in terms of recovered metals

DRY GOLD ORE

County	Ore, old tailings, etc.	Gold	Silver	Copper	Lead
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>
Cochise.....	¹ 5,130	3,105.19	14,868	15,465	46,509
Gila.....	312	306.82	343	1,540	267
Graham.....	71	23.51	7		
Greenlee.....	111	69.70	111	525	313
Maricopa.....	6,517	2,068.18	890	11,968	
Mohave.....	² 18,513	6,874.67	7,190	3,757	3,630
Pima.....	944	992.75	1,004	1,346	2,794
Pinal.....	¹ 1,676	1,019.70	3,621	6,524	300
Santa Cruz.....	175	163.65	170	95	
Yavapai.....	³ 20,956	3,287.02	12,104	14,437	13,243
Yuma.....	1,325	1,150.24	2,221	1,172	100
Total, 1931.....	55,730 58,862	19,061.43 41,032.45	42,529 45,470	56,829 62,418	67,156 7,809

DRY GOLD AND SILVER ORE

Cochise.....	⁴ 3,960	405.28	22,859	14,130	42,731
Gila.....	17	10.00	626	19	
Mohave.....	36	13.05	893	771	1,020
Pima.....	5	2.00	205	61	
Yavapai.....	77	56.73	2,303	552	
Total, 1931.....	4,095 9,134	487.06 1,922.92	26,886 79,931	15,533 28,144	43,751 590

DRY SILVER ORE

Cochise.....	155	2.80	2,117	316	1,735
Greenlee.....	108	43.61	8,077	184	1,420
Santa Cruz.....	36	7.00	6,000	556	2,700
Yavapai.....	5	2.98	775	48	
Total, 1931.....	304 1,690	56.39 70.20	16,969 108,251	1,104 20,465	5,855 14,855

COPPER ORE

Cochise.....	253,504	18,056.00	⁵ 911,180	⁵ 47,377,134	
Gila.....	⁶ 1,999,200	305.12	15,122	⁵ 28,691,068	
Greenlee.....	751,264	900.00	22,000	⁵ 23,860,545	
Mohave.....	15	4.00	172	695	
Pima.....	356,933	3,433.90	37,856	10,187,780	
Pinal.....	740,984	5,815.20	⁵ 514,748	⁵ 36,452,253	
Yavapai.....	241,123	10,087.92	361,282	35,791,958	
Yuma.....	47	29.00	6	4,114	
Total, 1931.....	4,343,070 13,606,755	38,631.14 80,684.64	⁵ 1,862,366 ⁵ 2,889,868	⁵ 182,365,547 ⁵ 401,126,926	

¹ Includes 10 tons of old tailings treated by cyanidation.

² Includes 1 ton of old mill cleanings sold to a smelter.

³ Includes 15,045 tons of old tailings treated by cyanidation and 217 tons of old tailings and 2 tons of old mill cleanings sold to a smelter.

⁴ Includes 2,586 tons of old tailings sold to a smelter.

⁵ Includes metal recovered from precipitates.

⁶ Includes 537,929 tons of ore leached and 488 tons of old mill cleanings sold to a smelter

192 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Ore, old tailings, etc., sold or treated in Arizona in 1932, by counties, with content in terms of recovered metals—Continued

LEAD ORE

County	Ore, old tailings, etc.		Gold	Silver	Copper	Lead
	Short tons	Fine ounces	Fine ounces	Fine ounces	Pounds	Pounds
Cochise.....	8,798	4,155.25	115,061		36,812	2,009,858
Gila.....	169	110.89	916		3,563	32,700
Mohave.....	97	107.42	1,224		587	13,317
Pima.....	95	47.10	2,027		3,448	20,306
Pinal.....	68	6.05	2,163		3,175	77,100
Santa Cruz.....	79	7.43	7,706		2,494	34,347
Yavapai.....	2,052	639.57	4,309		1,942	47,424
Yuma.....	4		103			5,433
Total, 1931.....	11,362	5,073.71	133,509		52,021	2,240,485
	13,951	1,384.19	119,391		91,491	1,873,691

COPPER-LEAD ORE

Pima.....	17		64	730	6,467
Santa Cruz.....	1	0.18	46	61	586
	18	.18	110	791	7,053
Total, 1931.....	218	22.31	2,243	15,465	67,167

METALLURGIC INDUSTRY

Of the total ore, old tailings, etc., produced in Arizona in 1932, 3,307,224 tons (75 percent) were treated at concentration plants, 537,929 tons (12 percent) were leached, 528,473 tons (12 percent) were smelted, and 40,953 tons (1 percent) were treated at gold and silver mills. The ore concentrated was treated in 19 plants—9 using straight flotation, 2 combined gravity and flotation, and 8 straight gravity concentration. There were 77 gold and silver mills operating—52 amalgamation plants, 11 cyanide plants, 12 amalgamation and gravity concentration mills, and 2 amalgamation and flotation plants. In addition there were 4 miscellaneous plants—1 copper leaching plant, 1 combined leaching and flotation plant treating copper slimes, and 2 plants precipitating copper from mine waters. The total of 100 plants active in 1932 compares with 59 in 1931; of these plants, 77 in 1932 and 35 in 1931 were gold and silver mills. Of the 9 copper smelting plants in Arizona 6 were operated during part of 1932.

Mine production of metals at gold and silver mills in Arizona in 1932, by counties, in terms of recovered metals

County	Ore and old tailings treated		Recovered in bullion			
			Amalgamation		Cyanidation	
	Ore	Old tailings	Gold	Silver	Gold	Silver
	Short tons	Short tons	Fine ounces	Fine ounces	Fine ounces	Fine ounces
Cochise.....	43	10	27.11	25	11.62	5
Gila.....	71		45.66	17		
Graham.....	71		23.51	7		
Maricopa.....	5,109		1,318.81	286		
Mohave.....	17,976		706.38	370	5,114.51	4,660
Pima.....	49		72.90	16		
Pinal.....	490	10	310.27	76	1.06	
Santa Cruz.....	87		80.25	30		
Yavapai.....	1,904	15,045	485.49	165	372.61	2,247
Yuma.....	88		119.44	77		
Total, 1931.....	25,888	15,065	3,189.82	1,069	5,499.80	6,912
	49,296	550	1,936.39	1,217	33,903.52	23,634

GOLD, SILVER, COPPER, LEAD, AND ZINC IN ARIZONA 193

Mine production of metals at gold and silver mills in Arizona in 1932, by counties, in terms of recovered metals—Continued

County	Concentrates and recovered metal			
	Concentrates produced	Gold	Silver	Copper
	Short tons	Fine ounces	Fine ounces	Pounds
Gila.....	5	10.02	11	218
Maricopa.....	52	93.00	137	272
Mohave.....	1	4.30	3	-----
Pinal.....	3	6.83	6	-----
Yavapai.....	50	107.57	60	608
Yuma.....	1	1.20	-----	-----
Total, 1931	112	222.97	217	1,098
	53	187.88	3,339	2,107

Arizona ore¹ concentrated in 1932, by classes of ore, methods of concentration, and classes of concentrates

Class of ore concentrated	Method of concentration	Ore concentrated	Gross content of mill feed			
			Gold	Silver	Copper	Lead
		Short tons	Fine ounces	Fine ounces	Pounds	Pounds
Siliceous gold.....	Flotation.....	1,768	450.00	2,112	725	-----
Copper sulphide.....	do.....	2,439,698	7,370.33	114,652	54,972,433	-----
Lead sulphide.....	do.....	2,000	700.00	4,000	3,000	52,000
Copper sulphide.....	Gravity and flotation.....	2,443,466	8,520.33	120,764	54,976,158	-----
		863,411	5,354.29	393,915	42,559,392	-----
Siliceous gold.....	Gravity.....	295	63.50	42	250	200
Lead sulphide.....	do.....	52	35.00	178	220	5,600
		347	98.50	220	470	5,800
		² 3,307,224	13,973.17	514,899	97,536,020	57,800

Class of ore concentrated	Method of concentration	Concentrates produced		Gross content of concentrates			
		Class	Quantity	Gold	Silver	Copper	Lead
			Short tons	Fine ounces	Fine ounces	Pounds	Pounds
Siliceous gold.....	Flotation.....	Siliceous gold.....	157	373.19	1,836	1,231	-----
Copper sulphide.....	do.....	Copper sulphide.....	93,226	6,659.91	102,234	46,083,126	-----
Lead sulphide.....	do.....	Lead sulphide.....	198	598.20	3,202	2,043	46,265
Copper sulphide.....	Gravity and flotation.....	Copper sulphide.....	93,581	7,631.30	107,272	46,086,400	46,265
			106,627	4,840.25	370,432	39,904,451	-----
Siliceous gold.....	Gravity.....	Siliceous gold.....	32	50.04	28	180	157
Lead sulphide.....	do.....	Lead sulphide.....	14	27.19	135	145	4,570
			46	77.23	163	325	4,727
			³ 200,254	12,548.78	477,867	85,991,176	50,992

¹ No old tailings reconcentrated in Arizona in 1932.

² Figures do not include ore treated at gold and silver mills.

³ Figures do not include concentrates from ore treated at gold and silver mills.

194 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Mine production of metals from concentrating mills in Arizona in 1932, by counties in terms of recovered metals

County	Ore treated	Concentrates and recovered metal				
		Concentrates produced	Gold	Silver	Copper	Lead
	<i>Short tons</i>	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>
Cochise.....	50	13	22.00	128	88	3,757
Gila.....	1,449,931	18,574	243.72	13,000	15,983,074	
Greenlee.....	746,274	51,673	850.00	20,000	22,588,041	
Maricopa.....	357	23	110.97	20	415	
Mohave.....	95	22	42.67	201	811	467
Pima.....	357,132	18,981	3,441.60	37,743	10,187,692	79
Final.....	699,220	88,748	4,261.76	359,617	29,768,821	
Yavapai.....	54,153	22,216	3,569.70	47,147	4,597,014	40,606
Yuma.....	12	3	6.36	2		
Total, 1931.....	3,307,224 10,084,563	200,254 530,343	12,548.78 29,763.84	477,867 931,403	83,125,956 213,684,591	44,909 35,345

Gross metal content of Arizona concentrates produced in 1932, by classes of concentrates

Class of concentrates	Concentrates produced (dry weight)	Gross metal content			
		Gold	Silver	Copper	Lead
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>
Dry and siliceous.....	297	631.70	2,079	2,122	157
Copper.....	199,857	11,514.66	472,668	85,988,004	
Lead.....	212	625.39	3,337	2,188	50,835
Total, 1931.....	200,366 530,396	12,771.75 29,951.72	478,084 934,742	85,992,314 220,755,530	50,992 38,713

Mine production of metals from Arizona concentrates in 1932, in terms of recovered metals

BY COUNTIES

	Concentrates	Gold	Silver	Copper	Lead
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>
Cochise.....	13	22.00	128	88	3,757
Gila.....	18,579	253.74	13,020	15,983,292	
Greenlee.....	51,673	850.00	20,000	22,588,041	
Maricopa.....	75	203.97	157	687	
Mohave.....	24	46.97	204	811	467
Pima.....	18,981	3,441.60	37,743	10,187,692	79
Final.....	88,751	4,268.64	359,623	29,768,821	
Yavapai.....	22,266	3,677.27	47,207	4,597,622	40,606
Yuma.....	4	7.56	2		
Total, 1931.....	200,366 530,396	12,771.75 29,951.72	478,084 934,742	83,127,054 213,686,698	44,909 35,345

BY CLASSES OF CONCENTRATES

Dry and siliceous.....	297	631.70	2,079	1,997	79
Copper.....	199,857	11,514.66	472,668	83,123,287	
Lead.....	212	625.39	3,337	1,770	44,830

GOLD, SILVER, COPPER, LEAD, AND ZINC IN ARIZONA 195

Gross metal content of Arizona crude ore shipped to smelters in 1932, by classes of ore

Class of ore	Quantity (dry weight)	Gross metal content			
		Gold	Silver	Copper	Lead
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>
Dry and siliceous.....	14, 307	9, 503. 10	67, 690	62, 925	132, 770
Copper.....	501, 544	27, 095. 98	1, 388, 912	90, 193, 270	-----
Lead.....	9, 310	4, 448. 32	130, 172	62, 826	2, 440, 297
Copper-lead.....	18	. 18	110	1, 001	7, 836
	525, 179	41, 047. 58	1, 586, 884	90, 320, 022	2, 580, 903
Total, 1931.....	1, 134, 886	58, 608. 32	2, 252, 563	129, 783, 434	1, 930, 501

Mine production of metals from Arizona crude ore shipped to smelters in 1932, in terms of recovered metals

BY COUNTIES

	Ore	Gold	Silver	Copper	Lead
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>
Cochise.....	268, 858	25, 517. 71	1, 057, 767	46, 683, 342	2, 054, 345
Gila.....	11, 279	398. 43	3, 232	823, 241	32, 967
Greenlee.....	5, 209	163. 31	10, 188	1, 131, 830	1, 733
Maricopa.....	1, 051	545. 40	447	11, 281	-----
Mohave.....	589	591. 64	3, 945	4, 999	17, 500
Pima.....	313	961. 25	3, 397	5, 673	29, 488
Pinal.....	43, 008	2, 260. 98	160, 825	6, 633, 209	77, 400
Santa Cruz.....	204	98. 01	13, 892	3, 206	37, 633
Yavapai.....	192, 892	9, 458. 61	330, 940	31, 211, 059	20, 061
Yuma.....	1, 276	1, 052. 24	2, 251	5, 286	5, 533
	525, 179	41, 047. 58	1, 586, 884	86, 513, 126	2, 276, 660
Total, 1931.....	1, 134, 886	58, 608. 32	2, 252, 563	120, 784, 778	1, 738, 080

BY CLASSES OF ORE

Dry and siliceous.....	14, 307	9, 503. 10	67, 690	58, 035	73, 952
Copper.....	501, 544	27, 095. 98	1, 388, 912	86, 404, 049	-----
Lead.....	9, 310	4, 448. 32	130, 172	60, 251	2, 195, 655
Copper-lead.....	18	. 18	110	791	7, 053

PRODUCTION BY MINING DISTRICTS

The following table shows the mineral production of Arizona in 1932 by mining districts, arranged alphabetically by counties.

196 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Mine production of gold, silver, copper, and lead in Arizona in 1932, by counties and districts, in terms of recovered metals

County and district	Mines producing		Ore, old tailings, etc.	Gold	Silver	Copper	Lead	Total value
	Lode	Placer						
Cochise County:			<i>Short tons</i>		<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	
Cochise	3		58	\$580	32	238	700	\$625
Dos Cabezas	10	1	2,025	33,901	3,461	6,460	40,933	36,512
Huachuca Mountain	1	3	5	543	18			548
Teviston	3	2	51	578	39	79	333	604
Tombstone	8		5,067	10,030	43,021	24,810	1,166,700	60,136
Turquoise	8	2	4,057	24,394	25,915	7,460	30,400	33,084
Warren	3		260,284	462,712	988,617	47,404,810	861,767	3,753,858
Gila County:								
Banner ¹	8		5,171	2,991	2,131	247,619	267	19,200
Globe	11	7	1,994,452	12,308	14,858	28,448,222	32,700	1,809,717
Green Valley	7		75	1,568	32	349		1,599
Young		1		(²)				(²)
Graham County: Rattlesnake	2	1	71	597	7			599
Greenlee County:								
Chase Creek		1		283				283
Copper Mountain	3	1	751,483	21,329	30,195	23,861,254	1,733	1,533,155
San Francisco River		3		2,401	18			2,406
Maricopa County:								
Big Horn	2		347	3,976	78	6,746		4,423
Cave Creek	4	2	48	1,268	39	191		1,291
Ellsworth ³	1		(²)	(²)	(²)	(²)		(²)
Midway	1		36	584		190		596
Osborn	1		1	86				86
San Domingo		3		1,365	7			1,367
Vulture	10	2	5,588	33,637	649	1,222		33,897
White Picacho ⁴	2		10	241	7	32		245
Winifred	5	1	369	3,319	39	317		3,350
Mohave County:								
Chemehuevis	3	2	19	934	7			936
Cottonwood	1		107	1,557	32	397		1,591
Gold Basin	1	2	1,355	4,136	85			4,160
Indian Secret	1		20	252	11			255
Maynard	2	1	13	757	7			759
Owens	7		136	2,450	53	2,413	467	2,631
Peacock	1		(²)	(²)				(²)
San Francisco	18	1	5,364	71,410	2,032			71,983
Union Pass	4		11,241	57,931	3,649			58,960
Wallapai	5		236	4,001	3,553	2,333	17,500	5,675
Weaver	6		150	2,540	57	667		2,598
Pima County:								
Agua Mountains		1		(²)				(²)
Ajo	1	1	(²)	(²)	(²)	(²)		(²)
Arivaca	14	1	122	3,384	1,174	1,270	8,967	4,064
Babobquivari	3	1	42	549	149		133	595
Cababi	5		635	13,792	1,670	3,476	11,600	14,830
Catalina	1		(²)	(²)				(²)
Cerro Colorado	1		(²)	(²)	(²)		(²)	(²)
Fresnal	1		(²)	(²)	(²)			(²)
Gresterville	1	6	16	3,257	53	16	400	3,285
Meyer	1		5	90				90
Old Hat ⁵	1		(²)	(²)				(²)
Pima	1		(²)	(²)	(²)	(²)	(²)	(²)
Quitotua	3	2	219	3,957	248	190	1,533	4,085
Pinal County:								
Banner ¹	1		6	104	4	32		107
Bunker Hill	1		(²)	(²)	(²)	(²)	(²)	(²)
Casa Grande	2		17	239				239
Cottonwood	2		118	2,074	53	254		2,105
Goldfields	5		64	1,153	53	127	300	1,155
Hackberry	2		6	306	14			310
Mineral Creek	4		591,983	5,964	9,369	14,403,603		916,033
Mineral Hill	3		53	769	7	95		777
Old Hat ⁵	8	1	347	4,159	195	127		4,222
Owl Head	1		(²)	(²)				(²)
Pioneer	5		149,635	124,343	505,844	22,052,476		1,656,297
Ripsey	1		428	2,190	2,830	2,063		3,118

¹ The Banner district lies in both Gila and Pinal Counties.

² Included under "Undistributed."

³ The Ellsworth district lies in both Maricopa and Yuma Counties.

⁴ The White Picacho district lies in both Maricopa and Yavapai Counties.

⁵ The Old Hat district lies in both Pima and Pinal Counties.

GOLD, SILVER, COPPER, LEAD, AND ZINC IN ARIZONA 197

Mine production of gold, silver, copper, and lead in Arizona in 1932, by counties and districts, in terms of recovered metals—Continued

County and district	Mines producing		Ore, old tailings, etc.	Gold	Silver	Copper	Lead	Total value
	Lode	Placer						
Santa Cruz County:			<i>Short tons</i>		<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	
Harshaw.....	1		79	\$283	12,734	1,556	18,733	\$4,534
Oro Blanco.....	8		145	3,315	163	95		3,367
Patagonia.....	1	1	34	94	961	1,476	16,333	943
Tyndall.....	2		3	6	57	79		104
Wrightson.....	1		30	68	7			70
Yavapai County:								
Ash Creek.....	1		125	2,214	553	1,635		2,473
Big Bug.....	6	24	421	10,462	206	2,191		10,658
Black Canyon.....	12	2	3,718	26,094	10,298	5,206	47,467	30,750
Black Rock.....	6	1	186	3,589	195	413		3,670
Bullard.....	1		7	147				147
Castle Creek.....	2	1	8	442				442
Cherry Creek.....	6		223	3,023	96	968		3,111
Copper Basin.....	1	9	1	13,695	117			13,728
Eureka.....	5	2	299	4,989	273	571	2,367	5,173
Granite Creek.....		3		621	7			623
Hassayampa.....	15	8	706	12,301	3,085	3,873	3,967	13,534
Humbug.....	1	4	205	6,782	812	333	6,133	7,216
Lincoln Creek.....		7		387				387
Lynx Creek.....		1		4,554	32			4,563
Martinez.....	6		15,901	14,426	3,032	2,318		15,427
Oak Creek.....		1		166				166
Santa Maria River.....		1		(¹)				(²)
Silver Mountain.....	1	1	1	307	7			309
Thumb Butte.....		1		91				91
Tip Top.....		2		418				418
Verde.....	3		241,113	208,487	361,273	35,790,460		2,565,165
Walker.....	6	1	28	1,348	805	48		1,578
Walnut Grove.....		5		1,071	7			1,073
Weaver.....	9	24	213	13,778	156	318	133	13,846
White Picacho ⁴	9		1,053	3,741	103	603	600	3,826
Yuma County:								
Castle Dome.....	3		11	500	330		5,433	756
Cienega.....	1		25	487	7			489
Dome.....		7		1,373				1,373
Ellsworth ³	16		1,280	22,184	1,968	4,841	100	23,047
Fortuna.....	3	1	13	479	7			481
Kofa.....	3		15	529		318		549
Laguna.....		13		5,065	39			5,076
La Paz.....		1		73				73
Plomosa.....	1	10	1	3,946	21			3,952
Wellton.....	1		26	246	18	127		259
Undistributed ⁵			357,164	72,895	40,142	10,194,858	84,034	729,012
Total, Arizona.....	341	179	4,414,579	1,380,665	2,062,823	182,491,825	2,364,300	13,535,935

¹ Included under "Undistributed."

³ The Ellsworth district lies in both Maricopa and Yuma Counties.

⁴ The White Picacho district lies in both Maricopa and Yavapai Counties.

⁵ Includes items entered as "(²)" above.

GOLD, SILVER, COPPER, LEAD, AND ZINC IN CALIFORNIA

(DETAILED STATISTICS—MINE REPORT)

By V. C. HEIKES AND CHARLES WHITE MERRILL¹

SUMMARY

The total value of the gold, silver, copper, and lead produced in California in 1932 was 3 percent less than that of the metal output in 1931 in spite of an increase of 9 percent in gold. Both quantity and value of silver, copper, and lead declined very sharply, and no zinc was produced in 1932. The tonnage of ore treated decreased 29 percent, but there was a large gain in the number of active mines, both lode and placer.

In 1932 Nevada, Sacramento, and Amador Counties and in 1931 Nevada, Sacramento, Amador, and Plumas Counties each exceeded \$1,000,000 in total value of metal output. Each of the following districts had a metal output exceeding \$500,000 in 1932: Grass Valley-Nevada City, Folsom, Mother Lode, Yuba River, and Alleghany; the output of each was principally gold.

In 1932 dry gold ore yielded over 95 percent of the total value of the metals recovered from lode mines; in 1931 dry gold ore yielded 78 percent and copper ore 18 percent. Amalgamation was the principal method of ore treatment in both 1932 and 1931. Cyanidation, ranking second in 1932, showed a marked increase in tonnage treated. Smelting of ore continued as in 1931, but there was a very sharp decrease in quantity of flotation concentrates smelted.

The value of metal production herein reported has been calculated at the figures given in the table that follows. Gold is figured at the mint value for fine gold; that is, \$20.671835 an ounce. The silver price is the average New York price for bar silver. The copper, lead, and zinc prices are weighted averages, for each year, of all grades of primary metal sold by producers.

Prices of silver, copper, lead, and zinc, 1928-32

Year	Silver	Copper	Lead	Zinc	Year	Silver	Copper	Lead	Zinc
	<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>		<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>
1928-----	\$0.585	\$0.144	\$0.058	\$0.061	1931-----	\$0.290	\$0.091	\$0.037	\$0.038
1929-----	.533	.176	.063	.066	1932-----	.282	.063	.030	.030
1930-----	.385	.130	.050	.048					

¹ The assistance of Helen M. Gaylord and Opal Y. Sharman, of the Bureau of Mines, is acknowledged.

Mine production of gold, silver, copper, lead, and zinc in California, 1928-32, in terms of recovered metals

Year	Mines producing		Ore, old tailings, etc. (short tons)	Gold		Silver	
	Lode	Placer		Fine ounces	Value	Fine ounces	Value
1928.....	287	460	1,702,541	521,739.59	\$10,785,315	1,473,771	\$865,081
1929.....	324	478	1,657,069	412,479.25	8,526,703	1,176,895	627,285
1930.....	481	892	1,595,150	457,199.98	9,451,162	1,622,803	624,779
1931.....	462	497	1,497,247	523,135.09	10,814,162	867,818	251,667
1932.....	718	828	1,060,361	569,166.99	11,765,726	493,533	139,176

Year	Copper		Lead		Zinc		Total value
	Pounds	Value	Pounds	Value	Pounds	Value	
1928.....	25,150,743	\$3,621,707	1,891,037	\$109,680	-----	-----	\$15,381,783
1929.....	33,218,994	5,846,543	1,429,489	90,058	-----	-----	15,090,589
1930.....	27,285,272	3,547,085	3,559,564	177,978	-----	-----	13,801,004
1931.....	12,931,995	1,176,812	3,757,256	139,018	159,865	\$6,075	12,387,734
1932.....	1,417,876	89,326	2,417,416	72,522	-----	-----	12,066,760

Gold and silver produced at placer mines in California, 1928-32

Year	Dredge				Drift			
	Gold		Silver		Gold		Silver	
	Fine ounces	Value	Fine ounces	Value	Fine ounces	Value	Fine ounces	Value
1928.....	214,345.43	\$4,430,913	14,510	\$8,488	7,420.05	\$153,386	799	\$467
1929.....	173,630.38	3,589,259	11,510	6,135	4,095.82	84,668	450	240
1930.....	166,980.85	3,451,801	10,753	4,140	3,029.01	62,615	426	164
1931.....	175,086.28	3,619,355	10,602	3,075	5,379.26	111,199	687	199
1932.....	188,830.89	3,903,481	11,269	3,178	9,959.43	205,880	1,166	329

Year	Hydraulic				Surface				Total value
	Gold		Silver		Gold		Silver		
	Fine ounces	Value	Fine ounces	Value	Fine ounces	Value	Fine ounces	Value	
1928.....	4,426.90	\$91,512	538	\$315	8,456.80	\$174,818	1,364	\$798	\$4,860,697
1929.....	2,889.55	59,732	445	237	6,624.85	136,948	907	483	\$3,877,702
1930.....	4,324.88	89,403	466	179	7,320.31	151,324	981	378	\$3,760,004
1931.....	3,026.16	62,556	380	110	11,011.90	227,636	1,545	448	\$4,024,578
1932.....	5,944.15	122,876	696	196	25,795.39	533,238	3,469	978	\$4,770,156

Gold.—The 9 percent increase in gold production in California in 1932 resulted from increases of 3 percent in lode gold and 19 percent in placer gold. The following proportionate increases over 1931 indicate the effect of the small miner on placer output: Dredge, 8 percent; drift, 85 percent; hydraulic, 96 percent; and surface, 134 percent. Dredging, however, accounted for 82 percent of California's placer-gold output in 1932.

The 188,830.89 ounces of gold and 11,269 ounces of silver recovered by dredges in California in 1932 came from 48,723,478 cubic yards of

gravel and represent an average of 8.02 cents a yard compared with 8.15 cents in 1931. The total recorded output of gold by dredges since the beginning of the industry (on the Feather River) has been \$174,528,580, of which the Feather River field has yielded \$33,621,406, the Yuba River field \$67,051,762, and the American River field \$44,793,178.

Nevada, Sacramento, and Amador Counties each had a gold output exceeding \$1,000,000 in both 1932 and 1931. The Grass Valley-Nevada City, Folsom, Mother Lode, Yuba River, and Alleghany districts each produced over \$500,000 in gold in 1932.

In 1932 dry gold ore yielded almost 99 percent of the total lode gold from California; in 1931 dry gold ore yielded 95 percent and copper ore 4 percent. In 1932, 66 percent of the total lode gold was recovered by amalgamation; 23 percent by cyanidation of ore, old tailings, etc., and concentrates; and 11 percent by smelting, principally of flotation, table, and vanner concentrates. The proportion recovered by amalgamation was about the same in 1931, but the increase from cyanidation in 1932 was offset by the decrease from flotation concentrates smelted.

Silver.—The silver output of California declined 43 percent (from 867,818 fine ounces in 1931 to 493,533 ounces in 1932) and was the smallest in 35 years. In 1932 San Bernardino and Nevada were the only counties with an output of over 100,000 ounces; in 1931 Plumas, Nevada, Inyo, and San Bernardino exceeded 100,000 ounces. Each of the following districts produced over 25,000 ounces of silver in 1932: Randsburg, Grass Valley-Nevada City, Cerro Gordo, and Genesee.

In 1932 dry gold ore and dry silver ore each yielded 38 percent and lead ore 18 percent of the total lode silver; in 1931 copper ore was the leading source of silver, followed by dry gold ore, lead ore, and dry silver ore. In 1932 smelting was the principal method of recovering silver, and flotation concentrates yielded the largest share of the smelted silver; in 1931 smelting was even more important than in 1932, and almost three times as much silver was derived by smelting flotation concentrates. Placer mines yielded 3 percent of California's silver output in 1932.

Copper.—Copper production in California declined 89 percent from 1931, and the output in 1932 was the smallest since 1896. Approximately three fourths of the total copper in 1932 came from Plumas County, all from the Genesee district; the copper output of Plumas County was much more important in 1931 than in 1932. In both years straight copper ore yielded most of the copper produced in the State, and flotation followed by smelting was the principal method of recovery.

Lead.—The lead output of California declined 36 percent from 1931 to 1932. Most of it came from Inyo County in both years, and the Cerro Gordo district yielded 85 percent of the State total in 1932. In both years virtually all the lead produced was derived from straight lead ore, and direct smelting of crude ore was the principal method of recovery.

Zinc.—No zinc has been produced in California since 1927, except in 1931 when the output was 159,865 pounds.

202 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Mine production of gold, silver, copper, lead, and zinc in California, 1931 and 1932, in terms of recovered metals

County	Gold					
	Lode		Placer		Total	
	Fine ounces	Value	Fine ounces	Value	Fine ounces	Value
Alameda						
Alpine	31.30	\$647			31.30	\$647
Amador	59,012.79	1,219,903	4,250.09	\$87,857	63,262.88	1,307,760
Butte	2,339.63	48,364	10,508.24	217,225	12,847.87	265,589
Calaveras	4,350.41	89,931	4,665.63	96,447	9,016.04	186,378
Colusa	17.96	371			17.96	371
Del Norte			106.18	2,195	106.18	2,195
Eldorado	7,209.96	149,043	1,596.37	33,000	8,806.33	182,043
Fresno	111.80	2,311	490.21	10,134	602.01	12,445
Humboldt			123.29	2,549	123.29	2,549
Imperial	741.10	15,320	43.17	892	784.27	16,212
Inyo	2,014.98	41,653	22.25	460	2,037.23	42,113
Kern	13,866.13	286,638	464.96	9,612	14,331.09	296,250
Lassen	22.23	460			22.23	460
Los Angeles			323.68	6,691	323.68	6,691
Madera	277.33	5,733	169.17	3,497	446.50	9,230
Mariposa	7,760.68	160,427	445.03	9,200	8,205.71	169,627
Merced			13,915.43	391,017	13,915.43	391,017
Modoc	100.70	2,082			100.70	2,082
Mono	1,253.73	25,917	20.14	416	1,273.87	26,333
Monterey	30.39	628	8.03	166	38.42	794
Nevada	171,112.08	3,537,201	5,011.47	103,596	176,123.55	3,640,797
Placer	1,086.11	22,452	3,949.19	81,637	5,035.30	104,089
Plumas	2,149.94	44,443	1,564.36	32,338	3,714.30	76,781
Riverside	989.64	20,453	15.98	330	1,005.62	20,788
Sacramento			101,599.57	2,100,250	101,599.57	2,100,250
San Bernardino	6,403.07	132,363	271.68	5,616	6,674.75	137,979
San Diego	253.11	5,232	16.50	341	269.61	5,573
San Joaquin			69.67	1,440	69.67	1,440
San Luis Obispo			49.41	1,021	49.41	1,021
Shasta	24,507.74	506,620	1,127.86	23,315	25,635.60	529,935
Sierra	25,821.87	533,785	2,733.62	56,509	28,555.49	590,294
Siskiyou	1,682.50	34,780	4,756.96	98,335	6,439.46	133,115
Stanislaus	1.82	38	7,393.02	152,827	7,394.84	152,865
Trinity	1,598.64	33,047	12,637.96	261,250	14,236.60	294,297
Tulare	6.80	141			6.80	141
Tuolumne	3,150.82	65,133	1,393.49	28,806	4,544.31	93,939
Ventura	41.87	866	1.02	21	42.89	887
Yuba	690.00	14,264	45,786.23	946,485	46,476.23	960,749
Total, 1931	338,637.13	7,000,251	230,529.86	4,765,475	569,166.99	11,765,726
	328,631.49	6,793,416	194,503.60	4,020,746	523,135.09	10,814,162

County	Silver					
	Lode		Placer		Total	
	Fine ounces	Value	Fine ounces	Value	Fine ounces	Value
Alameda	49	\$14			49	\$14
Alpine	854	241			854	241
Amador	13,247	3,736	459	\$129	13,706	3,865
Butte	1,593	449	950	268	2,543	717
Calaveras	2,223	627	483	136	2,706	763
Colusa	4	1			4	1
Del Norte			8	2	8	2
Eldorado	1,366	385	188	53	1,554	438
Fresno	13	4	101	28	114	32
Humboldt			15	4	15	4
Imperial	523	147	7	2	530	149
Inyo	85,476	24,104	2	1	85,478	24,105
Kern	13,890	3,917	143	40	14,033	3,957
Lassen	12	3			12	3
Los Angeles			47	13	47	13
Madera	139	39	45	13	184	52
Mariposa	2,180	615	74	21	2,254	636
Merced			1,861	525	1,861	525
Modoc	102	29			102	29
Mono	18,762	5,291	5	1	18,767	5,292

GOLD, SILVER, COPPER, LEAD, AND ZINC IN CALIFORNIA 203

Mine production of gold, silver, copper, lead and zinc in California, 1931 and 1932, in terms of recovered metals—Continued

County	Silver—Continued					
	Lode		Placer		Total	
	Fine ounces	Value	Fine ounces	Value	Fine ounces	Value
Monterey	3	\$1	1		4	\$1
Nevada	105,277	29,633	639	\$180	105,916	29,813
Placer	498	140	510	144	1,008	284
Plumas	28,849	8,135	159	45	29,008	8,180
Riverside	448	126	2	1	450	127
Sacramento			3,972	1,120	3,972	1,120
San Bernardino	178,139	50,235	22	6	178,161	50,241
San Diego	106	30	6	2	112	32
San Joaquin			6	2	6	2
San Luis Obispo			3	1	3	1
Shasta	13,911	3,923	177	50	14,088	3,973
Sierra	7,754	2,187	287	81	8,041	2,268
Siskiyou	347	98	731	206	1,078	304
Stanislaus			688	194	688	194
Trinity	556	157	1,599	451	2,155	608
Tulare	4	1			4	1
Tuolumne	531	150	227	64	758	214
Ventura	16	5			16	5
Yuba	61	17	3,183	898	3,244	915
Total, 1931	476,933	134,495	16,600	4,681	493,533	139,176
	854,604	247,835	13,214	3,832	867,818	251,667

County	Copper		Lead		Zinc		Total value
	Pounds	Value	Pounds	Value	Pounds	Value	
Alameda	12,545	\$790					\$304
Alpine	100	6	865	\$26			920
Amador	1,452	91	2,613	78			1,311,794
Butte	711	45					266,351
Calaveras	130	8					187,149
Colusa							372
Del Norte							2,197
Eldorado	123	8					182,489
Fresno							12,477
Humboldt							2,553
Imperial							16,361
Inyo	12,710	801	2,204,031	66,121			133,140
Kern	106	7	356	11			300,225
Lassen							463
Los Angeles							6,704
Madera							9,282
Mariposa							170,263
Merced							391,542
Modoc							2,111
Monoc	3,910	246	2,515	75			31,946
Monterey							795
Nevada	28,835	1,817	116,299	3,489			3,675,971
Placer	154	10					104,383
Plumas	1,043,257	65,725					150,686
Riverside	9,192	579					21,494
Sacramento							2,101,370
San Bernardino	3,361	212	20,981	629			189,061
San Diego							5,605
San Joaquin							1,442
San Luis Obispo							1,022
Shasta	295,865	18,639					552,547
Sierra	5,283	333	60,498	2,085			594,980
Siskiyou							133,419
Stanislaus							153,059
Trinity	142	9	258	8			294,922
Tulare							142
Tuolumne							94,153
Ventura							892
Yuba							961,664
Total, 1931	1,417,876	89,326	2,417,416	72,522			12,066,750
	12,931,995	1,176,812	3,757,256	139,018	159,865	\$6,075	12,357,734

Ore treated and gold and silver recovered at gold mills in Mother Lode counties in California in 1932¹

County	Ore treated	Gold and silver recovered in bullion			Concentrates produced ²	Gold and silver recovered from concentrates			Value of total recovery	
		Gold	Silver	Average value per ton of ore		Gold	Silver	Average value per ton of concentrates	Total	Average value per ton of ore
		<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>		<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>		
Amador.....	178,832	48,908.54	9,853	\$5.67	2,961	9,404.72	2,986	\$65.94	\$1,209,063	\$6.76
Calaveras.....	10,264	2,821.03	1,122	5.71	161	560.03	427	72.65	70,329	6.85
Eldorado.....	43,235	6,398.16	1,123	3.07	207	804.00	237	80.61	149,266	3.45
Mariposa.....	8,159	7,531.40	1,499	19.13	30	97.98	119	68.63	158,170	19.39
Tuolumne.....	2,614	2,924.72	445	23.18	3	2.40	1	16.67	60,634	23.20
Total, 1931.....	243,104	68,583.85	14,042	5.85	3,362	10,869.13	3,770	67.15	1,647,462	6.78
	254,111	67,882.50	15,232	5.54	4,429	15,243.08	5,522	71.51	1,724,376	6.79

¹ Old tailings and mill cleanings excluded.

² Includes only concentrates recovered from gold ore.

MINING INDUSTRY

ORE CLASSIFICATION

Ore, old tailings, etc., sold or treated in California in 1932, with content in terms of recovered metals

Source	Ore, old tailings, etc.	Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Dry gold ore.....	¹ 967,716	333,878.94	180,703	40,887	168,431	-----
Dry gold and silver ore.....	26	11.00	776	-----	133	-----
Dry silver ore.....	10,476	1,660.90	179,962	6,397	-----	183
Copper ore.....	² 78,031	1,561.28	28,726	1,353,505	-----	2,515
Lead ore.....	4,112	1,525.01	86,766	17,087	2,246,337	-----
Total, lode mines.....	1,060,361	338,637.13	476,933	1,417,876	2,417,416	-----
Total, placers.....	-----	230,529.86	16,600	-----	-----	-----
Total, 1931.....	1,060,361	569,166.99	493,533	³ 1,417,876	2,417,416	-----
	1,497,247	523,135.09	867,818	⁴ 12,931,995	3,757,256	159,865

¹ Includes 37,400 tons of old tailings and 5 tons of mill cleanings cyanided, 500 tons of old tailings amalgamated, 170 tons of old tailings concentrated, and 114 tons of old tailings and 32 tons of mill cleanings smelted.

² Includes 43,273 tons of pyrites roasted for the manufacture of sulphuric acid—residue leached.

³ Includes 45,798 pounds of copper from mine water.

Value of metals from ore, old tailings, etc., sold or treated in California in 1932, by classes of ore

Class	Ore, old tailings, etc. (short tons)	Gold	Silver	Copper	Lead	Zinc	Total value
Dry gold ore.....	967,716	\$6,901,890	\$50,958	\$2,576	\$5,053	-----	\$6,960,477
Dry gold and silver ore.....	26	227	219	-----	4	-----	450
Dry silver ore.....	10,476	34,334	50,749	403	75	-----	85,561
Copper ore.....	78,031	32,275	8,101	85,271	-----	-----	125,647
Lead ore.....	4,112	31,525	24,468	1,076	67,390	-----	124,459
Total, 1931.....	1,060,361	7,000,251	134,495	89,326	72,522	-----	7,296,594
	1,497,247	6,793,416	247,835	¹ 1,176,812	139,018	\$6,075	8,363,156

¹ Includes value of 45,798 pounds of copper from mine water.

GOLD, SILVER, COPPER, LEAD, AND ZINC IN CALIFORNIA 205

Ore, old tailings, etc., sold or treated in California in 1932, by counties, with content in terms of recovered metals ¹

DRY GOLD ORE

County	Ore, old tailings, etc.	Gold	Silver	Copper	Lead
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>
Alpine.....	8	20.30	78	100	732
Amador.....	¹ 182,650	59,012.79	13,247	1,452	2,613
Butte.....	² 5,372	2,339.63	1,593	711	-----
Calaveras.....	⁴ 13,276	4,350.41	2,223	130	-----
Colusa.....	10	17.96	4	-----	-----
Eldorado.....	43,237	7,209.96	1,366	123	-----
Fresno.....	59	111.80	13	-----	-----
Imperial.....	⁵ 11,401	741.10	523	-----	-----
Inyo.....	⁶ 2,955	1,215.47	1,943	1,525	47,508
Kern.....	⁷ 60,675	13,866.13	13,890	106	356
Lassen.....	530	22.23	12	-----	-----
Madera.....	833	277.33	139	-----	-----
Mariposa.....	8,210	7,760.68	2,180	-----	-----
Modoc.....	53	100.70	102	-----	-----
Mono.....	⁸ 937	1,240.03	5,475	-----	-----
Monterey.....	11	30.39	3	-----	-----
Nevada.....	346,398	171,112.08	105,277	28,835	116,299
Placer.....	1,591	1,086.11	498	154	-----
Plumas.....	⁹ 3,775	606.23	175	-----	-----
Riverside.....	1,874	972.07	445	7,354	-----
San Bernardino.....	¹⁰ 9,646	4,693.67	11,302	255	665
San Diego.....	395	253.11	106	-----	-----
Shasta and Siskiyou.....	¹¹ 220,022	26,190.24	14,258	-----	-----
Sierra.....	¹² 47,592	25,158.57	4,683	-----	-----
Stanislaus.....	1	1.82	-----	-----	-----
Trinity.....	2,766	1,598.64	556	142	258
Tulare.....	6	6.80	4	-----	-----
Tuolumne.....	2,691	3,150.82	531	-----	-----
Ventura.....	70	41.87	16	-----	-----
Yuba.....	672	690.00	61	-----	-----
Total, 1931.....	967,716 999,709	333,878.94 311,024.33	180,703 202,937	40,887 78,095	168,431 43,561

DRY GOLD AND SILVER ORE

Alpine.....	26	11.00	776	-----	133
Total, 1931.....	4,520	714.32	60,009	1,945	133

DRY SILVER ORE

Mono.....	86	13.70	13,287	3,910	2,515
San Bernardino.....	10,390	1,647.20	166,675	2,487	-----
Total, 1931.....	10,476 4,182	1,660.90 867.97	179,962 110,621	6,397 2,650	2,515

¹ No zinc produced in 1932; 9,911 tons of copper-lead-zinc ore treated in 1931 yielded 1,035.66 ounces of gold, 17,198 ounces of silver, 70,665 pounds of copper, 159,635 pounds of lead, and 159,865 pounds of zinc

² Includes 114 tons of old tailings smelted and 5 tons of mill cleanings cyanided.

³ Includes 100 tons of old tailings amalgamated.

⁴ Includes 30 tons of mill cleanings smelted.

⁵ Includes 10,805 tons of old tailings cyanided.

⁶ Includes 1,500 tons of old tailings cyanided.

⁷ Includes 24,050 tons of old tailings cyanided.

⁸ Includes 2 tons of mill cleanings smelted.

⁹ Includes 200 tons of old tailings amalgamated.

¹⁰ Includes 1,045 tons of old tailings cyanided and 200 tons of old tailings amalgamated.

¹¹ Includes 100 tons of old tailings concentrated.

¹² Includes 70 tons of old tailings concentrated.

Ore, old tailings, etc., sold or treated in California in 1932, by counties, with content in terms of recovered metals—Continued

COPPER ORE

County	Ore, old tailings, etc.	Gold	Silver	Copper	Lead
Alameda.....	<i>Short tons</i> 13 3,000	<i>Fine ounces</i>	<i>Fine ounces</i> 49	<i>Pounds</i> 12,545	<i>Pounds</i>
Plumas.....	34,741	1,543.71	28,674	1,043,257	-----
Riverside.....	12	17.57	3	1,838	-----
Shasta.....	13 40,278	-----	-----	295,865	-----
Total, 1931.....	78,031 473,389	1,561.28 13,607.47	28,726 322,148	1,353,505 12,770,376	-----

LEAD ORE

Inyo.....	3,403	799.51	83,533	11,185	2,156,523
San Bernardino.....	92	62.20	162	619	20,316
Sierra.....	617	663.30	3,071	5,283	69,498
Total, 1931.....	4,112 5,536	1,525.01 1,381.74	86,766 141,691	17,087 8,264	2,246,337 3,554,060

¹³ Pyrites roasted for the manufacture of sulphuric acid—residue leached.

¹⁴ Includes 45,798 pounds of copper from mine water.

METALLURGIC INDUSTRY

Mine production of metals in California in 1932, by methods of recovery

Method of recovery	Material treated (dry weight)	Gold	Silver	Copper	Lead	Zinc
Ore and old tailings amalgamated.....	<i>Short tons</i> 630,133	<i>Fine ounces</i> 224,053.73	<i>Fine ounces</i> 41,720	-----	-----	-----
Ore, old tailings, and mill cleanings cyanided.....	285,846	34,565.99	35,000	-----	-----	-----
Concentrates cyanided.....	¹ 8,267	41,878.05	46,160	-----	-----	-----
Ore, old tailings, and mill cleanings smelted.....	² 7,543	5,846.60	138,820	34,501	2,267,587	-----
Concentrates smelted:						
Flotation.....	4,983	19,199.45	199,079	1,065,213	45,736	-----
Table and vanner.....	1,623	13,093.31	16,103	9,752	104,093	-----
Pyrites roasted for acid—residue leached.....	³ 43,278	-----	49	308,410	-----	-----
Total, lode mines.....	-----	338,637.13	476,933	1,417,876	2,417,416	-----
Total, placers.....	-----	230,529.86	16,600	-----	-----	-----
Total, 1931.....	-----	569,166.99 523,135.09	493,533 867,818	1,417,876 12,931,995	2,417,416 3,757,256	----- 159,865

¹ Includes 7,541 tons from ore first treated in gold and silver mills and 726 tons from ore treated in concentrating mills.

² Includes 114 tons of old tailings yielding 207.00 ounces of gold and 75 ounces of silver and 32 tons of mill cleanings yielding 213.30 ounces of gold and 301 ounces of silver.

³ Residue leached amounted to 30,387 tons.

⁴ Includes 45,798 pounds of copper from mine water.

Mine production of metals from gold and silver mills in California in 1932, by counties, in terms of recovered metals

County	Ore, old tailings, etc., treated		Recovered in bullion			
	Ore	Old tailings, etc.	Amalgamation		Cyanidation	
			Gold	Silver	Gold	Silver
	<i>Short tons</i>	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Fine ounces</i>
Amador.....	178,832	5	48,844.57	9,844	97.62	11
Butte.....	5,267	100	1,647.25	262	379.78	373
Calaveras.....	10,264	-----	2,742.77	1,085	78.26	37
Colusa.....	10	-----	17.96	4	-----	-----
Eldorado.....	43,235	-----	4,804.26	858	1,593.90	265
Fresno.....	47	-----	71.40	5	-----	-----
Imperial.....	596	10,805	118.20	26	600.20	487
Inyo.....	1,150	1,500	224.54	71	407.99	35
Kern and Shasta.....	254,115	24,050	9,245.27	2,557	28,254.96	23,610
Lassen.....	530	-----	14.48	7	7.75	5
Madera.....	833	-----	277.33	139	-----	-----
Mariposa.....	8,159	-----	7,531.40	1,499	-----	-----
Mono.....	235	-----	578.83	1,114	-----	-----
Monterey.....	1	-----	10.49	1	-----	-----
Nevada.....	305,400	-----	114,518.69	18,045	-----	-----
Placer.....	1,554	-----	1,034.51	226	-----	-----
Plumas.....	3,574	200	539.13	138	-----	-----
Riverside.....	790	-----	307.32	84	-----	-----
San Bernardino.....	7,641	1,245	894.98	236	3,143.38	10,178
San Diego.....	389	-----	214.91	62	-----	-----
Sierra.....	47,514	-----	24,122.63	4,309	-----	-----
Siskiyou.....	1,887	-----	1,606.90	330	-----	-----
Trinity.....	2,696	-----	1,083.07	305	-----	-----
Tuolumne.....	2,614	-----	2,922.57	444	2.15	1
Ventura.....	70	-----	41.87	16	-----	-----
Yuba.....	671	-----	638.40	53	-----	-----
Total, 1931.....	878,074 827,809	37,905 20,035	224,053.73 213,514.08	41,720 45,750	34,565.99 18,884.57	35,002 14,056

County	Concentrates and recovered metal				
	Concentrates produced	Gold	Silver	Copper	Lead
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>
Amador.....	2,961	9,404.72	2,986	1,452	-----
Butte.....	35	307.70	955	711	-----
Calaveras.....	161	560.03	427	-----	-----
Eldorado.....	207	804.00	237	123	-----
Imperial.....	3	22.70	10	-----	-----
Inyo.....	47	207.80	911	-----	30,784
Kern.....	2	7.70	10	-----	-----
Mariposa.....	30	97.98	119	-----	-----
Nevada.....	6,704	38,010.49	38,306	6,943	70,267
Plumas.....	54	61.20	36	-----	-----
San Diego.....	5	23.90	23	-----	-----
Shasta.....	7	71.00	57	-----	-----
Sierra.....	140	1,008.70	365	-----	-----
Siskiyou.....	1	3.50	3	-----	-----
Trinity.....	34	302.00	162	-----	-----
Tuolumne.....	3	2.40	1	-----	-----
Yuba.....	3	48.10	4	-----	-----
Total, 1931.....	10,397 10,076	50,943.92 49,445.33	44,612 40,439	9,229 876	101,051 8,182

Mine production of metals from concentrating mills in California in 1932, by counties, in terms of recovered metals

County	Ore and old tailings treated	Concentrates and recovered metal					
		Concentrates produced	Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Short tons</i>	<i>Fine oz.</i>	<i>Fine oz.</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Alpine.....	25	6	9.20	684		133	
Amador.....	3,675	60	437.48	299		2,613	
Calaveras.....	2,956	105	703.10	493	130		
Mono.....	700	44	612.50	4,115			
Nevada.....	40,932	1,100	18,465.70	48,867	21,892	46,032	
Plumas.....	34,741	2,114	1,543.71	28,674	1,043,257		
Riverside.....	212	4	17.33	6			
San Bernardino.....	10,150	1,037	1,414.33	133,585	457		
Shasta.....	100	1	7.70	1			
Sierra.....	70	5	15.84	6			
Total, 1931.....	93,561 600,657	4,476 28,536	23,226.89 41,565.08	216,730 553,281	1,065,736 12,600,593	48,778 203,227	159,865

Gross metal content of California concentrates produced in 1932, by classes of concentrates

Class of concentrates	Concentrates produced	Gross metal content				
		Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine oz.</i>	<i>Fine oz.</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Dry gold.....	11,588	69,150.81	76,412	20,166	115,001	
Dry gold and silver.....	6	9.20	684		140	
Dry silver.....	975	1,269.99	133,550	446		
Copper.....	2,114	1,543.71	28,674	1,070,057		
Lead.....	190	2,197.10	22,022	18,948	42,572	
Total, 1931.....	14,873 38,612	74,170.81 91,010.41	261,342 593,720	1,109,617 13,025,740	157,713 238,182	162,016

Mine production of metals from California concentrates in 1932, in terms of recovered metals

BY COUNTIES

	Concentrates	Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine oz.</i>	<i>Fine oz.</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Alpine.....	6	9.20	684		133	
Amador.....	3,021	9,842.20	3,285	1,452	2,613	
Butte.....	35	307.70	955	711		
Calaveras.....	266	1,263.13	920	130		
Eldorado.....	207	804.00	237	123		
Imperial.....	3	22.70	10			
Inyo.....	47	207.80	911		30,784	
Kern.....	2	7.70	10			
Mariposa.....	30	97.98	119			
Mono.....	44	612.50	4,115			
Nevada.....	7,804	56,476.19	87,173	28,835	116,299	
Plumas.....	2,168	1,604.91	28,710	1,043,257		
Riverside.....	4	17.33	6			
San Bernardino.....	1,037	1,414.33	133,585	457		
San Diego.....	5	23.90	23			
Shasta.....	8	78.70	58			
Sierra.....	145	1,024.54	371			
Siskiyou.....	1	3.50	3			
Trinity.....	34	302.00	162			
Tuolumne.....	3	2.40	1			
Yuba.....	3	48.10	4			
Total, 1931.....	14,873 38,612	74,170.81 91,010.41	261,342 593,720	1,074,965 12,601,469	149,829 211,409	159,865

Mine production of metals from California concentrates in 1932, in terms of recovered metals—Continued

BY CLASSES OF CONCENTRATES

	Concentrates	Gold	Silver	Copper	Lead	Zinc
	Short tons	Fine oz.	Fine oz.	Pounds	Pounds	Pounds
Dry gold.....	11,588	69,150.81	76,412	16,193	109,253	-----
Dry gold and silver.....	6	9.20	684	-----	133	-----
Dry silver.....	975	1,269.99	133,550	357	-----	-----
Copper.....	2,114	1,543.71	28,674	1,043,257	-----	-----
Lead.....	190	2,197.10	22,022	15,158	40,443	-----
	14,873	74,170.81	261,342	1,074,965	149,829	-----

Gross metal content of California crude ore shipped to smelters in 1932, by classes of ore

Class of ore	Ore	Gross metal content			
		Gold	Silver	Copper	Lead
	Short tons	Fine ounces	Fine ounces	Pounds	Pounds
Dry gold.....	2,546	3,491.01	5,171	10,661	20,191
Dry gold and silver.....	1	1.80	92	-----	-----
Dry silver.....	726	390.91	46,412	8,259	2,620
Copper.....	12	17.57	3	1,895	-----
Lead.....	4,112	1,525.01	86,766	22,826	2,357,903
	7,397	5,426.30	138,444	43,641	2,380,714
Total, 1931.....	7,691	5,215.94	201,077	26,621	3,732,390

Mine production of metals from California crude ore shipped to smelters in 1932, in terms of recovered metals

BY COUNTIES

	Ore	Gold	Silver	Copper	Lead
	Short tons	Fine ounces	Fine ounces	Pounds	Pounds
Alpine.....	9	22.10	170	100	732
Amador.....	24	21.40	32	-----	-----
Butte.....	5	4.90	3	-----	-----
Calaveras.....	26	101.65	126	-----	-----
Eldorado.....	2	7.80	6	-----	-----
Fresno.....	12	40.40	8	-----	-----
Inyo.....	3,708	1,174.65	84,459	12,710	2,173,247
Kern.....	487	738.31	1,497	106	356
Mariposa.....	51	131.30	562	-----	-----
Modoc.....	53	100.70	102	-----	-----
Mono.....	86	13.70	13,287	3,910	2,515
Monterey.....	10	19.90	2	-----	-----
Nevada.....	66	117.20	69	-----	-----
Placer.....	37	51.60	272	154	-----
Plumas.....	1	5.90	1	-----	-----
Riverside.....	884	664.99	358	9,192	-----
San Bernardino.....	1,092	950.38	34,140	2,904	20,981
San Diego.....	6	14.30	21	-----	-----
Shasta.....	48	50.93	69	-----	-----
Sierra.....	625	674.70	3,074	5,283	69,498
Siskiyou.....	10	72.10	14	-----	-----
Stanislaus.....	1	1.82	-----	-----	-----
Trinity.....	70	213.67	89	142	268
Tulare.....	6	6.80	4	-----	-----
Tuolumne.....	77	223.70	85	-----	-----
Yuba.....	1	3.50	4	-----	-----
	7,397	5,426.30	138,444	34,501	2,267,587
Total, 1931.....	7,691	5,215.94	201,077	22,484	3,545,847

BY CLASSES OF ORE

Dry gold.....	2,546	3,491.01	5,171	9,536	18,735
Dry gold and silver.....	1	1.80	92	-----	-----
Dry silver.....	726	390.91	46,412	6,040	2,515
Copper.....	12	17.57	3	1,838	-----
Lead.....	4,112	1,525.01	86,766	17,087	2,246,337
	7,397	5,426.30	138,444	34,501	2,267,587

PRODUCTION BY MINING DISTRICTS

Mine production of gold, silver, copper, and lead in California in 1932, by counties and districts, in terms of recovered metals¹

County and district ¹	Mines producing		Ore, old tailings, and mill cleanings	Gold			Silver (lode and placer) ²	Copper	Lead	Total value
	Lode	Placer		Lode	Placer	Total				
Alameda County: Alma.....	1		Short tons 3,000	Fine ounces	Fine ounces	Fine ounces	Fine ounces	Pounds	Pounds	
Alpine County: Monitor.....	2		34	31.30		31.30	49	12,545		\$804
Amador County:							854	100	865	920
East Belt ³	11	4	2,370	1,447.59	251.42	1,699.01	586	953	2,613	35,425
Lancha Plana.....	2				3,710.65	3,710.65	375			76,812
Mother Lode ⁴	23	11	180,280	57,565.20	288.02	57,853.22	12,745	499		1,199,557
Butte County:										
Bidwell Bar.....		1			7.03	7.03				145
Butte Creek.....		4			73.77	73.77	8			1,527
Cherokee.....		5			401.51	401.51	42			8,312
Enterprise.....		1			82.82	82.82	9			1,715
Honcut Creek ⁵	1	5	50	26.48	103.29	129.77	13			2,687
Magalia.....	4	7	346	1,470.61	1,119.08	2,589.69	381			53,641
Merrimac.....		5			59.53	59.53	5			1,232
Oroville.....	5	11	354	150.85	8,345.51	8,496.36	711			175,836
Palermo.....		1			3.54	3.54				73
Yankee Hill.....	5	10	4,522	644.38	239.37	883.75	1,355	711		18,696
Calaveras County:										
Campo Seco.....		7			68.57	68.57	6			1,419
East Belt ³	31	8	3,914	1,062.91	268.80	1,331.71	740	130		27,746
Jenny Lind.....	3	4	7,431	1,335.58	486.17	1,820.05	897			37,877
Mother Lode ⁴	29	19	1,568	1,092.37	3,759.18	4,851.55	722			100,494
Colusa County: Sulphur Creek.....	1		10	17.96		17.96	4			372
Del Norte County:										
Beach.....		2			12.10	12.10				250
French Hill.....		9			65.80	65.80	7			1,362
Myrtle Creek.....		1			17.30	17.30	1			358
Smith River Basin.....		6			10.98	10.98				227
Eldorado County:										
East Belt ³	4	5	662	312.70	58.14	370.84	115			7,698
Mother Lode ⁴	45	44	42,144	6,847.77	1,527.95	8,375.72	1,429	123		173,563
Not Hill.....	2	1	151	28.42	2.95	31.37	4			649
Rescue.....	1	1	280	21.07	7.33	28.40	6			589

Fresno County:																				
Auberry.....		2				22.62		22.62		6										470
Copper King.....	1			20	26.81			26.81		1										554
Davis Flat.....	1			3	4.40			4.40		1										91
Frant.....		3						466.03		95										9,661
Mill Creek.....	1			22	30.86			30.86		1										638
Potter Ridge.....		1						1.56												32
Sycamore.....	2			14	49.73			49.73		10										1,031
Humboldt County:																				
Gold Bluff.....		3						49.83		4										1,031
Orleans.....		6						61.82		10										1,281
Weitchpec.....		1						11.64		1										241
Imperial County: Cargo Muchacho.....	5	1	11,351	723.02		6.68		729.70		518										15,230
Inyo County:																				
Carbonate.....	1		84	8.60				8.60		1,103		87	35,456							1,558
Cerro Gordo.....	6		2,881	135.84				135.84		79,213		8,944	2,058,446							87,463
Chidago.....	5		660	378.52				378.52		1,009			30,337							9,020
Chloride Cliff.....	7		498	712.77				712.77		2,025		1,026	60,949							17,197
Coso.....		1						4.94		1										102
Lone Pine.....	3		50	20.95				20.95		268			645							528
Modoc.....	3		112	88.81				88.81		26										1,843
South Park.....	3		1,523	339.13				339.13		88			2,145							7,099
Kern County:																				
Agua Caliente.....	5		86	39.34				39.34		56										829
Black Bob.....	1		471	137.79				137.79		128										2,884
Black Mountain.....		2						34.14		4										707
China Grade.....		1						7.31		1										151
Goler.....		1						13.70		2										284
Green Mountain.....	4		110	95.87				95.87		60										1,090
Kern River.....		1						148.75		65										3,093
Mojave.....	7	1	5,083	3,877.59		3.92		3,881.51		10,786		106	200							83,293
Pioneer.....	5	1	131	70.22		2.66		72.88		42										1,519
Plute.....	2	2						11.87		7										247
Randsburg ⁶	32	5	54,346	9,418.07		177.62		9,595.69		2,703			156							199,128
Red Rock.....		1				4.06		4.06												84
Woody.....	2	2	12	9.14		55.54		64.68		27										1,345
Lassen County: Hayden Hill.....	3		530	22.23				22.23		12										463

See footnotes at end of table.

Mine production of gold, silver, copper, and lead in California in 1932, by counties and districts, in terms of recovered metals¹—Continued

County and district ¹	Mines producing		Ore, old tailings, and mill cleanings	Gold			Silver (lode and placer) ¹	Copper	Lead	Total value
	Lode	Placer		Lode	Placer	Total				
Los Angeles County:			Short tons	Fine ounces	Fine ounces	Fine ounces	Fine ounces	Pounds	Pounds	
Pacoima Canyon.....		1				2.53				\$52
San Gabriel.....		10				276.82				5,734
Saugus.....		4				42.86				887
Madera County:										
Chowchilla.....		1				2.94				61
Coarse Gold.....	3	1	515	76.37	145.08	221.45	98			4,606
Fresno River.....		1				5.43				112
Hildreth.....	3		206	167.42		167.42	67			3,480
Potter Ridge.....	3	2	52	33.54		5.95	39.49			820
San Joaquin River.....		1				9.77	9.77			203
Mariposa County:										
Cathay.....		2				17.83	17.83			370
Colorado.....	5		82	163.22		163.22	23			3,380
Hite Cove.....	2		2,666	1,387.86		1,387.86	316			28,779
Hunter Valley.....	7	4	123	163.05	302.37	465.42	84			9,645
Mother Lode ⁴	24	3	4,214	2,226.21	104.32	2,330.53	1,147			48,499
Quartzburg.....	7	3	270	104.49		8.81	113.30			2,350
Whitlock.....	11	1	687	3,548.07	11.70	3,559.77	603			73,757
Mono County:										
Blind Spring.....	1		86	13.70		13.70	13,287	3,910	2,515	4,351
Bodie.....	3		908	1,147.19		1,147.19	5,213			25,185
Monterey County: Los Burros.....	2	2	11	30.39		8.03	38.42			795
Nevada County:										
French Corral.....	3	2	126	243.49	570.20	813.69	109			16,851
Grass Valley-Nevada City.....	20	21	345,170	170,615.46	2,190.67	172,806.13	105,537	28,835	116,299	3,607,287
Washington.....	4	15	1,102	253.13	809.30	1,062.43	115			21,994
You Bet.....		6				285.97	285.97			5,920
Yuba River ⁷		2				34.93	34.93			724
Placer County:										
American River.....		1			184.58	184.58	30			3,824
Bear River ⁸		1			25.47	25.47	2			528
Canada Hill.....		1			108.55	108.55	20			2,250
Dutch Flat.....	2	4	6	16.87	340.28	357.15	34			7,393
Foresthill.....	4	13	66	353.46	1,071.14	1,424.60	223			29,512
Iowa Hill.....	1	10	34	41.20	247.86	289.06	293			6,058
Last Chance.....		5			331.37	331.37	32			6,859
Michigan Bluff.....	2	10	180	55.40	556.46	611.86	73			12,669
Miners Ravine.....		3			30.64	30.64	4			634
Ophir.....	8	5	1,272	576.06	241.47	817.53	179			16,950

73501--34--17

Plumas County:												
Crescent Mills	5	2	2,736	309.10	63.45	372.55	101					7,729
East Fork Feather River		3			61.27	61.27	7					1,269
Edmanton		2			11.07	11.07						229
Genesee	2	3	34,821	1,582.52	70.49	1,653.01	28,683	1,043,257				107,985
Greenville	1	4	24	21.09	115.41	136.50	21					2,828
La Porte		3			787.00	787.00	75					16,290
Lights Canyon		2			56.19	56.19	2					1,163
Meadow Valley		1			25.15	25.15	4					521
Onion Valley		1			8.32	8.32	2					173
Seneca	1	7	10	4.56	111.66	116.22	14					2,406
Slate Creek		1			18.50	18.50	5					383
Spanish Creek		2			23.50	23.50	2					487
Riverside County:												
Arica	1	1	805	584.88	4.92	589.80	341	5,731				12,649
Chuckawalla	2	1	213	21.58	5.27	26.85	7					557
Pinon	6		660	235.68		235.68	60					4,889
Sacramento County: Folsom		9			101,599.57	101,599.57	3,972					2,101,370
San Bernardino County:												
Alvord		1			7.31	7.31						151
Barstow	1		75	35.42		35.42	32					741
Coolgardie		3			164.95	164.95	13					3,414
Dale	7		713	360.38		360.38	296	374	3,781			7,670
Dry Lake	3		71	19.47		19.47	3					403
Halloran Springs	3		96	133.40		133.40	338					2,853
Holcomb		2			20.73	20.73	1					429
Kelso	3		87	42.82		42.82	14					889
Providence	6		237	62.23		62.23	67					1,305
Randsburg	7		13,715	4,535.05		4,535.05	176,642	2,487				143,718
Silver Mountain	4		18	17.42		17.42	6					362
Summit Diggings		1			3.00	3.00						62
Whipple Mountain	3		80	85.06		85.06	232					1,823
San Diego County:												
El Cajon	5		130	157.56		157.56	49					3,271
Julian	4		258	78.37	2.84	81.21	56					1,695
San Joaquin County:												
Calaveras River		1			58.49	58.49	6					1,211
Mokelumne River		1			11.18	11.18						231

See footnotes at end of table.

Mine production of gold, silver, copper, and lead in California in 1932, by counties and districts, in terms of recovered metals¹—Continued

County and district ¹	Mines producing		Ore, old tallings, and mill cleanings	Gold			Silver (lode and placer) ²	Copper	Lead	Total value
	Lode	Placer		Lode	Placer	Total				
Shasta County:			Short tons	Fine ounces	Fine ounces	Fine ounces	Fine ounces	Pounds	Pounds	
Centerville.....	3	3	128	110.11	48.51	158.62	35			\$3,289
Clear Creek.....		3			55.63	55.63	5			1,151
Cottonwood.....		5			132.78	132.78	17			2,750
French Gulch.....	11	6	914	550.48	329.48	879.96	174			18,239
Harrison Gulch.....	1		100	7.70		7.70	1			159
Ono.....	1		1	1.30		1.30				27
Redding.....		1			19.35	19.35	2			401
Shasta.....					158.67	158.67	35			3,291
Slate Creek.....		3			19.01	19.01	1			393
Squaw Creek.....		4			45.44	45.44	5			940
Whiskeytown.....		2			160.24	160.24	42			3,324
Sierra County:										
Alleghany.....	8	27	46,076	24,204.21	764.21	24,968.42	4,555			517,428
American Hill.....	1	1	10	7.07	1.53	8.60	1			178
Downieville.....	11	12	832	398.72	408.35	807.07	129			16,720
Gibsonville ¹⁰		3			223.50	223.50	27			4,628
Middle Fork Yuba River.....		1			9.74	9.74	1			201
Port Wine.....					450.40	450.40	34			9,321
Sierra City.....	5	8	666	403.64	84.07	487.71	129			10,118
Slate Creek.....		1			172.64	172.64	17			3,574
Siskiyou County:										
Elliott Creek.....		5			94.91	94.91	16			1,967
Flamath River.....	2	31	46	66.21	1,728.93	1,795.14	288			37,190
North Central.....	15	33	1,209	738.99	1,093.61	1,832.60	314			37,972
Salmon River.....	17	42	312	350.29	1,443.59	1,793.88	286			37,164
Scott River.....	9	13	330	527.01	368.92	895.93	172			18,570
Stanislaus County:										
Knights Ferry.....	1	10	1	1.82	126.94	128.76	13			2,666
La Grange.....		3			7,266.08	7,266.08	675			150,393
Trinity County:										
Big Bar.....		6			574.96	574.96	68			11,904
Coffee Creek.....	3	10	696	478.58	518.93	997.51	367			20,723
Helena.....	1	2	411	538.45	265.84	804.29	147			16,667
Indian Creek.....		1	7		8.83	8.83				183
Junction City.....		12			778.20	778.20	77			16,109
Lewiston.....	8		1,431	474.85	6,822.42	7,297.27	976	142	258	151,140
New River.....		8			1,218.92	1,218.92	246			25,266
Salyer.....		1			324.77	324.77	30			6,722
Weaverville.....		15			1,433.05	1,433.05	153			29,667

Tuolumne County:																						
Columbia	25	10	693	1,454.73	475.51	1,930.24	206														39,960	
East Belt ²	19	5	269	225.50	544.74	770.24	177														15,972	
Mother Lode ³	23	9	1,729	1,470.59	373.24	1,843.83	375														39,221	
Yuba County:																						
Browns Valley		1			4.22	4.22																87
Brownsville	5	1	357	189.91	36.00	225.91	41															4,682
Dobbins	1	2	315	500.09	205.17	705.26	44															14,591
Honcut Creek ⁴		4			124.44	124.44	13															2,576
Smartsville		9			431.76	431.76	31															8,934
Yuba River ⁷		3			44,869.25	44,869.25	3,104															928,405
Undistributed ¹¹	94	107	266,140	28,181.70	23,062.81	51,244.51	22,484	307,916	102,751													1,088,140
Total California	718	828	1,060,361	338,637.13	230,529.86	569,166.99	493,533	1,417,876	2,417,416													12,066,750

¹ Only those districts shown separately for which Bureau of Mines is at liberty to publish figures; other producing districts listed in footnote 11 and output included under "Undistributed."

² Of the 493,533 ounces of silver produced 476,933 ounces were from lode mines and 16,600 ounces from placers.

³ East Belt district lies in Amador, Calaveras, Eldorado, and Tuolumne Counties.

⁴ Mother Lode district lies in Amador, Calaveras, Eldorado, Mariposa, and Tuolumne Counties.

⁵ Honcut Creek district lies in Butte and Yuba Counties.

⁶ Randsburg district lies in Kern and San Bernardino Counties.

⁷ Yuba River district lies in Nevada and Yuba Counties.

⁸ Bear Creek district lies in Placer and Yuba Counties.

⁹ Slate Creek district lies in Plumas and Sierra Counties.

¹⁰ Gibsonville district lies in Plumas and Sierra Counties.

¹¹ Includes following districts: Forbestown and Inskip, Butte County; Camanche and Copperopolis, Calaveras County; Mesquite, Picocho, and Potholes, Imperial County; Alabama Hills, Argus Mountains, Black Hills, Darwin, Fish Springs, Independence, Panamint, Paramount, Saratoga, Tecopa, Union, and White Mountains, Inyo County; Clear Creek, Long Tom, Pine Mountain, Rademacher, Stringer, and Tehachapi, Kern County; San Francisquito, Los Angeles County; Kinsley, Mariposa County; Snelling, Merced County; High Grade, Surprise Valley, and Winters, Modoc County; Dogtown, Homer, Jordan, and Masonic, Mono County; North Columbia and North San Juan, Nevada County; Auburn, Blue Canyon, Butcher Ranch, Colfax, Gold Run, and Rocklin, Placer County; Butte Valley, Gibsonville, Granite Basin, Johnsville, Keddie, Taylorsville, and Willow Creek, Plumas County; Bendigo, Monte Negro, Parris, Pineacote, San Jacinto, and Washington, Riverside County; Atolla, Bear Valley, Black Hawk, Calico, Goffs, Goldstone, Hart, Hikorum, Ivanpah, Kingston, Kramer Hills, Lava Bed, Ludlow, Lytle Creek, Monumental, Ord Mountain, Oro Grande, Paradise Range, Quail Springs, Slate Range, and Twenty-nine Palms, San Bernardino County; Deer Park, Descanso, Dulzura, and Foster, San Diego County; La Panza, San Luis Obispo County; Afterthought, Bayles, Beegum, Boulder Creek, Buckeye, Bully Choop, Churmtown, Dog Creek, Flat Creek, Gas Point, Igo, Iron Mountain, Kennett, Motion Creek, Muletown, Sacramento River, Salt Creek, South Fork, Stella, and Sulphur Creek, Shasta County; Canyon Creek, Forest, Goodyears Bar, Indian Hill, North Fork Yuba River, Pike, and Poverty Hill, Sierra County; Cherry Creek, Siskiyou County; Bully Hill, Callahan, Cinnabar, Dutch Creek, Forest Glen, Hayfork, Oregon Gulch, Rush Creek, and Trinity Center, Trinity County; Deer Creek, Tulare County; Snowy, Ventura County; and Bear River, Camptonville, Oak Valley, and Strawberry Valley, Yuba County.



GOLD, SILVER, COPPER, LEAD, AND ZINC IN OREGON

(DETAILED STATISTICS—MINE REPORT)

By V. C. HEIKES AND CHARLES WHITE MERRILL¹

SUMMARY

The total value of the gold, silver, copper, lead, and zinc produced in Oregon in 1932 was \$415,627, an increase of 30 percent over the metal output in 1931. The higher total value was achieved in spite of a fall in the average price of each of the metals other than gold. The number of lode mines reported as producing increased 74 percent, but the tonnage of ore treated decreased 27 percent. More placer mines operated in 1932 than in 1931. The total output of each of the five metals increased in both quantity and value; lode gold was the only item to show a decrease, and this was more than offset by an increase in placer gold. In 1932, as in 1931, the counties leading in total value of metal output, in order of importance, were Jackson, Josephine, Grant, and Baker; each of these increased its output in 1932.

In 1932 dry gold ore yielded 95 percent of the total value of the metals derived from lode mines; in 1931 all the ore reported was dry gold ore. Approximately two thirds of the ore in 1932 was amalgamated; the larger part of the remainder was concentrated by flotation or tabling, the resulting concentrates and some crude ore being smelted. Amalgamation played a much more important part in 1931 in the recovery of metals from Oregon ores.

The value of metal production herein reported has been calculated at the figures given in the table that follows. Gold is figured at the mint value for fine gold; that is, \$20.671835 an ounce. The silver price is the average New York price for bar silver. The copper, lead, and zinc prices are weighted averages, for each year, of all grades of primary metal sold by producers.

Prices of silver, copper, lead, and zinc, 1928-32

Year	Silver	Copper	Lead	Zinc	Year	Silver	Copper	Lead	Zinc
	<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>		<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>
1928.....	\$0.585	\$0.144	\$0.058	\$0.061	1931.....	\$0.290	\$0.091	\$0.037	\$0.038
1929.....	.533	.176	.063	.066	1932.....	.282	.063	.030	.030
1930.....	.385	.130	.050	.048					

¹ The assistance of Helen M. Gaylord and Opal Y. Sharman, of the Bureau of Mines, is acknowledged.

Mine production of gold, silver, copper, lead, and zinc in Oregon, 1928-32, in terms of recovered metals

Year	Mines producing		Ore and old tailings (short tons)	Gold		Silver	
	Lode	Placer		Fine ounces	Value	Fine ounces	Value
1928	41	90	12,676	10,931.19	\$225,968	30,924	\$18,091
1929	45	111	10,509	17,092.00	353,323	30,009	15,995
1930	47	143	8,994	14,401.34	297,702	9,000	3,465
1931	57	139	7,092	15,350.10	317,315	7,254	2,104
1932	99	169	5,195	19,861.21	410,568	8,616	2,430

Year	Copper		Lead		Zinc		Total value
	Pounds	Value	Pounds	Value	Pounds	Value	
1928	358,463	\$51,619	13,246	\$768	-----	-----	\$296,446
1929	655,746	115,411	20,180	1,271	-----	-----	486,000
1930	176,300	22,919	9,113	456	12,528	\$601	325,143
1931	1,700	155	3,497	129	-----	-----	319,703
1932	32,199	2,029	7,917	238	12,061	362	415,627

Gold.—Gold production in Oregon in 1932 increased 29 percent compared with 1931. Of the 19,861.21 fine ounces produced, placer mines yielded 16,201.90 ounces (82 percent). Jackson, Josephine, Grant, and Baker Counties led, in the order given, in output of total gold in both 1932 and 1931 and of placer gold in 1932. The Canyon, Waldo, Mormon Basin, and Gold Hill districts were among the most important in 1932, and placer deposits were the chief source of their gold.

In 1932 dry gold ore yielded 99 percent of the gold recovered from lode mines in Oregon; in 1931 all the ore treated was classified as dry gold ore. Amalgamation was the most important method of recovering gold from ore in 1932, but smelting, principally of crude ore, was also important. Amalgamation contributed less gold in 1932 than in 1931.

Silver.—The silver yield in Oregon was 8,616 fine ounces valued at \$2,430 in 1932 compared with 7,254 ounces valued at \$2,104 in 1931. Approximately three fourths of the silver came from lode mines in both 1932 and 1931. In 1932 Douglas, Grant, Jackson, and Baker Counties were the leading producers, each with an output exceeding 1,000 ounces; in 1931 only Grant County exceeded 1,000 ounces. In 1932 dry gold ore and copper ore were the principal sources of lode silver, and smelting (both crude ore and concentrates) was the principal method of recovery; in 1931 all the ore treated was classified as dry gold ore, and the methods of recovery were similar to those in 1932.

Copper.—Copper produced in Oregon was valued at \$2,029 in 1932 compared with \$155 in 1931. Virtually the entire output in 1932 came from the Riddles district of Douglas County. The chief source of the copper was copper ore directly smelted.

Lead.—Although Oregon's lead output more than doubled in 1932 it was valued at only \$238; over half came from the North Santiam district of Marion County. Lead-zinc ore was the principal source of lead, and smelting after flotation was the principal method of recovery.

Zinc.—No zinc was produced in Oregon in 1931. The output in 1932 was 12,061 pounds valued at \$362; it came from the North

GOLD, SILVER, COPPER, LEAD, AND ZINC IN OREGON 219

Santiam district of Marion County and was derived from lead-zinc ore treated by flotation, followed by smelting of the concentrates.

Mine production of gold, silver, copper, lead, and zinc in Oregon in 1932, by counties, in terms of recovered metals

County	Gold						Silver (lode and placer)	
	Lode		Placer		Total		Fine ounces	Value
	Fine ounces	Value	Fine ounces	Value	Fine ounces	Value		
Baker.....	710.69	\$14,691	2,098.37	\$43,377	2,809.06	\$58,068	1,012	\$285
Coos.....			76.43	1,580	76.43	1,580	10	3
Crook.....			1.00	21	1.00	21		
Curry.....	11.16	231	225.78	4,667	236.94	4,898	20	6
Douglas.....	569.43	11,771	153.47	3,173	722.90	14,944	2,781	784
Grant.....	607.64	12,561	3,334.97	68,940	3,942.61	81,501	2,555	721
Harney.....			4.39	91	4.39	91		
Jackson.....	718.71	14,857	6,418.65	132,685	7,137.36	147,542	1,280	361
Josephine.....	750.10	15,506	3,438.51	71,080	4,188.61	86,586	602	170
Lane.....	241.91	5,001	38.53	796	280.44	5,797	182	51
Lincoln.....			10.24	212	10.24	212		
Linn.....			19.06	394	19.06	394	4	1
Malheur.....	20.51	424	363.12	7,506	383.63	7,930	71	20
Marion.....	.33	7		.33	.33	7	89	25
Morrow.....			6.96	144	6.96	144		
Wallowa.....			4.53	94	4.53	94		
Wheeler.....	28.83	596	7.89	163	36.72	759	10	3
Total, 1931.....	3,659.31	75,645	16,201.90	334,923	19,861.21	410,568	8,616	2,430
	4,231.07	87,464	11,119.03	229,851	15,350.10	317,315	7,254	2,104

County	Copper		Lead		Zinc		Total value
	Pounds	Value	Pounds	Value	Pounds	Value	
Baker.....							\$58,353
Coos.....							1,583
Crook.....							21
Curry.....							4,904
Douglas.....	31,598	\$1,991					17,719
Grant.....	111	7	1,211	\$36			82,265
Harney.....							91
Jackson.....			692	21			147,924
Josephine.....							86,756
Lane.....	125	8	1,361	41			5,897
Lincoln.....							212
Linn.....							395
Malheur.....							7,950
Marion.....	365	23	4,653	140	12,061	\$362	557
Morrow.....							144
Wallowa.....							94
Wheeler.....							762
Total, 1931.....	32,199	2,029	7,917	238	12,061	362	415,627
	1,700	155	3,497	129			319,703

Ore sold or treated and lode mines producing in Oregon, 1931 and 1932, by counties

County	Ore (short tons)		Lode mines producing		County	Ore (short tons)		Lode mines producing	
	1931	1932	1931	1932		1931	1932	1931	1932
Curry.....	15	3	1	2	Malheur.....		28		2
Douglas.....	455	1,685	6	9	Marion.....		45		1
Grant.....	549	429	6	14	Union.....	15		1	
Jackson.....	356	1,352	15	30	Wheeler.....		40		1
Josephine.....	4,697	454	11	16					
Lane.....	300	392	1	4		7,092	5,195	57	99

MINING INDUSTRY

ORE CLASSIFICATION

Ore sold or treated in Oregon in 1932, with content in terms of recovered metals

Source	Ore	Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Dry gold ore.....	4,973	3,621.47	4,098	886	3,069	
Copper ore.....	176	35.00	2,170	30,948		
Lead ore.....	1	2.51	14		195	
Lead-zinc ore.....	45	.33	89	365	4,653	12,061
Total, lode mines.....	5,195	3,659.31	6,371	32,199	7,917	12,061
Total, placers.....		16,201.90	2,245			
	5,195	19,861.21	8,616	32,199	7,917	12,061
Total, 1931.....	7,092	15,350.10	7,254	1,700	3,497	

Value of metals from ore sold or treated in Oregon in 1932, by classes of ore

Class	Ore (short tons)	Gold	Silver	Copper	Lead	Zinc	Total value
Dry gold ore.....	4,973	\$74,862	\$1,156	\$56	\$92		\$76,166
Copper ore.....	176	724	612	1,950			3,286
Lead ore.....	1	52	4	6			62
Lead-zinc ore.....	45	7	25	23	140	\$362	557
	5,195	75,645	1,797	2,029	238	362	80,071
Total, 1931.....	7,092	87,464	1,650	155	129		89,398

Ore sold or treated in Oregon in 1932, by counties, with content in terms of recovered metals

DRY GOLD ORE

County	Ore	Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Baker.....	767	710.69	628			
Curry.....	3	11.16	3			
Douglas.....	1,509	534.43	593	650		
Grant.....	429	607.64	2,120	111	1,211	
Jackson.....	1,351	716.20	396		497	
Josephine.....	454	750.10	165			
Lane.....	392	241.91	175	125	1,361	
Malheur.....	28	20.51	12			
Wheeler.....	40	28.33	6			
	4,973	3,621.47	4,098	886	3,069	
Total, 1931.....	7,092	4,231.07	5,690	1,700	3,497	

COPPER ORE

Douglas.....	176	35.00	2,170	30,948		
	176	35.00	2,170	30,948		
Total, 1931.....	(1)					

LEAD ORE

Jackson.....	1	2.51	14		195	
	1	2.51	14		195	
Total, 1931.....	(1)					

LEAD-ZINC ORE

Marion.....	45	0.33	89	365	4,653	12,061
	45	.33	89	365	4,653	12,061
Total, 1931.....	(1)					

¹ None produced in 1931.

METALLURGIC INDUSTRY

Mine production of metals in Oregon in 1932, by methods of recovery

Method of recovery	Material treated	Gold		Silver	Copper	Lead	Zinc
		Short tons	Fine ounces	Fine ounces	Pounds	Pounds	Pounds
Ore amalgamated.....	3,275	2,324.10	1,267				
Ore smelted.....	475	944.80	3,987	31,184	2,886		
Concentrates smelted:							
Flotation.....	56	293.93	497	1,015	4,653	12,061	
Table.....	19	96.48	620		378		
Total, lode mines.....		3,659.31	6,371	32,199	7,917	12,061	
Total, placers.....		16,201.90	2,245				
		19,861.21	8,616	32,199	7,917	12,061	
Total, 1931.....		15,350.10	7,254	1,700	3,497		

Mine production of metals from gold and silver (amalgamation) mills in Oregon in 1932, by counties, in terms of recovered metals

County	Ore treated	Recovered in bullion		Concentrates and recovered metal		
		Gold	Silver	Concentrates produced	Gold	Silver
		Short tons	Fine ounces	Fine ounces	Short tons	Fine ounces
Baker.....	624	426.15	149			
Curry.....	3	11.16	3			
Douglas.....	121	82.73	11			
Grant.....	325	361.50	731	1	3.00	4
Jackson.....	1,311	600.41	199	8	38.70	93
Josephine.....	449	621.20	94	1	5.80	
Lane.....	377	176.41	69			
Malheur.....	25	15.71	5			
Wheeler.....	40	28.83	6			
Total, 1931.....	3,275	2,324.10	1,267	10	47.50	97
	6,394	3,200.86	739	6	19.40	16

Mine production of metals from concentrating mills in Oregon in 1932, by counties, in terms of recovered metals

County	Ore treated	Concentrates and recovered metal					
		Concentrates produced	Gold	Silver	Copper	Lead	Zinc
		Short tons	Fine ounces	Fine ounces	Pounds	Pounds	Pounds
Douglas.....	1,325	36	293.60	408	650		
Grant.....	75	9	48.98	523		378	
Marion.....	45	20	33	89	365	4,653	12,061
Total, 1931.....	1,445	65	342.91	1,020	1,015	5,031	12,061
	197	22	113.97	2,900	83	636	

Gross metal content of Oregon concentrates produced in 1932, by classes of concentrates

Class of concentrates	Concentrates produced (dry weight)	Gross metal content				
		Gold	Silver	Copper	Lead	Zinc
		Fine ounces	Fine ounces	Pounds	Pounds	Pounds
Dry gold.....	58	390.17	1,031	655	499	
Lead.....	4	24	81	297	4,645	
Zinc.....	13		5	186	155	13,675
Total, 1931.....	75	390.41	1,117	1,168	5,299	13,675
	28	133.37	2,916	81	669	

Mine production of metals from Oregon concentrates in 1932, in terms of recovered metals

BY COUNTIES

	Concentrates	Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Douglas.....	36	293.60	408	650		
Grant.....	10	51.98	527		378	
Jackson.....	8	38.70	93			
Josephine.....	1	5.80				
Marion.....	20	.33	89	365	4,653	12,061
	75	390.41	1,117	1,015	5,031	12,061
Total, 1931.....	28	133.37	2,916	53	636	

BY CLASSES OF CONCENTRATES

Dry gold.....	58	390.17	1,031	650	478	
Lead.....	4	.24	81	188	4,413	
Zinc.....	13		5	177	140	12,061
	75	390.41	1,117	1,015	5,031	12,061

Gross metal content of Oregon crude ore shipped to smelters in 1932, by classes of ore

Class of ore	Ore (dry weight)	Gross metal content			
		Gold	Silver	Copper	Lead
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>
Dry gold.....	298	907.29	1,803	321	2,952
Copper.....	176	35.00	2,170	31,905	
Lead.....	1	2.51	14		205
	475	944.80	3,987	32,226	3,157
Total, 1931.....	501	897.34	2,035	1,797	3,010

Mine production of metals from Oregon crude ore shipped to smelters in 1932, in terms of recovered metals

BY COUNTIES

	Ore	Gold	Silver	Copper	Lead
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>
Baker.....	143	284.54	479		
Douglas.....	239	193.10	2,344	30,948	
Grant.....	29	194.16	862	111	833
Jackson.....	41	79.60	118		692
Josephine.....	5	123.10	71		
Lane.....	15	65.50	106	125	1,361
Malheur.....	3	4.80	7		
	475	944.80	3,987	31,184	2,886
Total, 1931.....	501	897.34	2,035	1,647	2,861

BY CLASSES OF ORE

Dry gold.....	298	907.29	1,803	236	2,691
Copper.....	176	35.00	2,170	30,948	
Lead.....	1	2.51	14		195
	475	944.80	3,987	31,184	2,886

PRODUCTION BY MINING DISTRICTS

Mine production of gold, silver, copper, lead, and zinc in Oregon in 1932, by counties and districts, in terms of recovered metals ¹

County and district ¹	Mines producing		Ore	Gold			Silver (lode and placer) ²	Copper	Lead	Zinc	Total value
	Lode	Placer		Lode	Placer	Total					
Baker County:			<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	
Baker.....	7	7	49	162.97	163.04	326.01	114				\$6,771
Cornucopia.....		1			2.58	2.58					53
Greenhorn ³	4	3	173	160.01	35.85	195.86	66				4,068
Mormon Basin ⁴	2	5	275	150.93	1,015.02	1,165.95	210				24,161
Pine Creek.....		5			500.06	500.06	84				10,361
Snake River ⁵		3			44.57	44.57	9				924
Sparta.....	1	4	1	1.97	33.73	35.70	7				740
Sumpter.....	1	4	124	196.00	231.05	427.05	502				8,970
Coos County:											
Powers.....		1			18.96	18.96	5				393
Randolph.....		2			57.47	57.47	5				1,190
Curry County:											
Gold Beach.....		2			165.28	165.28	11				3,420
Mule Creek.....	1	1	1	1.46	3.27	4.73	2				99
Rogue River.....		4			5.61	5.61					116
Sixes.....		4			51.62	51.62	5				1,068
Douglas County:											
Cow Creek.....		5			93.07	93.07	11				1,927
Green Mountain.....	2	3	455	219.63	35.13	254.76	262				5,340
Olalla.....		2			5.70	5.70					118
Riddles.....	4	2	197	100.60	100.60	2,175	30,948				4,643
Umpqua.....		2			3.94	3.94					81
Grant County:											
Cable Cove.....		1			8.44	8.44	2				175
Canyon.....	2	7	31	129.54	3,141.13	3,270.67	423				67,730
Desolation.....		1			3.12	3.12					64
Granite.....	6	9	295	382.15	141.63	523.78	2,090	111	1,211		11,460
Greenhorn ³	2	1	26	52.25	56.75	109.00	24				1,180
Quartzburg.....	2	1	71	33.57	33.57	67.14	10				697
Susanville.....	2	3	6	10.13	36.15	46.28	6				959
Jackson County:											
Gold Hill.....	13	11	389	255.08	842.98	1,098.06	216				22,760
Jacksonville.....	8	9	394	341.47	477.47	818.94	321		101		17,023
Upper Applegate.....	5	7	15	45.05	783.42	828.47	136				17,164

See footnotes at end of table.

GOLD, SILVER, COPPER, LEAD, AND ZINC IN OREGON

Mine production of gold, silver, copper, lead, and zinc in Oregon in 1932, by counties and districts, in terms of recovered metals ¹—Continued

County and district ¹	Mines producing		Ore	Gold			Silver (lode and placer) ²	Copper	Lead	Zinc	Total value
	Lode	Placer		Lode	Placer	Total					
Josephine County:			<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	
Galice.....	4	6	220	268.91	229.99	498.90	58				\$10,329
Grants Pass.....	4	6	44	158.54	231.96	390.50	99				8,100
Illinois River.....	2	2	11	90.84	310.43	401.27	130				8,332
Lower Applegate.....		2			72.20	72.20	13				1,497
Waldo.....	2	11	101	188.76	2,110.73	2,299.49	234				47,601
Lane County:											
Blue River.....	2		12	2.51		2.51	2				52
Bohemia.....	2	1	380	239.40	38.53	277.93	180	125	1,361		5,845
Lincoln County: Collins Creek.....		2			10.24	10.24					212
Linn County:											
Quartzville.....		4			17.77	17.77	4				368
Santiam.....		1			1.29	1.29					27
Malheur County: Mormon Basin ⁴	2	5	28	20.51	277.13	297.64	61				6,170
Marion County: North Santiam.....	1		45	.33		.33	89	365	4,653	12,061	557
Morrow County: Columbia River.....		1			6.96	6.96					144
Undistributed ⁵	18	24	1,852	446.70	4,989.88	5,436.58	1,050	650	591		112,738
Total Oregon.....	99	169	5,195	3,659.31	16,201.90	19,861.21	8,616	32,199	7,917	12,061	415,627

¹ Only those districts shown separately for which Bureau of Mines is at liberty to publish figures; other producing districts listed in footnote 6 and output included under "Undistributed."
² Of the 8,616 ounces of silver produced 6,371 ounces were from lode mines and 2,245 ounces from placers.
³ Greenhorn district lies in both Baker and Grant Counties.
⁴ Mormon Basin district lies in both Baker and Malheur Counties.
⁵ Snake River district lies in both Baker and Malheur Counties.
⁶ Includes following districts: Connor Creek, Eagle Creek, Rock Creek, Virtue, and Weatherby, Baker County; Ochoco, Crook County; Chetco, Curry County; Nugget, Douglas County; Harney, Harney County; Ashland, Elk Creek, and Foothills, Jackson County; Althouse and Greenback, Josephine County; Malheur and Snake River, Malheur County; Imnaha, Wallowa County; and Spanish Gulch, Wheeler County.

ORE CONCENTRATION

(DETAILED STATISTICS)

METALLURGICAL RESULTS AND FLOTATION REAGENTS

By T. H. MILLER AND R. L. KIDD

SUMMARY

The total production of nonferrous ore was 26,321,679 short tons in 1932 compared with 54,764,842 tons in 1931, about 76,725,000 tons in 1930, and about 106,179,000 tons in 1929. The larger part of the decrease has been accounted for by the curtailment in output of copper ore, but this class of ore still amounts to nearly half the total. Of the total ore produced 76.74 percent (20,198,804 tons) was treated by concentration, 4.11 percent shipped direct to smelters, 13.75 percent treated at gold and silver mills, and the remainder (5.40 percent) treated at miscellaneous plants, including copper leaching plants, magnetic separation plants, and slag fuming plants. Virtually all the ore concentrated was treated at plants having flotation equipment. The total nonferrous ore produced in 1932 as given in table 1 does not include copper-iron ore treated by flotation.

TABLE 1.—Total nonferrous ore produced in the United States in 1932, by classes of ore and methods of treatment, in dry tons

Method of treatment	Copper ore	Copper-lead ore	Lead ore	Lead-zinc ore	Zinc ore	Gold and silver ore	Total ore
Straight flotation concentration	8,956,121	165,490	35,816	1,141,646	194,396	97,706	10,591,175
Combined gravity and flotation concentration	2,022,346	-----	4,315,740	1,909,402	1,105,993	202,488	9,555,969
Straight gravity concentration	15	-----	3,157	24,500	11,900	12,088	51,660
Total ore concentrated	10,978,482	165,490	4,354,713	3,075,548	1,312,289	312,282	20,198,804
Direct smelting	752,527	1,616	99,155	1,216	715	225,612	1,080,841
Amalgamation or cyanidation	-----	-----	-----	-----	-----	3,619,718	3,619,718
Miscellaneous methods	581,207	-----	-----	260,600	580,508	-----	1,422,316
Total ore, all methods:							
1932	12,312,216	167,106	4,453,868	3,337,364	1,893,513	4,157,612	26,321,679
1931	34,447,480	203,334	6,043,169	6,023,825	3,912,958	4,134,076	54,764,842

CONSUMPTION

The following tables show the consumption of flotation reagents, screen analyses, alkalinities, and pulp densities by classes of ore treated at 141 plants in the United States in 1932. Comparative data for earlier years also are given.

TABLE 2.—Consumption of reagents in the treatment of all ores in 1932

[141 plants treating 16,124,007 tons of ore]

Reagent	Plants using	Ore treated (tons)	Consumption of reagents (pounds)		
			Total, 1932	Per ton	
				1932	1931
I. Frothers:					
Pine oils.....	115	11,335,507	1,189,077	0.105	0.123
Cresylic acid.....	63	7,207,153	1,187,931	.165	.165
Total frothers.....	141	16,124,007	2,377,008	.147	.153
II. Collectors:					
Distillation products:					
Coal-tar creosotes.....	26	2,215,300	421,548	.190	.186
Wood-tar creosotes.....	2	19,576	700	.036	.052
Petroleum products.....	1	1,417,810	1,374	.001	.103
Blast-furnace oils.....	1	615,285	75,330	.122	.080
Total distillation products.....	29	4,250,595	498,952	.117	.126
Synthetic products:					
Ethyl xanthates.....	97	8,437,200	716,827	.085	.111
Butyl xanthates.....	5	2,002,957	172,311	.086	.052
Amyl xanthates.....	35	3,416,021	119,722	.035	.028
Xanthate derivatives.....	7	3,162,664	36,269	.011	.011
Dicresol-dithiophosphoric acid.....	51	3,795,723	164,005	.043	.110
Sodium dicresol-dithiophosphate.....	28	2,060,262	90,738	.044	.035
Sodium diethyl-dithiophosphate.....	1	3,169,411	40,424	.013	.013
Thiocarbamide.....	2	157,152	14,353	.091	.061
Total synthetic products.....	140	15,972,124	1,354,649	.085	.100
Total collectors.....	141	16,124,007	1,853,601	.115	.119
III. Acids and alkalis:					
Acids: Sulphuric acid.....					
	8	1,668,602	1,201,871	.072	21.342
Alkalies:					
Sodium carbonate.....	44	1,191,506	666,040	.559	.586
Sodium hydroxide.....	4	142,611	55,800	.391	.057
Lime.....	44	12,684,084	44,547,277	3.512	3.859
Total alkalies.....	80	13,177,669	45,269,117	3.435	3.852
IV. Other inorganic reagents:					
Sulphidizing: Sodium sulphide.....					
	17	2,378,074	444,110	.187	.723
Activating: Copper sulphate.....					
	59	3,066,100	2,066,572	.674	.593
Depressing:					
Cyanides.....	21	6,301,387	207,980	.033	.050
Sodium sulphite.....	2	312,097	340,959	1.092	1.158
Sodium silicate.....	10	318,720	98,838	.310	.862
Zinc sulphate.....	18	2,180,114	815,530	.374	.290
Sodium bichromate.....	1	42,617	8,766	.206	.350
Total depressing.....	34	6,798,608	1,472,073	.217	.166
Miscellaneous:					
Sodium chloride.....	1	33,423	35,750	1.070	1.243
Starch.....	2	58,245	49,380	.848	.252
Chlorine.....	1	34,366	28,350	.825	.....
Total reagents.....	141	16,124,007	54,797,832	3.399	3.979

TABLE 3.—Comparison of consumption of reagents, 1928-32

	1928	1929	1930	1931	1932
Ore treated..... thousands of tons.	59,064	65,405	47,259	35,956	16,124
Reagent consumption:					
Frothers..... thousands of pounds.	9,052	9,283	7,106	5,508	2,377
Collectors:					
Distillation..... do	3,021	2,345	1,107	753	499
Synthetic..... do	4,863	5,925	5,018	3,543	1,355
Acids..... do	12,442	12,099	12,060	11,143	1,202
Alkalies..... do	215,858	234,598	154,424	115,744	45,269
Sulphidizing..... do	2,399	2,589	1,226	643	444
Activating..... do	6,898	6,723	5,300	3,325	2,067
Depressing..... do	9,500	6,050	4,393	2,409	1,585
Total reagents..... do	264,033	279,612	190,724	143,068	54,798
Reagent consumption:					
Frothers..... pounds per ton of ore treated.	0.155	0.144	0.152	0.153	0.147
Collectors:					
Distillation..... do	.128	.124	.106	.126	.117
Synthetic..... do	.082	.091	.107	.100	.085
Acids..... do	27.716	22.030	24.933	21.342	.072
Alkalies..... do	3.873	3.735	3.560	3.852	3.435
Sulphidizing..... do	.329	.713	.154	.723	.187
Activating..... do	.721	.627	.697	.593	.674
Depressing..... do	.287	.213	.239	.174	.230
Total reagents..... do	4.470	4.275	4.036	3.979	3.399

COPPER ORES

TABLE 4.—Consumption of reagents in the treatment of sulphide copper ores in 1932
[15 plants treating 9,725,582 tons of ore]

Reagent	Plants using	Ore treated (tons)	Consumption of reagents (pounds)		
			Total, 1932	Per ton	
				1932	1931
I. Frothers:					
Pine oils.....	13	6,505,434	826,592	0.127	0.143
Cresylic acid.....	3	3,337,270	557,207	.167	.172
Total frothers.....	15	9,725,582	1,383,799	.142	.154
II. Collectors:					
Distillation products:					
Petroleum products.....	1	1,417,810	1,374	.001	-----
Blast-furnace oils.....	1	615,285	75,330	.122	.080
Total distillation products.....	2	2,033,095	76,704	.038	.080
Synthetic products:					
Ethyl xanthates.....	10	3,945,307	307,591	.078	.105
Butyl xanthates.....	2	1,747,468	124,649	.071	.049
Amyl xanthates.....	2	1,468,547	33,299	.023	.009
Xanthate derivatives.....	3	2,521,016	5,635	.002	.004
Dicresol-dithiophosphoric acid.....	3	933,207	49,857	.053	.143
Sodium dicresol-dithiophosphate.....	2	732,407	25,910	.035	.026
Sodium diethyl-dithiophosphate.....	1	3,169,411	40,424	.013	.013
Total synthetic products.....	15	9,725,582	587,365	.060	.074
Total collectors.....	15	9,725,582	664,069	.068	.081
III. Acids and alkalies:					
Acids: Sulphuric acid.....	1	1,417,810	1,189,977	.839	-----
Alkalies:					
Sodium carbonate.....	1	16,175	2,000	.124	-----
Lime.....	15	9,725,582	42,478,024	4.368	4.177
Total alkalies.....	15	9,725,582	42,480,024	4.368	4.177
IV. Other inorganic reagents:					
Sulphidizing: Sodium sulphide.....	3	1,462,014	6,978	.005	.210
Depressing: Cyanides.....	2	3,239,222	63,390	.020	.034
Total reagents.....	15	9,725,582	45,788,237	4.708	4.424

TABLE 5.—Comparison of metallurgical results in the treatment of copper ores, 1931 and 1932

	Method of concentration			
	Straight flotation		Combined gravity and flotation	
	1931	1932	1931	1932
Number of plants.....	20	12	5	3
Total ore treated..... dry tons.....	24,496,036	8,846,011	1,482,624	879,571
Gold content..... ounces.....	185,302.87	73,328.14	12,640.11	11,656.14
Do..... ounce per ton.....	0.008	0.008	0.009	0.013
Silver content..... ounces.....	5,456,484	2,126,492	637,017	406,063
Do..... ounce per ton.....	0.223	0.240	0.430	0.462
Copper content..... pounds.....	683,902,734	260,308,636	68,929,857	42,655,952
Do..... percent.....	1.396	1.471	2.325	2.425
Concentrates produced..... dry tons.....	1,157,939	415,245	180,992	107,868
Gold content..... ounces.....	132,661.59	51,486.00	11,338.32	10,569.80
Do..... ounce per ton.....	0.115	0.124	0.063	0.098
Silver content..... ounces.....	4,898,662	1,942,254	589,539	381,253
Do..... ounce per ton.....	4.231	4.677	3.257	3.534
Copper content..... pounds.....	619,291,816	234,413,749	59,362,064	39,983,124
Do..... percent.....	26.741	28.226	16.399	18.533
Ratio of concentration: Ore to concentrates.....	21.15:1	21.30:1	8.192:1	8.154:1
Recoveries:				
Gold..... percent.....	71.59	70.21	89.70	90.68
Silver..... do.....	89.78	91.34	92.55	93.89
Copper..... do.....	90.55	90.05	83.21	93.73

TABLE 6.—Comparison of screen analyses, alkalinities, and pulp densities in the treatment of copper ores, 1929-32

SCREEN ANALYSES OF FLOTATION FEED

	1929	1930	1931	1932
Number of plants.....	22	31	18	15
Ore treated..... dry tons.....	46,284,546	33,967,845	25,978,225	9,725,582
+65 mesh..... percent.....	7.99	7.80	6.70	6.54
-65+100 mesh..... do.....	9.44	11.15	11.42	9.98
-100+150 mesh..... do.....	9.55	10.42	11.20	10.78
-150+200 mesh..... do.....	10.23	10.44	10.00	11.00
-200 mesh..... do.....	62.79	60.19	60.68	61.70

ALKALINITY OF FLOTATION CIRCUIT

	11	18	9	10
Number of plants.....	(1)	(1)	(1)	(1)
Ore treated..... dry tons.....	(1)	26,107,615	19,654,724	7,160,221
Alkalinity of copper circuit..... pH units.....	7.0-13.0	9.50	9.73	9.66

PULP DENSITY OF FLOTATION CIRCUIT

	(1)	(1)	15	12
Number of plants.....	(1)	(1)	(1)	(1)
Ore treated..... dry tons.....	(1)	(1)	25,629,211	7,138,706
Pulp density..... percent solids.....	(1)	(1)	25.29	25.92

¹ Figures not available.

TABLE 7.—Consumption of reagents in the treatment of native copper ores in 1932
[5 plants treating 622,838 tons of ore]

Reagent	Plant using	Ore treated (tons)	Consumption of reagents (pounds)		
			Total, 1932	Per ton	
				1932	1931
I. Frothers: Pine oils.....	5	622,838	59,750	0.096	0.109
II. Collectors:					
Ethyl xanthates.....	4	517,838	66,250	.128	.106
Dicrosol-dithiophosphoric acid.....	1	105,000	15,700	.150	.139
Total collectors.....	5	622,838	81,950	.132	.115
III. Acids ¹ and alkalis: Lime.....	1	140,000	50,000	.357	.....
Total reagents.....	5	622,838	191,700	.308	.225

¹ No acids consumed.

TABLE 8.—Comparison of metallurgical results in the treatment of native copper ores, 1930-32

	1930	1931	1932
Number of plants.....	5	6	5
Total ore treated..... dry tons	6,176,697	3,570,748	1,142,775
Copper content..... pounds	169,733,360	126,722,164	57,204,804
Do..... percent	1.37	1.77	2.50
Gravity concentrates produced..... dry tons	99,269	69,294	31,913
Copper content..... pounds	140,778,802	102,464,095	46,583,678
Do..... percent	70.91	73.93	72.99
Flotation concentrates produced..... dry tons	18,659	14,052	5,763
Copper content..... pounds	15,783,937	13,658,401	4,755,190
Do..... percent	42.30	48.60	41.26
Ratio of concentration:			
Ore to gravity concentrates.....	62.22:1	51.53:1	35.81:1
Ore to flotation concentrates.....	331.03:1	254.11:1	198.30:1
Ore to all concentrates.....	52.38:1	42.84:1	30.33:1
Copper recoveries:			
In gravity concentrates..... percent	82.94	80.86	81.43
In flotation concentrates..... do	9.30	10.78	8.31
In all concentrates..... do	92.24	91.64	89.74

TABLE 9.—Comparison of screen analyses, alkalinities, and pulp densities in the treatment of native copper ores, 1930-32

SCREEN ANALYSES OF FLOTATION FEED

	1930	1931	1932
Number of plants.....	5	5	5
Ore treated..... dry tons	2,346,070	1,662,048	622,838
+65 mesh..... percent	12.68	14.94	13.45
-65+100 mesh..... do	15.18	14.00	11.25
-100+150 mesh..... do	6.61	7.84	8.19
-150+200 mesh..... do	6.49	6.02	6.42
-200 mesh..... do	59.04	57.20	60.69

ALKALINITY OF FLOTATION CIRCUIT

	1930	1931	1932
Number of plants.....	5	5	5
Ore treated..... dry tons	2,346,070	1,662,048	622,838
Alkalinity of copper circuit..... pH units	8.61	8.47	8.59

PULP DENSITY OF FLOTATION CIRCUIT

	1930	1931	1932
Number of plants.....	(1)	4	5
Ore treated..... dry tons	(1)	1,402,048	622,838
Pulp density..... percent solids	(1)	29.28	28.77

¹ Figures not available.

LEAD ORES

TABLE 10.—Consumption of reagents in the treatment of lead ores in 1932

[25 plants treating 2,921,442 tons of ore]

Reagent	Plants using	Ore treated (tons)	Consumption of reagents (pounds)		
			Total, 1932	Per ton	
				1932	1931
I. Frothers:					
Pine oils.....	15	1,505,693	14,740	0.010	0.024
Cresylic acid.....	16	2,530,998	527,852	.209	.184
Total frothers.....	25	2,921,442	542,592	.186	.173
II. Collectors:					
Distillation products: Coal-tar creosotes.....					
	6	1,263,603	18,727	.015	.026
Synthetic products:					
Ethyl xanthates.....	18	2,614,499	138,550	.053	.081
Amyl xanthates.....	7	497,130	36,067	.053	.089
Xanthate derivatives.....	1	429,880	4,738	.011	.022
Dicresol-dithiophosphoric acid.....	13	2,127,385	54,509	.026	.077
Total synthetic products.....	24	2,769,559	234,464	.085	.111
Total collectors.....	25	2,921,442	253,191	.087	.110
III. Acids¹ and alkalis:					
Alkalies:					
Sodium carbonate.....	11	581,717	137,825	.237	.089
Lime.....	5	1,314,947	163,650	.124	.291
Total alkalies.....	15	1,466,784	301,475	.206	.168
IV. Other inorganic reagents:					
Sulphidizing: Sodium sulphide.....	6	461,755	182,288	.395	4.052
Activating: Copper sulphate.....	3	861,012	78,976	.092	.065
Depressing:					
Cyanides.....	6	2,161,560	30,633	.014	.032
Sodium silicate.....	2	15,575	87,040	5.588	3.866
Zinc sulphate.....	5	1,376,892	209,165	.152	.049
Total depressing.....	9	2,306,295	326,838	.142	.116
Total reagents.....	25	2,921,442	1,685,360	.577	.569

¹ No acids consumed.

TABLE 11.—Comparison of metallurgical results in the treatment of lead ores, 1931 and 1932

	Method of concentration			
	Straight flotation		Combined gravity and flotation	
	1931	1932	1931	1932
Number of plants.....	15	17	13	8
Total ore treated..... dry tons.....	431,790	200,842	5,652,446	4,229,314
Gold content..... ounces.....	6,088.18	3,671.63	1,102.05	60.00
Do..... ounce per ton.....	0.014	0.018	Trace.	Trace.
Silver content..... ounces.....	3,974,490	4,028,178	2,803,283	2,590,098
Do..... ounces per ton.....	9.205	20.056	0.496	0.612
Copper content..... pounds.....	892,907	1,039,347	754,915	562,319
Do..... percent.....	0.103	0.259	0.007	0.067
Lead content..... pounds.....	30,879,783	9,001,225	463,227,983	363,207,494
Do..... percent.....	3.576	2.241	4.088	4.294
Zinc content..... pounds.....	30,092		30,405,867	18,660,116

TABLE 11.—Comparison of metallurgical results in the treatment of lead ores, 1931 and 1932—Continued

	Method of concentration			
	Straight flotation		Combined gravity and flotation	
	1931	1932	1931	1932
Lead concentrates produced.....dry tons.....	31,341	12,727	334,591	265,013
Gold content.....ounces.....	4,831.08	3,025.36	896.11	-----
Do.....ounce per ton.....	0.154	0.238	0.003	-----
Silver content.....ounces.....	3,667,878	3,756,337	2,606,225	2,264,050
Do.....ounces per ton.....	117.031	295.147	7.789	8.543
Copper content.....pounds.....	788,983	955,603	613,902	473,267
Do.....percent.....	1.259	3.754	0.092	0.893
Lead content.....pounds.....	28,274,804	8,153,676	438,326,045	342,807,795
Do.....percent.....	45.108	32.033	65.502	64.678
Other concentrates produced.....dry tons.....	27	355	7,524	5,294
Gold content.....ounces.....	-----	18.48	36.00	37.43
Do.....ounce per ton.....	-----	0.052	0.005	0.007
Silver content.....ounces.....	500	257	48,276	20,961
Do.....ounces per ton.....	18.519	0.724	6.416	3.959
Copper content.....pounds.....	-----	876	21,445	17,996
Do.....percent.....	-----	0.123	0.143	0.170
Lead content.....pounds.....	11,500	19,450	442,340	308,720
Do.....percent.....	21.296	2.740	2.940	2.916
Zinc content.....pounds.....	22,161	-----	8,200,831	5,709,530
Do.....percent.....	41.039	-----	54.498	53.925
Ratio of concentration: Ore to lead concentrates.....	13.78:1	15.78:1	16.89:1	15.96:1
Recoveries:				
Gold in lead concentrates.....percent.....	79.35	82.40	81.31	-----
Silver in lead concentrates.....do.....	92.29	93.25	92.97	87.41
Copper in lead concentrates.....do.....	88.36	91.94	81.32	84.16
Lead in lead concentrates.....do.....	91.56	90.58	94.62	94.38
Gold in all concentrates.....do.....	79.35	82.90	84.58	63.37
Silver in all concentrates.....do.....	92.30	93.26	94.69	88.22
Copper in all concentrates.....do.....	88.36	92.03	84.16	87.36
Lead in all concentrates.....do.....	91.60	90.80	94.72	94.47
Zinc in all concentrates.....do.....	73.64	-----	26.97	30.60

TABLE 12.—Comparison of screen analyses, alkalinities, and pulp densities in the treatment of lead ores, 1930-32

SCREEN ANALYSES OF FLOTATION FEED

	1930	1931	1932
Number of plants.....	20	19	16
Ore treated.....dry tons.....	5,159,705	3,848,408	2,915,736
+65 mesh.....percent.....	4.98	5.33	4.47
-65+100 mesh.....do.....	10.34	9.30	9.10
-100+150 mesh.....do.....	10.24	10.79	11.33
-150+200 mesh.....do.....	11.31	11.70	12.35
-200 mesh.....do.....	63.13	62.88	62.75

ALKALINITY OF FLOTATION CIRCUITS

	1930	1931	1932
Number of plants.....	18	15	15
Ore treated.....dry tons.....	5,062,388	3,663,931	2,763,953
Alkalinity of lead circuit.....pH units.....	8.11	8.16	8.09
Alkalinity of zinc circuit.....do.....	19.09	28.68	28.26

PULP DENSITY OF FLOTATION FEED

	(1)	11	15
Number of plants.....	(1)	2,517,841	2,763,853
Ore treated.....dry tons.....	(1)	28.75	28.64
Pulp density.....percent solids.....	(1)		

1 2 plants treating 1,776,978 tons of ore.
 2 4 plants treating 1,871,682 tons of ore.
 3 4 plants treating 862,315 tons of ore.
 4 Not determined.

LEAD-ZINC ORES

TABLE 13.—Consumption of reagents in the treatment of lead-zinc ores in 1932

[36 plants treating 1,389,303 tons of ore]

Reagent	Plants using	Ore treated (tons)	Consumption of reagents (pounds)		
			Total, 1932	Per ton	
				1932	1931
I. Frothers:					
Pine oils.....	30	1,314,603	159,697	0.121	0.098
Cresylic acid.....	24	1,023,690	63,120	.062	.096
Total frothers.....	36	1,389,303	222,817	.160	.158
II. Collectors:					
Distillation products: Coal-tar creosotes.....	11	461,154	311,449	.675	.293
Synthetic products:					
Ethyl xanthates.....	28	1,027,365	159,540	.155	.202
Butyl xanthates.....	1	185,515	46,750	.252	.113
Amyl xanthates.....	5	392,520	22,295	.057	.143
Xanthate derivatives.....	3	211,768	25,896	.122	.097
Dicresol-dithiophosphoric acid.....	19	514,228	28,847	.056	.070
Sodium dicresol-dithiophosphate.....	12	471,476	39,764	.084	.054
Thiocarbamilide.....	2	157,152	14,353	.091	.100
Total synthetic products.....	36	1,389,303	337,445	.243	.329
Total collectors.....	36	1,389,303	648,894	.467	.491
III. Acids and alkalis:					
Acids: Sulphuric acid.....	3	90,740	3,580	.039	.008
Alkalies:					
Sodium carbonate.....	12	366,507	310,798	.848	.816
Lime.....	13	1,106,938	1,213,988	1.097	1.899
Total alkalies.....	20	1,150,338	1,524,786	1.341	2.115
IV. Other inorganic reagents:					
Sulphidizing: Sodium sulphide.....	2	384,015	233,449	.608	.544
Activating: Copper sulphate.....	36	1,389,303	1,461,149	1.052	.994
Depressing:					
Cyanides.....	10	797,996	113,105	.142	.243
Sodium sulphite.....	2	312,097	340,959	1.092	1.159
Sodium silicate.....	3	229,484	5,264	.023	.154
Zinc sulphate.....	12	801,822	606,085	.756	.722
Sodium bichromate.....	1	42,617	8,766	.206	.350
Total depressing.....	16	1,126,821	1,074,179	.953	.931
Miscellaneous: Sodium chloride.....	1	33,423	35,750	1.070	1.243
Total reagents.....	36	1,389,303	5,204,604	3.746	3.943

TABLE 14.—Comparison of metallurgical results in the treatment of lead-zinc ores, 1931 and 1932

	Method of concentration			
	Straight flotation		Combined gravity and flotation	
	1931	1932	1931	1932
Number of plants.....	21	15	31	21
Total ore treated..... dry tons	1,540,855	1,139,583	3,099,176	1,422,345
Gold content..... ounces	87,094.73	64,676.71	2,647.00	74.60
Do..... ounce per ton	0.057	0.057	0.001	Trace
Silver content..... ounces	7,666,806	5,866,351	479,344	18,915
Do..... ounces per ton	4.976	5.148	0.155	0.013
Copper content..... pounds	10,909,734	11,022,668	686,275	4,000
Do..... percent	0.354	0.486	0.011	Trace
Lead content..... pounds	222,199,426	157,964,737	60,520,995	22,570,380
Do..... percent	7.210	6.931	0.976	0.793
Zinc content..... pounds	301,925,036	226,007,996	277,599,498	128,745,420
Do..... percent	9.797	9.916	4.479	4.526
Lead concentrates produced..... dry tons	170,498	122,558	32,307	10,811
Gold content..... ounces	52,696.23	38,056.60	1,104.57	32.69
Do..... ounce per ton	0.309	0.310	0.034	0.003
Silver content..... ounces	6,089,075	4,901,447	271,257	14,496
Do..... ounces per ton	35.713	39.993	8.396	1.341
Copper content..... pounds	7,036,522	7,225,612	218,252	2,164
Do..... percent	2.064	2.948	0.333	0.010
Lead content..... pounds	195,654,161	138,808,392	39,811,171	16,266,548
Do..... percent	57.377	56.630	61.614	75.232
Zinc content..... pounds	22,337,188	16,969,011	3,290,402	589,750
Do..... percent	6.551	6.923	5.092	2.496
Zinc concentrates produced..... dry tons	221,926	161,033	208,215	90,758
Gold content..... ounces	6,542.85	5,515.95	408.00	14.50
Do..... ounce per ton	0.028	0.034	0.002	Trace
Silver content..... ounces	714,510	475,753	84,412	2,200
Do..... ounces per ton	3.220	2.954	0.415	0.024
Copper content..... pounds	2,306,293	2,101,412	247,928	-----
Do..... percent	0.520	0.652	0.061	-----
Lead content..... pounds	8,941,910	5,662,800	7,279,007	2,903,896
Do..... percent	2.015	1.758	1.791	1.600
Zinc content..... pounds	245,893,190	182,292,702	236,364,862	110,617,848
Do..... percent	55.400	56.798	58.156	60.941
Iron concentrates produced..... dry tons	80,048	75,958	2,000	-----
Gold content..... ounces	8,679.77	9,682.08	38.91	-----
Silver content..... do	68,396	71,540	2,038	-----
Copper content..... pounds	212,284	233,694	3,646	-----
Lead content..... do	2,172,799	2,210,887	20,409	-----
Zinc content..... do	8,325,067	7,683,465	102,000	-----
Ratio of concentration:				
Ore to lead concentrates.....	9.04:1	9.30:1	95.93:1	131.56:1
Ore to zinc concentrates.....	6.94:1	7.08:1	15.25:1	15.67:1
Ore to iron concentrates.....	19.25:1	15.00:1	-----	-----
Ore to all concentrates.....	3.26:1	3.17:1	13.05:1	14.00:1
Recoveries:				
Gold in lead concentrates..... percent	60.50	58.81	41.73	43.82
Gold in zinc concentrates..... do	7.51	8.53	15.22	19.44
Gold in iron concentrates..... do	9.97	14.97	1.47	-----
Gold in all concentrates..... do	77.98	82.31	58.42	63.26
Silver in lead concentrates..... do	79.42	83.55	56.59	76.64
Silver in zinc concentrates..... do	.89	8.11	17.61	11.63
Silver in iron concentrates..... do	89.63	92.88	74.62	88.27
Silver in all concentrates..... do	64.50	65.55	31.80	54.10
Copper in lead concentrates..... do	21.14	19.07	36.13	-----
Copper in zinc concentrates..... do	1.94	2.12	.53	-----
Copper in iron concentrates..... do	87.58	86.74	68.46	54.10
Lead in lead concentrates..... do	88.05	87.87	65.78	72.07
Lead in zinc concentrates..... do	4.03	3.59	12.03	12.87
Lead in iron concentrates..... do	.98	1.40	.03	-----
Lead in all concentrates..... do	93.06	92.86	77.84	84.94
Zinc in lead concentrates..... do	7.40	7.51	1.18	.42
Zinc in zinc concentrates..... do	81.44	80.66	85.15	85.92
Zinc in iron concentrates..... do	2.76	3.40	.04	-----
Zinc in all concentrates..... do	91.60	91.57	86.37	86.34

TABLE 15.—Comparison of screen analyses, alkalinities, and pulp densities in the treatment of lead-zinc ores, 1930-32

SCREEN ANALYSES OF FLOTATION FEED		1930	1931	1932
Number of plants.....		25	24	17
Ore treated.....	dry tons	2, 552, 686	1, 675, 424	1, 206, 843
+65 mesh.....	percent	5.69	4.68	5.23
-65+100 mesh.....	do	8.15	8.55	8.08
-100+150 mesh.....	do	8.30	8.88	9.34
-150+200 mesh.....	do	11.47	12.91	16.24
-200 mesh.....	do	66.39	64.98	61.11

ALKALINITY OF FLOTATION CIRCUITS

Number of plants.....		36	20	17
Ore treated.....	dry tons	2, 453, 978	1, 308, 180	1, 203, 420
Alkalinity:				
Lead circuit.....	pH units	7.92	7.99	7.67
Zinc circuit.....	do	8.36	8.23	8.25
Iron circuit.....	do	8.00	8.07	8.12

PULP DENSITY OF FLOTATION FEED

Number of plants.....		(4)	16	18
Ore treated.....	dry tons	(4)	1, 052, 663	1, 236, 843
Pulp density.....	percent solids	(4)	33.03	32.11

1 3 plants treating 578,485 tons of ore.

2 4 plants treating 486,682 tons of ore.

3 2 plants treating 384,015 tons of ore.

4 Not determined.

ZINC ORES

TABLE 16.—Consumption of reagents in the treatment of zinc ores in 1932

[14 plants treating 663,872 tons of ore]

Reagent	Plants using	Ore treated (tons)	Consumption of reagents (pounds)		
			Total, 1932	Per ton	
				1932	1931
I. Frothers:					
Pine oils.....	11	651, 672	70, 266	0.108	0.152
Cresylic acid.....	7	126, 007	4, 983	.040	.090
Total frothers.....	14	663, 872	75, 249	.113	.159
II. Collectors:					
Distillation products: Coal-tar creosotes.....	4	433, 782	83, 406	.192	.186
Synthetic products:					
Ethyl xanthates.....	8	168, 389	23, 689	.141	.125
Butyl xanthates.....	2	69, 974	912	.013	-----
Amyl xanthates.....	1	194, 729	950	.005	.009
Dicresol-dithiophosphoric acid.....	4	35, 394	6, 637	.188	.287
Sodium dicresol-dithiophosphate.....	9	551, 509	23, 641	.043	.049
Total synthetic products.....	14	663, 872	55, 829	.084	.153
Total collectors.....	14	663, 872	139, 235	.210	.294
III. Acids and alkalis:					
Acids: Sulphuric acid.....	2	101, 807	214	.002	-----
Alkalis:					
Sodium carbonate.....	2	101, 807	220	.002	1.733
Sodium hydroxide.....	1	50, 000	800	.016	-----
Lime.....	6	168, 083	625, 295	3.720	4.997
Total alkalis.....	7	219, 890	626, 315	2.848	5.212
IV. Other inorganic reagents:					
Activating: Copper sulphate.....	14	663, 872	477, 497	.674	.972
Depressing:					
Cyanides.....	1	50, 000	294	.006	.256
Sodium silicate.....	1	50, 000	3, 334	.067	-----
Total depressing.....	1	50, 000	3, 628	.073	.256
Total reagents.....	14	663, 872	1, 322, 138	1.992	2.623

TABLE 17.—Comparison of metallurgical results in the treatment of zinc ores, 1931 and 1932

	Method of concentration			
	Straight flotation		Combined gravity and flotation	
	1931	1932	1931	1932
Number of plants.....	4	5	14	9
Total ore treated..... dry tons.....	356,861	385,399	2,451,154	727,194
Lead content..... pounds.....	83,600	75,000	3,345,370	441,040
Do..... percent.....	0.012	0.010	0.068	0.030
Zinc content..... pounds.....	64,179,243	44,664,513	132,495,721	39,910,730
Do..... percent.....	8.992	5.795	2.703	2.744
Lead concentrates produced..... dry tons.....			296	46
Lead content..... pounds.....			426,270	70,780
Do..... percent.....			72.005	76.935
Zinc content..... pounds.....			18,250	1,920
Do..... percent.....			3.083	2.087
Zinc concentrates produced..... dry tons.....	45,606	32,555	86,762	28,503
Lead content..... pounds.....	72,120	59,870	1,403,230	271,760
Do..... percent.....	0.079	0.920	0.809	0.477
Zinc content..... pounds.....	55,388,349	39,698,868	106,326,359	34,618,446
Do..... percent.....	60.725	60.972	61.275	60.728
Ratio of concentration:				
Ore to zinc concentrates.....	7.82:1	11.84:1	28.25:1	25.51:1
Ore to all concentrates.....	7.82:1	11.84:1	28.16:1	25.47:1
Recoveries:				
Lead in lead concentrates..... percent.....			12.74	16.05
Lead in zinc concentrates..... do.....	86.27	79.83	41.95	49.37
Lead in all concentrates..... do.....	86.27	79.83	54.99	65.42
Zinc in lead concentrates..... do.....			.01	.01
Zinc in zinc concentrates..... do.....	86.30	88.88	80.25	86.74
Zinc in all concentrates..... do.....	86.30	88.88	80.26	86.75

TABLE 18.—Comparison of screen analyses, alkalinities, and pulp densities in the treatment of zinc ores, 1930-32

SCREEN ANALYSES OF FLOTATION FEED

	1930	1931	1932
Number of plants.....	9	4	4
Ore treated..... dry tons.....	664,808	620,673	503,645
+65 mesh..... percent.....	11.40	8.36	11.89
-65+100 mesh..... do.....	14.62	17.81	17.80
-100+150 mesh..... do.....	12.47	12.02	11.51
-150+200 mesh..... do.....	12.71	10.93	11.24
-200 mesh..... do.....	48.80	50.88	47.56

ALKALINITY OF FLOTATION CIRCUITS

Lead circuit:			
Number of plants.....	5	3	
Ore treated..... dry tons.....	126,548	68,249	
Alkalinity..... pH units.....	8.74	7.34	
Zinc circuit:			
Number of plants.....	17	10	4
Ore treated..... dry tons.....	573,463	505,884	503,645
Alkalinity..... pH units.....	8.82	8.57	8.34

PULP DENSITY OF FLOTATION FEED

Number of plants.....	(¹)	9	5
Ore treated..... dry tons.....	(¹)	734,401	509,865
Pulp density..... percent solids.....	(¹)	32.45	37.24

¹ Not determined.

GOLD AND SILVER ORES

TABLE 19.—Consumption of reagents in the treatment of gold and silver ores in 1932

[46 plants treating 800,970 tons of ore]

Reagent	Plants using	Ore treated (tons)	Consumption of reagents (pounds)		
			Total, 1932	Per ton	
				1932	1931
I. Frothers:					
Pine oils.....	41	735,267	58,032	0.079	0.128
Cresylic acid.....	13	189,188	34,769	.184	.090
Total frothers.....	46	800,970	92,801	.116	.138
II. Collectors:					
Distillation products:					
Coal-tar creosotes.....	5	56,761	7,966	.140	.264
Wood-tar creosotes.....	2	19,576	700	.036	.....
Total distillation products.....	6	58,961	8,666	.147	.441
Synthetic products:					
Ethyl xanthates.....	29	163,802	21,207	.129	.063
Amyl xanthates.....	20	663,095	26,511	.040	.029
Dicresol-dithiophosphoric acid.....	11	80,509	8,455	.105	.072
Sodium dicresol-dithiophosphate.....	5	304,870	1,423	.005	.008
Total synthetic products.....	46	800,970	57,596	.072	.075
Total collectors.....	46	800,970	66,262	.083	.080
III. Acids and alkalis:					
Acids: Sulphuric acid.....	2	58,245	8,100	.139	.....
Alkalies:					
Sodium carbonate.....	18	125,300	215,197	1.717	.423
Sodium hydroxide.....	3	92,611	55,000	.594	.....
Lime.....	4	228,532	16,320	.071	.333
Total alkalies.....	22	375,075	286,517	.764	.353
IV. Other inorganic reagents:					
Sulphidizing: Sodium sulphide.....	6	70,290	21,395	.304	.306
Activating: Copper sulphate.....	6	151,913	48,950	.322	.051
Depressing:					
Cyanides.....	2	52,609	558	.011	.214
Sodium silicate.....	4	23,661	3,200	.135	.....
Zinc sulphate.....	1	1,400	280	.200	.518
Total depressing.....	6	76,270	4,038	.053	.732
Miscellaneous:					
Starch.....	2	58,245	49,380	.848	.252
Chlorine.....	1	34,366	28,350	.825	.....
Total reagents.....	46	800,970	605,793	.756	.531

TABLE 20.—Comparison of metallurgical results in the treatment of gold and silver ores, 1931 and 1932

	Method of concentration			
	Straight concentration		Combined concentration and amalgamation or cyanidation	
	1931	1932	1931	1932
Number of plants.....	18	26	15	20
Total ore treated..... dry tons.....	226,459	302,190	802,309	498,780
Gold content..... ounces.....	42,697.96	61,835.56	196,174.24	235,875.07
Do..... ounce per ton.....	0.189	0.205	0.245	0.473
Silver content..... ounces.....	406,395	1,086,180	641,938	234,418
Do..... ounces per ton.....	1.795	3.495	0.800	0.470
Copper content..... pounds.....	129,572	2,225,075	2,107,256	172,261
Do..... percent.....	0.029	0.368	0.131	0.017
Lead content..... pounds.....	418,729	2,107,730	1,408,264	543,438
Do..... percent.....	0.092	0.349	0.088	0.054
Zinc content..... pounds.....	4,611	14,000	17,228	13,415
Concentrates produced..... dry tons.....	34,696.83	55,664.02	71,233.82	64,899.86
Gold content..... ounces.....	7,525	4,075	4,135	4,838
Silver content..... ounces.....	305,153	892,001	480,829	157,600
Do..... ounces per ton.....	66.179	65.295	27.910	11.748
Copper content..... pounds.....	114,920	1,983,887	1,712,187	134,796
Do..... percent.....	1.246	7.298	4.969	0.502
Lead content..... pounds.....	324,503	1,777,341	1,138,189	422,682
Do..... percent.....	3.519	6.505	3.303	1.575
Zinc content..... pounds.....		8,000		
Bullion:				
Gold content..... ounces.....			109,756.22	152,109.67
Silver content..... do.....			37,894	33,014
Ratio of concentration: Ore to all concentrates.....	49.11:1	22.12:1	46.57:1	37.18:1
Recovers:				
Gold in all concentrates..... percent.....	81.26	90.02	36.31	27.51
Gold in bullion..... do.....			55.95	64.49
Gold in all products..... do.....	81.26	90.02	92.26	92.00
Silver in all concentrates..... do.....	75.09	84.46	74.90	67.23
Silver in bullion..... do.....			5.91	14.08
Silver in all products..... do.....	75.09	84.46	80.81	81.31
Copper in all concentrates..... do.....	88.69	89.61	81.25	78.25
Lead in all concentrates..... do.....	77.50	84.33	80.82	77.78
Zinc in all concentrates..... do.....		57.14		

TABLE 21.—Comparison of screen analyses, alkalinities, and pulp densities in the treatment of gold and silver ores, 1930-32

SCREEN ANALYSES OF FLOTATION FEED

	1930	1931	1932
Number of plants.....	8	9	14
Ore treated..... dry tons.....	172,292	359,919	450,275
+65 mesh..... percent.....	1.44	5.58	4.72
-65+100 mesh..... do.....	7.81	9.53	13.38
-100+150 mesh..... do.....	11.64	12.52	12.98
-150+200 mesh..... do.....	20.33	16.07	13.84
-200 mesh..... do.....	58.78	56.30	55.08

ALKALINITY OF FLOTATION CIRCUIT

Number of plants.....	(1)	8	11
Ore treated..... dry tons.....	(1)	259,338	364,588
Alkalinity..... pH units.....	(1)	8.57	8.28

PULP DENSITY OF FLOTATION FEED

Number of plants.....	(1)	8	15
Ore treated..... dry tons.....	(1)	309,466	386,127
Pulp density..... percent solids.....	(1)	32.56	34.83

¹ Figures not available.

SUMMARY OF REAGENT CONSUMPTION

TABLE 22.—Summary of reagent consumption in 1932, by classes of ores

	Copper	Copper (native)	Lead	Lead-zinc	Zinc	Gold and silver
Number of plants.....	15	5	25	36	14	46
Total ore treated..... dry tons..	9,725,582	622,838	2,921,442	1,389,303	663,872	800,970
Reagents used per ton of ore treated:						
I. Frothers.....pounds..	0.142	0.096	0.186	0.160	0.113	0.116
II. Collectors:						
Distillation.....do....	.038	-----	.015	.675	.192	.147
Synthetic.....do....	.060	.132	.085	.243	.084	.072
III. Acids and alkalis:						
Acids.....do....	.839	-----	-----	.039	.002	.139
Alkalies.....do....	4.368	.357	.206	1.341	2.848	.764
IV. Other inorganic reagents:						
Sulphidizing.....do....	.005	-----	.395	.608	-----	.304
Activating.....do....	-----	-----	.992	1.052	.674	.322
Depressing.....do....	.020	-----	.142	.953	.073	.053
Miscellaneous.....do....	-----	-----	-----	1.070	-----	.839
Total reagents.....do....	4.708	.308	.577	3.746	1.992	.756

GOLD, SILVER, COPPER, LEAD, AND ZINC IN NEVADA

(DETAILED STATISTICS—MINE REPORT)

By V. C. HEIKES AND CHARLES WHITE MERRILL¹

SUMMARY

The total value of the gold, silver, copper, lead, and zinc produced in Nevada in 1932 was less than one half of that in 1931, in spite of a substantial increase in the number of mines in operation. The decrease in total value was due partly to the lower prices for silver, copper, lead, and zinc, but principally to the smaller output of each of the five metals. The only increases were the doubling of the quantities from placer mines, and these were more than offset by the decline in lode-mine output of gold and silver.

In 1932, as in 1931, the metal output of only two counties, White Pine and Nye, exceeded \$1,000,000 in value. The total for White Pine County, however, decreased from \$7,331,386 in 1931 to \$2,366,195 in 1932 due principally to further curtailment of operations by Nevada's largest copper-mining company, the Nevada Consolidated Copper Co.

The value of metal production herein reported has been calculated at the figures given in the table that follows. Gold is figured at the mint value for fine gold; that is, \$20.671835 an ounce. The silver price is the average New York price for bar silver. The copper, lead, and zinc prices are weighted averages, for each year, of all grades of primary metal sold by producers.

Prices of silver, copper, lead, and zinc, 1928-32

Year	Silver	Copper	Lead	Zinc	Year	Silver	Copper	Lead	Zinc
	<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>		<i>Per fine ounce</i>	<i>Per pound</i>	<i>Per pound</i>	<i>Per pound</i>
1928-----	\$0.585	\$0.144	\$0.058	\$0.061	1931-----	\$0.290	\$0.091	\$0.037	\$0.038
1929-----	.533	.176	.063	.066	1932-----	.282	.063	.030	.030
1930-----	.385	.130	.050	.048					

Mine production of gold, silver, copper, lead, and zinc in Nevada, 1928-32, in terms of recovered metals

Year	Mines producing		Ore, old tailings, etc. (short tons)	Gold		Silver	
	Lode	Placer		Fine ounces	Value	Fine ounces	Value
1928-----	330	29	7,057,433	175,157.79	\$3,620,833	5,481,574	\$3,206,721
1929-----	323	15	7,355,500	163,711.22	3,384,211	4,923,526	2,624,239
1930-----	247	33	4,757,178	149,064.47	3,081,436	4,219,832	1,624,635
1931-----	271	65	3,565,472	142,293.76	2,941,473	2,562,071	745,001
1932-----	382	103	1,855,031	129,719.83	2,681,547	1,304,365	367,831

¹ The assistance of Helen M. Gaylord, of the Bureau of Mines, is acknowledged.

Mine production of gold, silver, copper, lead, and zinc in Nevada, 1928-32, in terms of recovered metals—Continued

Year	Copper		Lead		Zinc		Total value
	Pounds	Value	Pounds	Value	Pounds	Value	
1928.....	158,876,883	\$22,878,271	15,747,444	\$913,352	6,796,713	\$414,599	\$31,033,776
1929.....	140,138,809	24,664,430	19,692,568	1,240,632	16,920,083	1,116,725	33,030,237
1930.....	109,203,512	14,196,457	23,058,381	1,152,919	29,168,117	1,400,070	21,455,517
1931.....	72,634,497	6,609,739	15,860,634	586,843	20,861,348	792,731	11,673,787
1932.....	31,487,606	1,983,719	880,986	26,430	254,795	7,644	5,087,171

Gold and silver produced at placer mines in Nevada, 1928-32

Year	Gold		Silver	
	Fine ounces	Value	Fine ounces	Value
1928.....	1,851.12	\$38,266	839	\$491
1929.....	2,117.00	43,762	1,025	546
1930.....	1,859.44	38,438	847	326
1931.....	2,883.25	59,602	860	249
1932.....	5,408.22	111,798	1,743	492

Gold.—Mine production of gold in Nevada decreased 9 percent (from 142,293.76 fine ounces in 1931 to 129,719.83 ounces in 1932). Nye County, with most of its gold from precious-metal mines, displaced White Pine County in 1932 as the leading gold-producing county. Before the severe curtailment of copper production in White Pine County, gold derived as a byproduct of copper mining had kept White Pine County in first place since 1927 as a gold producer. Esmeralda, Elko, and Lander Counties also had gold outputs exceeding \$100,000 in 1932. Each of the following districts produced more than \$100,000 in gold in 1932: Goldfield, Jarbidge, Manhattan, Robinson, Round Mountain, and Tonopah.

Dry gold ore yielded 77 percent, copper ore 10 percent, and dry gold-silver ore 7 percent of the total gold produced in Nevada in 1932. These figures represent marked increase in both quantity and percentage of total for dry gold ore; copper ore showed an opposite trend.

Cyanidation was the principal method of gold recovery in 1932, followed closely by the smelting of ore and concentrates; amalgamation ranked third. Ore smelted and ore amalgamated each yielded more gold in 1932 than in 1931, but concentrates smelted yielded less.

The yield of gold from placer mines, although never important, almost doubled in 1932.

Silver.—Although Nevada generally is thought of as one of the leading silver-producing States the exhaustion of many bonanza mines and the low price of silver resulted in an output much less important in 1932 than in former years. In fact, the quantity of silver produced in 1932 fell below that in any year since 1899 and the value below that in any year since the beginning of the Civil War.

In 1931 Nye County produced over 1,300,000 fine ounces of silver, and 4 other counties each exceeded 100,000 ounces. In 1932 Nye County again led but with a total production of only 618,049 ounces; 3 other counties exceeded 100,000 ounces. Each of the following districts produced over 50,000 ounces of silver in 1932: Cherry Creek, Gold Circle, Jarbidge, Robinson, and Tonopah.

In 1932, as in 1931, virtually all the silver was recovered either by smelting or by cyanidation. In 1931 the smelter receipts from which

silver was recovered were largely concentrates; but in 1932, 93 percent of the silver recovered by smelting came from direct-smelted ore and old tailings.

In 1931 production of silver in Nevada was divided about equally between dry and siliceous ore and base-metal ores. In 1932, however, 1,217,038 ounces (93 percent of the State total) came from dry and siliceous ore—649,706 ounces from dry gold-silver ore, 520,666 ounces from dry gold ore, and 46,666 ounces from dry silver ore.

The placer-silver output, although twice that in 1931, continued very small compared with the output from lode mines.

Copper.—The quantity of copper produced in Nevada in 1932 was less than one half and its value only 30 percent of that in 1931. White Pine County continued as the outstanding producer of copper, yielding over 98 percent of the State total, and virtually all of the county output came from the Robinson district.

Almost all the copper produced in Nevada in 1932 came from copper ore concentrated by flotation, followed by smelting of the concentrates.

Lead.—Lead production in Nevada declined 94 percent in quantity and 95 percent in value in 1932 compared with 1931. Clark, Lincoln, and Eureka were the only counties producing over 100,000 pounds of lead; the districts having the same distinction were Eureka, Pioche, and Searchlight. Approximately 59 percent of the lead was recovered from crude ore directly smelted and 40 percent from flotation concentrates smelted. In 1932 lead ore yielded 82 percent of the total lead; in 1931 lead-zinc ore was the outstanding source of lead, with lead ore second and copper-lead ore third.

Zinc.—The decline in zinc production in Nevada in 1932 was even greater than in lead. The quantity produced in 1932 was slightly more and the value slightly less than 1 percent of the output in 1931. In 1932 all zinc produced came from the Yellow Pine district of Clark County and was recovered from ore smelted without concentration; most of the zinc came from lead-zinc ore, but some came from straight zinc ore. In 1931 flotation played a very important part in zinc recovery, and lead-zinc ore furnished the bulk of the zinc.

Mine production of gold, silver, copper, lead, and zinc in Nevada in 1932, by counties, in terms of recovered metals

County	Gold				Silver (lode and placer)		
	Lode		Placer		Total value	Fine ounces	Value
	Fine ounces	Value	Fine ounces	Value			
Churchill.....	43.85	\$906	-----	-----	\$906	748	\$211
Clark.....	3,100.93	64,102	112.07	\$2,317	66,419	8,592	2,423
Douglas.....	32.08	663	1.95	40	703	11	3
Elko.....	23,140.36	478,354	13.25	274	478,628	311,025	87,709
Esmeralda.....	23,364.60	482,989	25.31	523	483,512	126,125	35,567
Eureka.....	637.82	13,185	689.92	14,262	27,447	10,133	2,858
Humboldt ^d	825.60	17,067	74.61	1,542	18,609	10,533	2,970
Lander.....	4,121.94	85,208	1,203.56	24,880	110,088	5,910	1,667
Lincoln.....	2,354.49	48,672	-----	-----	48,672	37,827	10,667
Lyon.....	1,823.75	37,700	34.63	716	38,416	1,566	442
Mineral.....	2,257.47	46,666	42.04	869	47,535	7,762	2,189
Nye.....	39,826.94	823,296	2,471.46	51,090	874,386	618,049	174,290
Ormsby.....	6.40	132	2.12	44	176	8	2
Pershing.....	1,622.43	33,539	214.61	4,436	37,975	13,228	3,730
Storey.....	2,885.90	59,657	-----	-----	59,657	13,908	3,922
Washoe.....	322.33	6,663	72.60	1,501	8,164	160	45
White Pine.....	17,944.72	370,950	450.09	9,304	380,254	138,780	39,136
Total, 1931.....	124,311.61	2,569,749	5,408.22	111,798	2,681,547	1,304,365	367,831
	139,410.51	2,881,871	2,883.25	59,602	2,941,473	2,562,071	743,001

242 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Mine production of gold, silver, copper, lead, and zinc in Nevada in 1932, by counties, in terms of recovered metals—Continued

County	Copper		Lead		Zinc		Total value
	Pounds	Value	Pounds	Value	Pounds	Value	
Churchill.....							\$1,117
Clark.....	4,353	\$274	450,752	\$13,523	254,795	\$7,644	90,283
Douglas.....							706
Elko.....	536,244	33,783	67,457	2,024			602,144
Esmeralda.....	5,475	345	5,376	161			519,585
Eureka.....	1,940	122	124,934	3,748			34,175
Humboldt.....	1,205	76	2,564	77			21,732
Lander.....	12,466	785	1,952	59			112,599
Lincoln.....	25,073	1,580	191,406	5,742			66,661
Lyon.....				599			38,876
Mineral.....	367	23	17,478	524			50,271
Nye.....	1,730	109	3,493	105			1,048,800
Ormsby.....							178
Pershing.....	2,888	182	605	18			41,905
Storey.....	215	14	1,727	52			63,645
Washoe.....							8,209
White Pine.....	30,895,650	1,946,426	12,643	379			2,366,195
Total, 1931.....	31,487,606	1,983,719	850,986	26,430	254,795	7,644	5,067,171
	72,634,497	6,609,739	15,860,634	586,843	20,861,348	792,731	11,673,787

Ore and old tailings sold or treated and lode mines producing in Nevada, 1931 and 1932, by counties

County	Ore and old tailings (short tons)		Lode mines producing		County	Ore and old tailings (short tons)		Lode mines producing	
	1931	1932	1931	1932		1931	1932	1931	1932
Clark.....	28,425	7,237	22	23	Nye.....	129,996	95,942	50	63
Douglas.....	153	123	3	6	Ormsby.....		100		1
Elko.....	71,346	51,139	20	26	Pershing.....	10,007	2,668	19	37
Esmeralda.....	282,404	288,652	21	22	Storey.....	17,931	5,788	23	28
Eureka.....	2,065	1,156	9	9	Washoe.....	548	487	9	17
Humboldt.....	2,302	1,542	11	16	White Pine.....	2,948,576	1,383,808	24	30
Lander.....	6,748	4,667	17	20					
Lincoln.....	59,080	5,869	6	10					
Lyon.....	3,193	3,217	16	30					
						3,565,472	1,855,031	271	382

MINING INDUSTRY

ORE CLASSIFICATION

Ore and old tailings sold or treated in Nevada in 1932, with content in terms of recovered metals

Source	Ore and old tailings	Gold	Silver	Copper	Lead	Zinc
Dry gold ore.....	Short tons 1 481,080	Fine ounces 99,732.26	Fine ounces 520,666	Pounds 66,929	Pounds 28,867	Pounds
Dry gold and silver ore.....	² 10,496	8,645.21	649,706	2,816	1,730	
Dry silver ore.....	³ 1,615	163.99	46,666	2,888	1,725	
Copper ore.....	1,357,464	13,459.14	42,553	31,383,875		
Lead ore.....	⁴ 3,262	2,303.46	37,338	8,738	725,843	
Zinc ore.....	36					29,684
Copper-lead ore.....	484	7.55	5,693	22,360	28,026	
Lead-zinc ore.....	594				94,795	225,111
Total, lode mines.....	1,855,031	124,311.61	1,302,622	31,487,606	880,685	254,795
Total, placers.....		5,408.22	1,743			
	1,855,031	129,719.83	1,304,365	31,487,606	880,986	254,795
Total, 1931.....	3,565,472	142,293.76	2,562,071	72,634,497	15,860,634	20,861,348

¹ Includes 288,390 tons of old tailings cyanided and 3,449 tons of old tailings smelted.

² Includes 105 tons of old tailings smelted.

³ Includes 800 tons of old tailings cyanided.

⁴ Includes 1,500 tons of old tailings concentrated.

GOLD, SILVER, COPPER, LEAD, AND ZINC IN NEVADA 243

Value of metals from ore and old tailings sold or treated in Nevada in 1932, by classes of ore

Class	Ore and old tailings (short tons)	Gold	Silver	Copper	Lead	Zinc	Total value
Dry gold ore.....	481,080	\$2,061,649	\$146,828	\$4,217	\$866	-----	\$2,213,560
Dry gold and silver ore.....	10,496	178,712	183,217	177	52	-----	362,158
Dry silver ore.....	1,615	3,390	13,160	182	52	-----	16,784
Copper ore.....	1,357,464	278,225	12,000	1,977,184	-----	-----	2,267,409
Lead ore.....	3,262	47,617	10,529	550	21,775	-----	80,471
Zinc ore.....	36	-----	-----	-----	-----	\$891	891
Copper-lead ore.....	484	156	1,605	1,409	841	-----	4,011
Lead-zinc ore.....	594	-----	-----	-----	2,844	6,753	9,597
Total, 1931.....	1,855,031 3,565,472	2,569,749 2,881,871	367,339 742,752	1,983,719 6,609,739	26,430 586,843	7,644 792,731	4,954,881 11,613,936

Ore and old tailings sold or treated in Nevada in 1932, by counties, with content in terms of recovered metals

DRY GOLD ORE

County	Ore and old tailings	Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Churchill.....	1 220	33.85	227	-----	-----	-----
Clark.....	5,091	1,532.78	3,236	120	3,919	-----
Douglas.....	123	32.08	11	-----	-----	-----
Elko.....	50,281	23,138.10	306,242	16,865	316	-----
Esmeralda.....	2 286,481	22,371.92	15,552	5,475	5,376	-----
Eureka.....	421	245.16	2,178	-----	8,560	-----
Humboldt.....	1,511	805.04	8,900	-----	102	-----
Lander.....	4,664	4,115.60	5,732	12,466	1,237	-----
Lincoln.....	3 4,558	2,205.24	14,382	634	7,031	-----
Lyon.....	3,217	1,823.75	1,553	-----	599	-----
Mineral.....	4 2,434	2,062.09	3,125	-----	-----	-----
Nye.....	8 87,095	32,105.04	47,274	-----	-----	-----
Ormsby.....	6 100	6.40	8	-----	-----	-----
Pershing.....	7 2,441	1,561.48	5,429	-----	-----	-----
Storey.....	5,788	2,885.90	13,908	215	1,727	-----
Washoe.....	487	322.33	142	-----	-----	-----
White Pine.....	8 26,168	4,485.50	92,767	31,154	-----	-----
Total, 1931.....	481,080 462,887	99,732.26 90,131.53	520,666 420,523	66,929 55,936	28,867 15,946	-----

DRY GOLD AND SILVER ORE

Churchill.....	5	10.00	521	-----	-----	-----
Esmeralda.....	1,713	911.44	86,762	-----	-----	-----
Eureka.....	40	30.51	2,294	-----	1,730	-----
Humboldt.....	27	18.00	1,536	1,205	-----	-----
Nye.....	9 8,711	7,675.26	558,593	1,611	-----	-----
Total, 1931.....	10,496 18,381	8,645.21 10,079.20	649,706 853,474	2,816 3,593	1,730	-----

DRY SILVER ORE

Clark.....	15	2.54	931	-----	100	-----
Elko.....	1	.26	275	-----	-----	-----
Esmeralda.....	458	81.24	23,801	-----	-----	-----
Lincoln.....	20	3.00	455	-----	1,020	-----
Nye.....	109	14.01	9,821	-----	-----	-----
Pershing.....	127	80.95	7,759	2,888	605	-----
White Pine.....	10 885	1.99	3,624	-----	-----	-----
Total, 1931.....	1,615 1,889	163.99 155.36	46,666 49,153	2,888	1,725	-----

See footnotes at end of table.

Ore and old tailings sold or treated in Nevada in 1932, by counties, with content in terms of recovered metals—Continued

COPPER ORE

County	Ore and old tailings	Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Elko.....	719	2.00	274	519,379	-----	-----
White Pine.....	1,356,745	13,457.14	42,279	30,864,496	-----	-----
Total, 1931.....	1,357,464	13,459.14	42,553	31,383,875	-----	-----
	2,936,899	33,807.07	225,355	72,332,205	-----	-----

LEAD ORE

Clark.....	¹¹ 1,501	1,565.61	4,397	4,233	351,938	-----
Elko.....	138	-----	4,229	-----	67,141	-----
Eureka.....	695	362.15	5,602	1,940	114,644	-----
Humboldt.....	4	2.56	89	-----	2,462	-----
Lander.....	3	6.34	13	-----	715	-----
Lincoln.....	807	138.70	17,297	2,079	155,329	-----
Mineral.....	77	195.38	4,612	367	17,478	-----
Nye.....	27	32.63	1,056	119	3,493	-----
White Pine.....	10	.09	43	-----	12,643	-----
Total, 1931.....	3,262	2,303.46	37,338	8,738	725,843	-----
	22,297	3,594.24	29,515	11,106	932,552	-----

ZINC ORE

Clark.....	36	-----	-----	-----	-----	29,684
Total, 1931.....	36	-----	-----	-----	-----	29,684
	75	-----	-----	-----	10,788	41,004

COPPER-LEAD ORE

Lincoln.....	484	7.55	5,693	22,360	28,026	-----
Total, 1931.....	484	7.55	5,693	22,360	28,026	-----
	3,824	53.74	53,136	139,373	480,622	-----

LEAD-ZINC ORE

Clark.....	594	-----	-----	-----	94,795	225,111
Total, 1931.....	594	-----	-----	-----	94,795	225,111
	119,220	1,589.37	930,050	92,284	14,420,726	20,820,344

¹ Includes 200 tons of old tailings cyanided.

² Includes 281,700 tons of old tailings cyanided.

³ Includes 3,000 tons of old tailings cyanided and 973 tons of old tailings smelted.

⁴ Includes 850 tons of old tailings cyanided.

⁵ Includes 2,100 tons of old tailings cyanided.

⁶ Old tailings cyanided.

⁷ Includes 440 tons of old tailings cyanided.

⁸ Includes 2,476 tons of old tailings smelted.

⁹ Includes 105 tons of old tailings smelted.

¹⁰ Includes 800 tons of old tailings cyanided.

¹¹ Includes 1,500 tons of old tailings concentrated.

Zinc products from Nevada mines sold to mills and smelters in 1932

Classification	County	Ore (dry weight)	Gross zinc	Average assay of ore	Recovered zinc
		<i>Short tons</i>	<i>Pounds</i>	<i>Percent</i>	<i>Pounds</i>
Zinc ore.....	Clark.....	36	34,120	47.39	29,684
Oxidized lead-zinc ore.....	do.....	594	258,748	21.78	225,111
Total, 1931.....		630	292,868	23.24	254,795
		119,295	23,194,185	9.72	20,861,348

METALLURGIC INDUSTRY

Mine production of metals in Nevada in 1932, by methods of recovery

Method of recovery	Material treated	Gold	Silver	Copper	Lead	Zinc
	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Ore amalgamated.....	67, 534	21, 372. 14	13, 216	-----	-----	-----
Ore and old tailings cyanided.....	379, 294	52, 406. 37	569, 834	5, 475	-----	-----
Ore and old tailings smelted.....	1 54, 748	34, 197. 28	670, 371	923, 465	520, 561	254, 795
Concentrates smelted:						
Flotation.....	59, 137	16, 212. 78	46, 515	30, 558, 546	356, 587	-----
Table.....	34	123. 04	2, 638	120	3, 838	-----
Total, lode mines.....	-----	124, 311. 61	1, 302, 622	31, 487, 606	880, 986	254, 795
Total, placers.....	-----	5, 408. 22	1, 743	-----	-----	-----
Total, 1931.....	-----	129, 719. 83	1, 304, 365	31, 487, 606	880, 986	254, 795
	-----	142, 293. 76	2, 562, 071	72, 634, 497	15, 860, 634	20, 861, 348

¹ Includes 3,554 tons of old tailings.

Mine production of metals from gold and silver mills in Nevada in 1932, by counties, in terms of recovered metals

County	Ore and old tailings treated		Recovered in bullion			
	Ore	Old tailings	Amalgamation		Cyanidation	
			Gold	Silver	Gold	Silver
	<i>Short tons</i>	<i>Short tons</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Fine ounces</i>
Churchill.....	20	200	20. 05	13	13. 80	214
Clark.....	5, 058	-----	1, 000. 03	883	428. 98	2, 095
Douglas.....	122	-----	24. 68	7	-----	-----
Elko.....	49, 769	-----	882. 88	869	22, 048. 66	304, 018
Esmeralda.....	2, 598	1 281, 700	735. 83	389	13, 015. 29	40, 760
Eureka.....	201	-----	79. 14	23	-----	-----
Humboldt.....	1, 278	-----	394. 08	118	-----	-----
Lander.....	3, 264	-----	1, 585. 18	326	27. 45	4
Lincoln.....	21	3, 000	-----	-----	276. 00	3, 237
Lyon.....	3, 174	-----	1, 700. 07	1, 214	-----	-----
Mineral.....	1, 025	850	274. 36	169	202. 09	201
Nye.....	82, 865	2, 100	11, 482. 37	6, 252	15, 498. 01	203, 512
Ormsby.....	-----	100	-----	-----	6. 40	8
Pershing.....	1, 765	440	696. 60	875	122. 01	1, 885
Storey.....	5, 688	-----	1, 985. 12	1, 877	767. 38	11, 423
Washoe.....	487	-----	322. 33	142	-----	-----
White Pine.....	303	800	189. 42	59	. 30	2, 477
Total, 1931.....	157, 638	1 289, 190	21, 372. 14	13, 216	52, 406. 37	569, 834
	174, 470	1 275, 950	16, 685. 89	18, 695	68, 038. 75	1, 110, 948

County	Concentrates and recovered metal				
	Concentrates produced	Gold	Silver	Copper	Lead
		<i>Fine ounces</i>	<i>Fine ounces</i>	<i>Pounds</i>	<i>Pounds</i>
Clark.....	6	24. 32	103	120	3, 420
Esmeralda.....	51	1, 346. 90	521	-----	4, 781
Humboldt.....	2	2. 21	25	-----	102
Mineral.....	1	1. 20	1	-----	-----
Nye.....	2	2. 56	13	-----	-----
Pershing.....	8	51. 40	549	-----	-----
White Pine.....	2	7. 72	6	-----	-----
Total, 1931.....	72	1, 436. 31	1, 218	120	8, 303
	86	1, 052. 74	1, 441	-----	2, 871

¹ Yielded also 5,475 pounds of copper recovered from "cyanide" precipitates.
² Yielded also 9,358 pounds of copper recovered from "cyanide" precipitates.

246 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Gross metal content of concentrates from concentrating mills in Nevada in 1932, by classes of concentrates

Class of concentrates	Concentrates produced	Gross metal content				
		Gold	Silver	Copper	Lead	Zinc
Dry and siliceous.....	<i>Short tons</i> 12	<i>Fine ounces</i> 20.93	<i>Fine ounces</i> 1,984	<i>Pounds</i> 32,093.582	<i>Pounds</i> 329	<i>Pounds</i>
Copper.....	58,626	13,316.38	41,609	32,093.582	366,465	
Lead.....	461	1,562.20	4,390	6,512		
Total, 1931.....	59,099 151,471	14,899.51 36,829.64	47,983 1,042,278	32,100,094 71,747,695	366,794 14,960,843	20,820,025

Nevada ore and old tailings concentrated in 1932, by methods of concentration

Method of concentration	Ore and old tailings concentrated	Concentrates and metal content						
		Concentrates produced	Gold	Silver	Copper		Lead	
					Gross	Recovered	Gross	Recovered
Flotation.....	<i>Short tons</i> 1,353,195	<i>Short tons</i> 59,087	<i>Fine ounces</i> 14,878.58	<i>Fine ounces</i> 45,999	<i>Pounds</i> 32,100,094	<i>Pounds</i> 30,558,546	<i>Pounds</i> 366,465	<i>Pounds</i> 351,806
Table.....	260	12	20.93	1,984	32,100,094	30,558,546	366,465	351,806
	1,353,455	59,099	14,899.51	47,983	32,100,094	30,558,546	366,794	352,122

Mine production of metals from concentrating mills in Nevada in 1932, in terms of recovered metals

BY COUNTIES

	Ore and old tailings treated		Concentrates and recovered metal					
	Ore	Old tailings	Concentrates produced	Gold	Silver	Copper	Lead	Zinc
Clark.....	<i>Short tons</i> 10	<i>Short tons</i> 1,500	<i>Short tons</i> 462	<i>Fine ounces</i> 1,563.20	<i>Fine ounces</i> 5,110	<i>Pounds</i> 4,233	<i>Pounds</i> 351,806	<i>Pounds</i> 316
Elko.....	200		10	7.19	30		316	
Esmeralda.....	50		1	12.74	1,234			
White Pine.....	1,351,695		58,626	13,316.38	41,609	30,554,313		
Total, 1931.....	1,351,955 3,026,389	1,500 10,110	59,099 151,471	14,899.51 36,829.64	47,983 1,042,278	30,558,546 68,884,076	352,122 14,206,517	18,962,020

BY CLASSES OF CONCENTRATES

Dry and siliceous.....		12	20.93	1,984		316
Copper.....		58,626	13,316.38	41,609	30,554,313	
Lead.....		461	1,562.20	4,390	4,233	351,806
		59,099	14,899.51	47,983	30,558,546	352,122

Gross metal content of Nevada concentrates produced in 1932, by classes of concentrates

Class of concentrates	Concentrates produced	Gross metal content				
		Gold	Silver	Copper	Lead	Zinc
Dry and siliceous.....	<i>Short tons</i> 78	<i>Fine ounces</i> 1,432.92	<i>Fine ounces</i> 3,099	<i>Pounds</i> 32,093.582	<i>Pounds</i> 5,466	<i>Pounds</i>
Copper.....	58,626	13,316.38	41,609	32,093.582	370,028	
Lead.....	467	1,536.52	4,493	6,696		
Total, 1931.....	59,171 151,557	16,335.82 37,882.38	49,201 1,043,719	32,100,278 71,747,695	375,494 14,963,866	20,820,025

GOLD, SILVER, COPPER, LEAD, AND ZINC IN NEVADA 247

Mine production of metals from Nevada concentrates in 1932, in terms of recovered metals

BY COUNTIES

	Concentrates	Gold	Silver	Copper	Lead	Zinc
	Short tons	Fine ounces	Fine ounces	Pounds	Pounds	Pounds
Clark	468	1,587.52	5,213	4,353	355,226	
Elko	10	7.19	30		316	
Esmeralda	52	1,359.64	1,755		4,781	
Humboldt	2	2.21	25		102	
Mineral	1	1.20	1			
Nye	2	2.56	13			
Pershing	8	51.40	549			
White Pine		13,324.10	41,615	30,554,313		
	59,171	16,335.82	49,201	30,558,666	360,425	
Total, 1931	151,557	37,882.38	1,043,719	68,884,076	14,209,388	18,962,020

BY CLASSES OF CONCENTRATES

		Gold	Silver	Copper	Lead	Zinc
Dry and siliceous	78	1,432.92	3,099		5,199	
Copper	58,626	13,316.38	41,609	30,554,313		
Lead	467	1,586.52	4,493	4,353	355,226	
	59,171	16,335.82	49,201	30,558,666	360,425	

Gross metal content of Nevada crude ore shipped to smelters in 1932, by classes of ore

Class of ore	Ore	Gross metal content				
		Gold	Silver	Copper	Lead	Zinc
	Short tons	Fine ounces	Fine ounces	Pounds	Pounds	Pounds
Dry and siliceous	42,549	32,465.30	598,982	72,297	26,896	
Copper	5,769	142.76	944	861,202		
Lead	1,762	741.26	32,948	5,880	389,725	
Zinc	36					34,120
Copper-lead	484	7.55	5,693	22,933	56,052	
Lead-zinc	594				135,421	258,748
	51,194	33,356.87	638,567	962,312	608,094	292,868
Total, 1931	78,527	16,780.20	387,782	3,960,159	1,927,956	2,374,160

Mine production of metals from Nevada crude ore shipped to smelters in 1932, in terms of recovered metals

BY COUNTIES

	Ore	Gold	Silver	Copper	Lead	Zinc
	Short tons	Fine ounces	Fine ounces	Pounds	Pounds	Pounds
Churchill	5	10.00	521			
Clark	669	84.40	373		95,526	254,795
Douglas	1	7.40	4			
Elko	1,170	201.63	6,103	536,244	67,141	
Esmeralda	4,304	8,253.84	83,211		595	
Eureka	955	558.68	10,051	1,940	124,934	
Humboldt	264	429.31	10,362	1,205	2,462	
Lander	1,403	2,509.31	5,415	12,466	1,952	
Lincoln	1,875	1,583.49	29,433	25,073	191,406	
Lyon	43	123.68	339		599	
Mineral	636	1,779.82	7,366	367	17,478	
Nye	10,872	12,787.58	401,364	1,730	3,493	
Pershing	363	752.42	9,879	2,888	605	
Storey	100	133.40	608	215	1,727	
White Pine	28,534	4,141.91	73,498	341,337	12,643	
	51,194	33,356.87	638,567	923,465	520,561	254,795
Total, 1931	78,527	16,780.20	387,782	3,741,063	1,651,246	1,898,328

BY CLASSES OF ORE

		Gold	Silver	Copper	Lead	Zinc
Dry and siliceous	42,549	32,465.30	598,982	67,038	23,703	
Copper	5,769	142.76	944	829,562		
Lead	1,762	741.26	32,948	4,505	374,037	
Zinc	36					29,684
Copper-lead	484	7.55	5,693	22,360	28,026	
Lead-zinc	594				94,795	225,111
	51,194	33,356.87	638,567	923,465	520,561	254,795

PRODUCTION BY MINING DISTRICTS

Mine production of gold, silver, copper, lead, and zinc in Nevada in 1932, by counties and districts, in terms of recovered metals¹

County and district ¹	Mines producing		Ore and old tailings	Gold			Silver (lode and placer) ²	Copper	Lead	Zinc	Total value
	Lode	Placer		Lode	Placer	Total					
Churchill County: Fairview.....	2		<i>Short tons</i> 20	<i>Fine ounces</i> 26.65		<i>Fine ounces</i> 26.65	<i>Fine ounces</i> 533				\$701
Clark County:											
Eldorado Canyon.....	8	2	3,463	968.34	110.68	1,079.02	3,717		499		23,368
Searchlight.....	7		2,973	2,018.41		2,018.41	4,853	4,353	355,458		54,031
Yellow Pine.....	7		721	98.27		98.27	16			254,795	12,524
Douglas County: Gardnerville.....	5		122	29.34		29.34	11				610
Elko County:											
Centennial.....	1		98	22.63		22.63	24				475
Charleston.....	2	3	1,141	114.89	4.52	119.41	299				2,552
Gold Circle.....	7		7,231	3,787.43		3,787.43	66,568				97,065
Mountain City.....	4		205	14.83		14.83	71		316		336
Tecoma.....	1		21				167		14,265		475
Esmeralda County:											
Desert.....	5		233	171.39		171.39	460				3,673
Divide.....	3		635	400.78		400.78	26,374				15,722
Goldfield.....	5		282,534	17,508.51		17,508.51	9,282	5,475			304,896
Lida.....		1			21.63	21.63	10				450
Silver Peak.....	7		3,497	4,368.42		4,368.42	3,233		5,376		91,376
Tonopah ³	1		1,713	911.44		911.44	86,762				43,308
Eureka County:											
Buckhorn.....	1		111	53.59		53.59	471				1,241
Eureka.....	5		819	452.96		452.96	9,380	1,120	122,516		15,755
Lynn.....	2	9	208	130.57	680.64	811.21	88				16,794
Humboldt County:											
Amos.....	2		201	224.48		224.48	68				4,659
Gold Run.....		2			21.63	21.63	3				448
Leonard Creek.....		3			7.85	7.85					162
Paradise.....	1	3	2	1.86		9.63	10				202
Sawtooth.....		6			30.78	30.78	3				637
Winnemucca.....	9	2	91	165.13	5.09	170.22	3,646	1,205	2,462		4,697
Lander County:											
Bullion.....	4	2	26	119.44	55.65	175.09	48		715		3,654
Hilltop.....	2		115	124.86		124.86	383	1,900			2,809
Lincoln County:											
Eagle Valley.....	1		4	4.62		4.62	118				129
Ferguson.....	4		4,531	2,182.62		2,182.62	14,134	522	6,733		49,340

Lyon County:	21	3, 125	1, 709.84	34.63	1, 709.84	1, 313	599	35, 734
Silver City	6	73	63.69		98.32			2, 043
Yerington								
Mineral County:								
Aurora								
Bell	3	40	85.27		85.27	173		1, 812
Regent	2	118	418.08		418.08	431		8, 764
Silver Star	9	118	288.01	32.30	320.31	906		6, 876
Nye County:	13	886	549.97		549.97	2, 337	248	12, 149
Bullfrog	6	201	77.79		77.79	228		1, 672
Clifton	2	38	109.01		109.01	715		2, 465
Fairplay	1	6	29.54		29.54	267		686
Indian Valley	1	20	11.51		11.51	7		240
Johnnie	2	490	90.57	2.96	93.53	63		1, 951
Mammoth	3	60	44.24		44.24	1, 061	119	1, 326
Manhattan	26	8, 624	9, 071.80	265.36	9, 337.16	2, 830		193, 814
Tonopah	6	8, 991	7, 879.67		7, 879.67	598, 925	1, 611	320, 887
Union	3	34	68.00	15.16	83.76	298		1, 807
Willow Creek	3	64	34.91		34.91	18		1, 727
Pershing County:								
Kenley	1	127	60.95	63.01	123.96	7, 770	605	4, 953
Kennedy	4		13.00		13.00	20		5, 276
Reconster	8	641	169.93	45.39	245.32	2, 029		5, 943
Scotts	5	37	107.00		107.00	2, 969		2, 742
Siena Troughs	12	1, 495	1, 010.00		1, 010.00	2, 969		21, 716
Siena	6	151	154.71	11.11	165.82	183		3, 489
Willard	1	151	13.10		13.10	13		6, 275
Storey County: Cornstock	28	5, 788	2, 885.90		2, 885.90	13, 908	215	63, 645
Washoe County:								
Donnelly	2	201	20.17		20.17	10		420
White Horse	15	286	362.16	72.60	374.76	150		7, 789
White Pine County:								
Cherry Creek	16	8, 595	1, 379.13	4.23	1, 383.36	52, 813	10, 788	44, 170
Duck Creek	3	10	09		09	43	12, 643	5, 216
Osoledo	3	336	229.06	445.86	674.92	190		14, 006
Robinson	5	1, 374, 039	16, 283.56		16, 283.56	88, 214	30, 884, 862	2, 805, 823
White Pine	6	822	49.88		49.88	2, 518		1, 741
Undistributed	71	127, 918	47, 168.95	3, 469.37	50, 638.32	337, 116	572, 300	1, 185, 568
Total, Nevada	382	1, 855, 031	124, 311.61	5, 408.22	129, 719.83	1, 304, 365	31, 487, 606	5, 067, 171

¹ Only those districts shown separately for which Bureau of Mines is at liberty to publish figures; other producing districts listed in footnote 4 and output included under "Undistributed."

² Of the 1,304,365 fine ounces of silver produced, 1,302,622 ounces were from lode mines and 1,743 ounces from placers.

³ Tonopah district lies in both Esmeralda and Nye Counties.

⁴ Includes following districts: Desert, Fireball, and Wonder, Churchill County; Crescent and Muddy River, Clark County; Pine Nut and Silver Lake, Douglas County; Cope, Delano, Jarbidge, Lime Mountain, Rowland, Spruce Mountain, Susie Creek, and Tuscarora, Elko County; Oneota and Palmetto, Esmeralda County; Cortez and Maggie Creek, Eureka County; Cove National, Platinum, and Sherman, Humboldt County; Battle Mountain, McCoy, New Pass, and Reese River, Lander County; Caliente, Cornet, Jack Rabbit, and Pioche, Lincoln County; Palmyra and Talpoosa, Lyon County; East Walker, Garfield, Hawthorne, Mountain View, Pilot Mountains, Pine Grove, Rawhide, and Rockland, Mineral County; Battle Mountain, Beatty, Eden Creek, Ellendale, Hannapah, Longstreet, Round Mountain, Silver Bow, and Tolicha, Nye County; Carson River, Ormsby County; Echo, Placerville, Rosebud, Unionville, and Velvet, Pershing County; and Granite, White Pine County.

250 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Mine production of gold, silver, copper, and lead in the Goldfield district, Esmeralda County, Nev., 1903-32

Period	Ore and old tailings		Gold ¹	Silver ¹	Copper	Lead	Total value
	Ore	Old tailings					
1903-10	<i>Short tons</i> 893, 334	<i>Short tons</i> -----	\$45, 130, 812	<i>Fine ounces</i> 297, 773	<i>Pounds</i> 160, 903	<i>Pounds</i> -----	\$45, 323, 025
1911-20	2, 914, 281	-----	37, 300, 661	1, 045, 780	7, 391, 660	27, 540	39, 406, 548
1921-30	28, 196	934, 000	1, 817, 220	46, 712	51, 513	5, 950	1, 854, 454
1931	586	274, 000	267, 071	6, 359	10, 537	-----	269, 874
1932	834	281, 700	361, 933	9, 282	5, 475	-----	364, 896
Total, 1903-32.....	3, 837, 231	1, 489, 700	84, 877, 697	1, 405, 906	7, 620, 088	33, 490	¹ 87, 218, 797

¹ Includes placer production.

² Dividends paid by 9 companies to end of 1932 total \$33,288,862.

Mine production of gold, silver, copper, and lead in the Tonopah district, Esmeralda and Nye Counties, Nev., 1901-32

Period	Ore and old tailings	Gold	Silver	Copper	Lead	Total value
1901-10	<i>Short tons</i> 1, 359, 321	\$10, 681, 687	<i>Fine ounces</i> 49, 443, 336	<i>Pounds</i> 2, 726	<i>Pounds</i> 8, 390	\$38, 856, 109
1911-20	4, 588, 552	18, 679, 537	84, 254, 831	3, 448	10, 625	75, 867, 500
1921-30	2, 287, 933	7, 281, 421	33, 356, 493	164	389	32, 501, 331
1931	16, 534	198, 081	823, 872	-----	-----	437, 004
1932	10, 604	181, 728	646, 687	1, 611	-----	364, 195
Total, 1901-32.....	8, 262, 944	37, 022, 454	168, 525, 219	7, 949	19, 404	¹ 148, 026, 139

¹ Dividends paid by 9 companies to end of 1932 total \$37,023,224.

Mine production of gold, silver, copper, lead, and zinc in the Robinson district, White Pine County, Nev., 1908-32

Period	Ore	Gold	Silver	Copper	Lead	Zinc	Total value
1908-10	<i>Short tons</i> 4, 476, 288	\$888, 237	<i>Fine ounces</i> 217, 868	<i>Pounds</i> 136, 193, 007	<i>Pounds</i> 707, 300	<i>Pounds</i> -----	\$18, 577, 527
1911-20	33, 109, 972	5, 242, 356	854, 309	697, 886, 163	2, 051, 135	4, 962, 652	144, 230, 352
1921-30	36, 561, 422	7, 734, 946	1, 288, 126	831, 291, 095	2, 252, 956	1, 107, 373	128, 101, 175
1931	2, 945, 270	768, 578	164, 871	71, 333, 607	-----	-----	7, 307, 749
1932	1, 374, 039	336, 611	83, 214	30, 884, 862	-----	-----	2, 305, 823
Total, 1908-32 ..	78, 466, 991	14, 970, 728	2, 608, 388	1, 767, 088, 734	5, 011, 391	6, 070, 025	300, 522, 626

COKE AND BYPRODUCTS

(DETAILED STATISTICS)

By W. H. YOUNG, H. L. BENNETT, AND F. G. TRYON

The urgent need for economy in public expenditure impels the Bureau of Mines to omit the usual discussion of developments in the coke industry in 1932 and to confine this report to presenting, through selected tables, the essential facts of the statistical record for the year.

The reader is referred to the chapter on Coke and Byproducts in the Minerals Yearbook, 1932-33, pages 419 to 432, for a preliminary discussion of the developments in the coke industry in 1932.

The present report also omits numerous derivative figures such as average yields and prices, as the reader who needs such data can make his own calculations if he is supplied with the primary record. If not readily found, any derivative figures carried in earlier reports will be furnished by the bureau upon application.

The report covers only coke made by high-temperature carbonization of coal in beehive and byproduct ovens. It is important to note, however, that byproduct coke produced by city gas companies is included. Adaptation of the byproduct coke oven to the needs of city gas manufacture has led a number of gas companies to install batteries of byproduct ovens to supplement or replace their coal-gas or water-gas plants. From the standpoint of ownership and accounting, these installations are part of the gas utility system, and the Bureau of the Census therefore groups them within the manufactured-gas industry under the title "Gas, manufactured, illuminating and heating." From other points of view, however, these installations are part of the byproduct coke industry, and they are so included in the statistics of the Bureau of Mines. The differences in classification are followed advisedly by the Bureau of the Census and Bureau of Mines after consultation with leaders of the gas and coke industries, and the two offices have collaborated in the collection and analysis of the statistics. To enable the reader to reconcile the two sets of figures and to ascertain the total production of gas and coke from all sources without duplication a table is given on pages 287 and 288 in which the production of those byproduct coke ovens operated by city gas companies is shown separately.

Coke is also made by other processes not included in this report, among them the following: About 2,500,000 tons of gas-house coke are made by the high-temperature carbonization of coal in types of equipment other than coke ovens, chiefly in horizontal retorts. Statistics of gas-house coke are given in Coke and By-Products in 1930, page 495. Petroleum coke is a byproduct of petroleum refining; production in 1932 amounted to 1,789,000 tons. Much experi-

mental work has been done in the field of low-temperature carbonization of coal, but the commercial feasibility of the process has not been demonstrated in the United States. The manufacture of coke from coal-tar pitch, on the other hand, is established on a commercial basis, but the tonnage produced is small. None of these kinds of coke are covered in this report. Gas-house coke, petroleum coke, and low-temperature coke are not adapted for blast-furnace and foundry purposes, which consume the great bulk of all the coke produced, and the production of coal-tar-pitch coke is so limited as to have small importance. Practically, therefore, the coke trade is concerned with beehive- and byproduct-oven coke.

The standard unit of measurement in the coke industry is the short or net ton of 2,000 pounds, and unless otherwise specified it is the unit employed throughout this chapter.

STATISTICAL SUMMARY

TABLE 1.—*Salient statistics of the coke industry in 1932*

	Byproduct	Beehive	Total
Coke produced:			
At merchant plants:			
Quantity..... net tons..	9,762,471		9,762,471
Value.....	\$55,002,249		\$55,002,249
At furnace plants:			
Quantity..... net tons..	11,374,371		11,374,371
Value.....	\$47,533,077		\$47,533,077
Total:			
Quantity..... net tons..	21,136,842	651,888	21,788,730
Value.....	\$102,535,326	\$1,801,290	\$104,336,616
Screenings or breeze produced:			
Quantity..... net tons..	2,118,854	47,659	2,166,513
Value.....	\$4,711,340	\$86,356	\$4,797,696
Coal charged into ovens:			
Quantity..... net tons..	30,887,181	1,029,636	31,916,817
Value.....	\$109,722,272	\$1,360,974	\$111,083,246
Average value per ton.....	\$3.55	\$1.32	\$3.48
Average yield in percent of coal charged:			
Coke.....	68.43	63.31	68.27
Breeze (at plants actually recovering).....	6.86	6.98	6.86
Ovens:			
In existence Jan. 1.....	13,108	21,588	34,696
In existence Dec. 31.....	13,053	19,440	32,493
Dismantled during year.....	142	2,594	2,736
In course of construction Dec. 31.....			
Daily capacity of ovens Dec. 31..... net tons..	171,631	(¹)	(¹)
Coke used by operator:			
In blast furnaces:			
Quantity..... net tons..	7,942,417		7,942,417
Value.....	\$32,650,046		\$32,650,046
For other purposes:			
Quantity..... net tons..	1,656,809	21	1,656,830
Value.....	\$9,787,584	\$76	\$9,787,660
Disposition of coke:			
Sold for furnace use to affiliated corporations:			
Quantity..... net tons..	488,343	1,644	489,987
Value.....	\$2,318,741	\$5,342	\$2,324,083
Merchant sales of furnace coke:			
Quantity..... net tons..	335,356	99,906	435,262
Value.....	\$1,415,108	\$256,860	\$1,671,968
Sold for foundry use:			
Quantity..... net tons..	908,518	146,253	1,054,771
Value.....	\$5,130,754	\$477,854	\$5,608,608
Sold for domestic use:			
Quantity..... net tons..	9,422,343	207,857	9,630,200
Value.....	\$49,052,193	\$454,256	\$49,506,449
Sold for manufacture of water gas:			
Quantity..... net tons..	482,546	84,641	567,187
Value.....	\$2,897,915	\$189,397	\$3,087,312
Sold for industrial and other use:			
Quantity..... net tons..	613,078	115,025	728,103
Value.....	\$2,863,762	\$421,878	\$3,285,640

¹ Data not available.

TABLE 1.—Salient statistics of the coke industry in 1932—Continued

	Byproduct	Beehive	Total
Disposition of screenings or breeze:			
Used by operator:			
For raising steam:			
Quantity.....net tons..	1, 408, 125	1, 289	1, 409, 414
Value.....	\$2, 991, 350	\$1, 289	\$2, 992, 639
To make producer or water gas:			
Quantity.....net tons..	80, 602	-----	80, 602
Value.....	\$333, 711	-----	\$333, 711
Other purposes:			
Quantity.....net tons..	144, 729	3, 239	147, 968
Value.....	\$272, 152	\$5, 070	\$277, 222
Sold:			
Quantity.....net tons..	608, 526	23, 680	632, 206
Value.....	\$1, 397, 627	\$39, 394	\$1, 437, 021
Average receipts per ton sold:			
Furnace coke (merchant sales).....	\$4. 22	\$2. 57	\$3. 84
Foundry coke.....	\$5. 65	\$3. 27	\$5. 32
Domestic coke.....	\$5. 21	\$2. 19	\$5. 14
For manufacture of water gas.....	\$6. 01	\$2. 24	\$5. 44
Other industrial coke.....	\$4. 67	\$3. 67	\$4. 51
Screenings or breeze.....	\$2. 30	\$1. 66	\$2. 27
Stocks on hand on Jan. 1, 1933:			
Furnace.....net tons..	1, 360, 660	12, 067	1, 372, 727
Foundry.....do.....	152, 222	7, 138	159, 360
Domestic and other.....do.....	1, 985, 380	7, 388	1, 992, 768
Breeze.....do.....	443, 503	6, 882	450, 385
Imports.....do.....	-----	-----	117, 275
Exports.....do.....	-----	-----	630, 151
Calculated consumption.....do.....	-----	-----	22, 177, 000
Byproducts produced:			
Gas.....M cubic feet..	347, 485, 898	-----	347, 485, 898
Wasted.....percent..	0. 9	-----	0. 9
Burned in coking process.....do.....	32. 7	-----	32. 7
Surplus sold or used.....do.....	66. 4	-----	66. 4
Tar.....gallons.....	303, 812, 046	-----	303, 812, 046
Ammonium sulphate or equivalent.....pounds.....	712, 215, 460	-----	712, 215, 460
Crude light oil.....gallons.....	73, 763, 166	-----	73, 763, 166
Yield of byproducts per ton of coal:			
Gas.....M cubic feet..	11. 25	-----	11. 25
Tar.....gallons.....	9. 84	-----	9. 84
Ammonium sulphate or equivalent.....pounds.....	23. 06	-----	23. 06
Crude light oil.....gallons.....	2. 94	-----	2. 94
Value of byproducts sold:			
Gas (surplus).....	\$54, 876, 039	-----	\$54, 876, 039
Tar:			
Sold.....	\$8, 930, 643	-----	\$8, 930, 643
Used by producer.....	\$3, 260, 273	-----	\$3, 260, 273
Ammonium sulphate or equivalent.....	\$6, 438, 421	-----	\$6, 438, 421
Crude light oil and derivatives.....	\$9, 404, 137	-----	\$9, 404, 137
Other byproducts ¹	\$758, 952	-----	\$758, 952
Total value of coke, breeze, and byproducts ²	\$190, 915, 131	\$1, 887, 646	\$192, 802, 777

¹ Includes naphthalene and tar derivatives.² Includes value of tar used by the coke plants.

TABLE 2.—Statistical trends of the coke industry, 1923 and 1929-32

	1923	1929	1930	1931	1932
Coke produced:					
Beehive..... net tons	19,379,870	6,472,019	2,776,316	1,128,337	651,888
Byproduct..... do	37,597,664	53,411,826	45,195,705	32,355,549	21,136,842
Total..... do	56,977,534	59,883,845	47,972,021	33,483,886	21,788,730
Percent of total from byproduct ovens.....	66.0	89.2	94.2	96.6	97.0
Disposition of coke (beehive and byproduct):					
Furnace coke (including all coke used by producer)..... net tons	47,774,408	46,785,722	34,524,554	20,608,175	10,524,496
Foundry coke..... do	3,600,719	2,888,508	2,127,715	1,357,276	1,054,771
Other industrial (including water gas) net tons	2,283,888	2,334,999	2,030,103	1,838,566	1,295,290
Domestic coke..... do	2,733,414	7,511,023	8,027,823	8,495,317	9,630,200
Number of ovens in existence:					
Beehive.....	62,349	30,082	23,907	21,588	19,440
Byproduct.....	11,156	12,649	12,831	13,108	13,053
Number of new byproduct ovens under construction at end of year.....	629	408	276		
Cost of coal charged, byproduct ovens, average per ton.....	\$4.76	\$3.50	\$3.48	\$3.55	\$3.55
Prices of coke:					
Average spot price of Connellsville furnace coke f.o.b. ovens.....	\$5.33	\$2.75	\$2.56	\$2.43	\$2.04
Average realization on byproduct coke sold:					
Furnace coke (merchant sales).....	\$6.74	\$5.38	\$4.95	\$4.589	\$4.22
Foundry coke.....	\$10.54	\$6.97	\$6.57	\$6.113	\$5.65
Other industrial (including water gas).....	\$9.06	\$5.77	\$5.88	\$5.717	\$5.26
Domestic.....	\$9.05	\$6.28	\$6.03	\$5.725	\$5.21
Yield of byproducts per ton of coal charged:					
Tar..... gallons	8.1	8.9	9.20	9.62	9.84
Ammonium sulphate or equivalent pounds.....	21.2	22.3	23.47	24.33	23.06
Light oil..... gallons	2.7	2.9	3.06	3.03	2.94
Surplus gas sold or used..... M cubic feet	5.9	6.6	6.75	7.02	7.47
Average gross receipts of byproducts per ton of coke produced:					
Tar sold or used.....	\$0.51	\$0.65	\$0.656	\$0.637	\$0.577
Ammonia and its compounds.....	\$0.84	\$0.54	\$0.502	\$0.441	\$0.305
Light oil and its derivatives.....	\$0.51	\$0.58	\$0.527	\$0.447	\$0.445
Surplus gas sold or used.....	\$1.37	\$1.58	\$1.754	\$2.084	\$2.596
Total byproducts, including breeze.....	\$3.48	\$3.60	\$3.708	\$3.863	\$4.182

TABLE 3.—Summary of coke produced, value, number of ovens, coal charged, and average yield, by States, in 1932

[Exclusive of screenings or breeze]

State	Byproduct							Beehive					Total			
	Plants in existence	Ovens		Coal used (net tons)	Yield of coke from coal (per cent)	Coke produced (net tons)	Value of coke at ovens		Ovens	Coal used (net tons)	Yield of coke from coal (per cent)	Coke produced (net tons)	Value of coke at ovens		Coke produced (net tons)	Value of coke at ovens
		Built	Under construction Dec. 31				Total	Per ton					Total	Per ton		
Alabama.....	8	1,248		2,025,710	69.14	1,400,597	\$3,770,988	\$2.69							1,400,597	\$3,770,988
Colorado.....	1	151		135,476	68.19	92,384	(1)	(1)	378	36,137	65.20	23,560	(1)	(1)	115,944	(1)
Connecticut.....	1	61		(2)	(2)	(2)	(2)	(2)							(2)	(2)
Illinois.....	8	950		2,162,661	66.05	1,428,334	6,830,743	4.78							1,428,334	6,830,743
Indiana.....	6	1,550		2,071,953	69.28	1,435,405	7,894,902	5.50							1,435,405	7,894,902
Kentucky.....	1	108		(2)	(2)	(2)	(2)	(2)							(2)	(2)
Maryland.....	1	361		682,167	73.22	499,502	(1)	(1)							499,502	(1)
Massachusetts.....	3	430		1,406,764	70.17	987,106	6,493,682	6.58							987,106	6,493,682
Michigan.....	9	674		3,091,775	70.03	2,165,109	10,144,218	4.69							2,165,109	10,144,218
Minnesota.....	3	196		569,485	67.73	385,699	2,782,262	7.21							385,699	2,782,262
Missouri.....	1	64		(2)	(2)	(2)	(2)	(2)							(2)	(2)
New Jersey.....	2	202		1,164,111	69.21	805,720	(1)	(1)							805,720	(1)
New York.....	9	1,024		4,499,561	69.56	3,130,078	19,246,204	6.15							3,130,078	19,246,204
Ohio.....	15	1,834		3,437,967	68.26	2,346,686	10,310,300	4.39							2,346,686	10,310,300
Oklahoma.....									100							
Pennsylvania.....	13	3,478		6,115,498	68.03	4,037,810	16,021,240	3.97	14,387	777,778	65.11	506,377	\$1,238,846	\$2.45	4,544,187	17,260,086
Rhode Island.....	1	65		(2)	(2)	(2)	(2)	(2)							(2)	(2)
Tennessee.....	1	24		101,085	71.75	72,529	239,346	3.30		22,320	49.08	10,954	24,925	2.28	83,483	264,271
Utah.....	1	56		190,468	54.53	103,862	(1)	(1)	819	13,098	42.08	5,511	(1)	(1)	109,373	(1)
Virginia.....									1,599	95,488	58.80	56,143	185,871	3.31	56,143	185,871
Washington.....	1	20		57,672	56.54	32,610	228,270	7.00	80	1,206	61.03	736	3,680	5.00	33,346	231,950
West Virginia.....	4	362		1,340,622	67.35	902,872	1,997,441	2.21	1,647	83,611	58.13	48,607	149,990	3.09	951,479	2,147,431
Wisconsin.....	2	195		(2)	(2)	(2)	(2)	(2)							(2)	(2)
Combined States.....				1,834,206	71.45	1,310,539	7,899,785	6.03							1,310,539	7,899,785
Undistributed.....							8,675,945	5.78								8,873,923
Total.....	91	13,053		30,887,181	68.43	21,136,842	102,535,326	4.85	19,440	1,029,636	63.31	651,888	1,801,290	2.76	21,788,730	104,336,616

¹ Included under "Undistributed."

² Included under "Combined States."

COKE AND COKE BREEZE

MONTHLY AND WEEKLY PRODUCTION

TABLE 4.—Byproduct, beehive, and total coke produced in the United States, 1929-32, by months, and average per day, in net tons

Month	1929		1930		1931		1932	
	Total	Daily average	Total	Daily average	Total	Daily average	Total	Daily average
Byproduct:								
January.....	4,355,000	140,500	4,167,100	134,400	3,082,700	99,400	2,097,200	67,600
February.....	4,084,800	145,900	3,977,200	142,100	2,889,000	103,200	1,992,300	68,700
March.....	4,607,600	148,600	4,361,400	140,700	3,246,300	104,700	2,085,100	67,200
April.....	4,451,700	148,400	4,216,800	140,600	3,136,900	104,600	1,881,200	62,800
May.....	4,658,700	150,300	4,234,800	136,600	3,116,000	100,500	1,740,200	56,100
June.....	4,504,200	150,200	3,927,500	130,900	2,706,900	90,200	1,635,100	51,200
July.....	4,608,200	148,700	3,746,700	120,900	2,560,900	82,600	1,521,000	49,000
August.....	4,637,300	149,600	3,611,100	116,500	2,435,400	78,600	1,472,300	47,500
September.....	4,407,700	146,900	3,376,100	112,600	2,303,100	76,800	1,542,400	51,400
October.....	4,604,600	148,500	3,407,800	109,900	2,381,800	76,800	1,736,100	56,000
November.....	4,316,400	143,900	3,114,000	103,800	2,269,400	75,600	1,749,000	58,300
December.....	4,175,600	134,700	3,055,200	98,600	2,227,200	71,800	1,784,900	57,600
Total.....	53,411,800	146,300	45,195,700	123,900	32,355,600	88,600	21,136,800	57,800
Beehive:								
January.....	515,500	19,100	318,000	11,800	144,400	5,300	73,700	2,800
February.....	473,700	19,700	279,000	11,600	144,300	6,000	72,300	2,900
March.....	574,000	22,100	288,700	11,100	132,100	5,100	73,500	2,700
April.....	503,200	19,300	299,600	11,500	96,200	3,700	47,400	1,800
May.....	642,800	23,800	270,100	10,000	83,200	3,200	38,400	1,500
June.....	648,200	25,900	259,800	10,400	77,300	3,000	34,800	1,300
July.....	645,800	24,800	213,100	8,200	67,200	2,600	32,800	1,300
August.....	604,500	22,400	168,300	6,500	61,600	2,400	34,800	1,300
September.....	542,600	21,700	166,900	6,400	68,900	2,700	39,400	1,500
October.....	505,900	18,800	176,600	6,600	93,400	3,500	57,000	2,200
November.....	444,700	17,100	166,300	6,700	87,100	3,500	68,400	2,600
December.....	371,100	14,800	169,900	6,500	72,600	2,800	79,400	3,100
Total.....	6,472,000	20,800	2,776,300	8,900	1,128,300	3,600	651,900	2,100
Total coke:								
January.....	4,870,500	159,600	4,485,100	146,200	3,227,100	104,700	2,170,900	70,400
February.....	4,558,500	165,600	4,256,200	153,700	3,033,300	109,200	2,064,600	71,600
March.....	5,181,600	170,700	4,650,100	151,800	3,378,400	109,800	2,158,600	69,900
April.....	4,954,900	167,700	4,516,400	152,100	3,233,100	108,300	1,928,600	64,600
May.....	5,301,500	174,100	4,504,900	146,600	3,199,200	103,700	1,778,600	57,600
June.....	5,152,400	176,100	4,187,300	141,300	2,784,200	93,200	1,569,900	52,500
July.....	5,254,000	173,500	3,959,800	129,100	2,628,100	85,200	1,553,800	50,300
August.....	5,241,800	172,000	3,779,400	123,000	2,497,000	81,000	1,607,100	48,800
September.....	4,950,300	168,600	3,543,000	119,000	2,372,000	79,500	1,581,800	52,900
October.....	5,110,500	167,300	3,584,400	116,500	2,475,200	80,300	1,793,100	58,200
November.....	4,761,100	161,000	3,280,300	110,500	2,356,500	79,100	1,817,400	60,900
December.....	4,546,700	149,500	3,225,100	105,100	2,299,800	74,600	1,864,300	60,700
Total.....	59,883,800	167,100	47,972,000	132,800	33,483,900	92,200	21,788,700	59,900

TABLE 5.—Coke shipped from the Connellsville and Lower Connellsville districts, Pennsylvania, 1928-32, by months, in net tons ¹

Month	1928	1929	1930	1931	1932
January	221,200	292,842	124,552	88,110	43,600
February	222,550	270,314	132,627	84,620	38,300
March	299,400	338,624	130,354	70,820	33,600
April	261,000	324,140	137,546	41,773	19,900
May	218,060	457,792	130,987	35,937	15,200
June	185,570	440,028	127,252	33,760	10,500
July	130,380	450,395	95,807	33,487	10,800
August	137,560	419,595	82,847	32,056	13,400
September	145,660	337,974	78,431	32,227	14,900
October	260,470	281,206	80,304	43,870	26,100
November	269,010	207,520	67,061	44,413	35,600
December	254,090	160,330	70,082	35,890	41,100
Total	2,604,950	3,980,760	1,257,850	2 576,963	303,000

¹ From the Connellsville Courier. For 1929, 1930, 1931, and 1932 the weekly shipments as reported by the Courier have been prorated on a monthly basis by the Bureau of Mines.
² Total revised to 573,730. The Daily Courier, Jan. 12, 1933.

TABLE 6.—Beehive coke produced in the United States in 1932, by weeks

[Estimated from railroad shipments]

Week ended—	Net tons	Week ended—	Net tons	Week ended—	Net tons
Jan. 1-2 ¹	6,500	May 14	8,700	Sept. 24	9,800
Jan. 9	18,800	May 21	9,200	Oct. 1	10,900
Jan. 16	15,900	May 28	8,200	Oct. 8	9,300
Jan. 23	16,500	June 4	7,600	Oct. 15	13,600
Jan. 30	17,400	June 11	8,100	Oct. 22	13,700
Feb. 6	15,600	June 18	8,000	Oct. 29	16,100
Feb. 13	18,800	June 25	7,100	Nov. 5	16,100
Feb. 20	17,300	July 2	7,900	Nov. 12	14,500
Feb. 27	17,900	July 9	7,100	Nov. 19	18,600
Mar. 5	17,900	July 16	8,000	Nov. 26	15,800
Mar. 12	17,300	July 23	6,800	Dec. 3	18,800
Mar. 19	18,100	July 30	7,000	Dec. 10	17,700
Mar. 26	13,900	Aug. 6	6,400	Dec. 17	19,000
Apr. 2	14,300	Aug. 13	8,400	Dec. 24	16,500
Apr. 9	12,100	Aug. 20	7,500	Dec. 31	15,100
Apr. 16	11,500	Aug. 27	8,100	Total	651,900
Apr. 23	9,500	Sept. 3	7,800		
Apr. 30	9,300	Sept. 10	7,300		
May 7	9,200	Sept. 17	8,400		

¹ 2 days only.

TABLE 7.—Byproduct coke produced in the United States in 1932, by months and by States, in net tons

[Based on reports from all producers]

State	January	February	March	April	May	June	July
Alabama	174,700	165,900	148,300	125,800	124,500	92,500	89,200
Colorado	10,100	13,600	16,400	14,300	13,700	11,400	2,800
Illinois	165,400	153,300	136,100	111,000	94,900	96,900	106,700
Indiana	156,900	138,900	137,000	125,700	118,800	117,300	115,200
Maryland	56,000	52,300	50,000	47,900	37,600	31,800	36,900
Massachusetts	89,500	79,500	90,400	76,000	80,700	76,100	79,800
Michigan	153,300	147,700	192,900	199,900	185,700	155,200	172,100
Minnesota	37,300	35,400	36,600	32,700	33,200	28,600	26,700
New Jersey	77,200	65,100	60,100	57,300	58,400	59,400	69,500
New York	294,500	271,800	297,700	283,700	260,300	230,900	220,800
Ohio	244,700	254,500	232,700	206,000	184,700	162,400	130,200
Pennsylvania	414,600	396,600	458,000	383,400	332,300	281,000	273,400
Tennessee	7,000	6,800	7,300	6,600	6,700	6,200	6,200
Utah	10,600	9,900	9,600	10,100	10,600	9,100	9,700
Washington	2,400	2,800	3,000	2,900	2,800	2,700	2,800
West Virginia	85,100	84,100	90,000	82,200	78,100	66,700	68,900
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	117,900	114,100	119,000	115,700	117,200	106,900	110,600
Total	2,097,200	1,992,300	2,085,100	1,881,200	1,740,200	1,535,100	1,521,000
At merchant plants	887,200	807,200	831,400	790,500	787,500	749,000	769,700
At furnace plants	1,210,000	1,185,100	1,253,700	1,090,700	952,700	786,100	751,300

TABLE 7.—Byproduct coke produced in the United States in 1932, by months and by States, in net tons—Continued

State	August	September	October	November	December	Total
Alabama.....	85,500	86,200	102,300	105,600	100,100	1,400,600
Colorado.....	1,700	1,500	2,700	1,500	2,700	92,400
Illinois.....	108,600	100,200	108,600	113,300	133,300	1,428,300
Indiana.....	102,800	102,400	107,600	103,300	109,500	1,435,400
Maryland.....	29,700	39,700	40,000	39,700	37,900	499,500
Massachusetts.....	78,000	78,900	85,600	86,300	86,300	987,100
Michigan.....	175,900	169,900	191,300	207,000	214,200	2,165,100
Minnesota.....	26,400	31,600	32,400	31,400	33,400	385,700
New Jersey.....	67,800	69,300	77,300	74,800	69,500	805,700
New York.....	222,600	226,300	262,000	270,900	289,100	3,130,100
Ohio.....	131,100	176,200	216,300	205,900	202,000	2,346,700
Pennsylvania.....	258,800	290,000	317,800	321,500	310,400	4,037,800
Tennessee.....	600	5,900	6,300	6,300	6,600	72,500
Utah.....	7,300	6,800	6,300	6,300	7,600	103,900
Washington.....	2,700	2,600	2,600	2,600	2,700	32,600
West Virginia.....	64,900	63,800	75,300	70,900	72,900	902,900
Connecticut, Kentucky, Mis- souri, Rhode Island, and Wis- consin.....	107,900	91,100	101,700	101,700	106,700	1,310,500
Total.....	1,472,300	1,542,400	1,736,100	1,749,000	1,784,900	21,136,800
At merchant plants.....	764,600	777,600	859,100	845,500	893,200	9,762,500
At furnace plants.....	707,700	764,800	877,000	903,500	891,700	11,374,300

TABLE 8.—Beehive coke produced in the United States in 1932, by months and by States, in net tons

[Based on railroad shipments]

State	January	February	March	April	May	June	July
Colorado.....	2,500	2,000	1,800	1,700	1,300	3,000	3,000
Pennsylvania.....	59,800	57,900	59,500	36,500	28,200	26,000	22,400
Tennessee.....	600	1,600	600	300	1,200	300	1,400
Utah.....	200	300	200	100	200	100	100
Virginia.....	5,000	4,600	5,500	4,800	3,800	2,900	3,200
Washington.....	200	400	100				
West Virginia.....	5,400	5,500	5,800	4,000	3,700	2,500	2,700
Total.....	73,700	72,300	73,500	47,400	38,400	34,800	32,800

State	August	September	October	November	December	Total
Colorado.....	2,300	1,800	1,500	1,400	1,300	23,600
Pennsylvania.....	24,400	26,700	43,100	54,600	67,300	506,400
Tennessee.....	600	1,000	2,100	1,200	100	11,000
Utah.....	400	800	1,300	1,000	800	5,500
Virginia.....	4,400	5,900	5,300	5,900	4,800	56,100
Washington.....						700
West Virginia.....	2,700	3,200	3,700	4,300	5,100	48,600
Total.....	34,800	39,400	57,000	68,400	79,400	651,900

PRODUCTION BY FURNACE AND NONFURNACE PLANTS

TABLE 9.—Number and production of byproduct coke plants connected with iron furnaces and of other byproduct plants, 1913, 1918, and 1930-32

Year	Number of active plants		Coke produced (net tons)		Percent of production	
	Furnace plants	Other plants	Furnace plants	Other plants	Furnace plants	Other plants
1913.....	20	16	9,277,832	3,436,868	73.0	27.0
1918.....	36	24	19,220,342	6,777,238	73.9	26.1
1930.....	46	43	33,206,054	11,989,651	73.5	26.5
1931.....	46	42	20,817,240	11,538,309	64.3	35.7
1932.....	44	44	11,374,371	9,762,471	53.8	46.2

TABLE 10.—Monthly and average daily production of byproduct coke by plants associated with iron furnaces and by all other plants, 1930-32, in net tons

Month	1930		1931		1932	
	Furnace plants	Other plants	Furnace plants	Other plants	Furnace plants	Other plants
Monthly production:						
January.....	3,102,500	1,064,600	2,052,400	1,030,300	1,210,000	887,200
February.....	3,008,200	969,000	1,956,300	932,700	1,185,100	807,200
March.....	3,317,000	1,044,400	2,234,700	1,011,600	1,263,700	831,400
April.....	3,205,900	1,010,900	2,188,200	948,700	1,090,700	790,500
May.....	3,197,500	1,037,300	2,158,300	957,700	952,700	787,500
June.....	2,955,500	972,000	1,776,100	930,800	786,100	749,000
July.....	2,759,000	987,700	1,615,500	945,400	751,300	769,700
August.....	2,620,300	990,800	1,445,800	989,600	707,700	764,600
September.....	2,432,400	943,700	1,369,800	933,300	764,800	777,600
October.....	2,439,900	967,900	1,393,300	988,500	877,000	859,100
November.....	2,136,500	977,500	1,338,700	930,700	903,500	845,500
December.....	2,031,400	1,023,800	1,288,200	939,000	891,700	893,200
Total.....	33,206,100	11,989,600	20,817,300	11,538,300	11,374,300	9,762,500
Average daily production:						
January.....	100,100	34,300	66,200	33,200	39,000	28,600
February.....	107,400	34,600	69,900	33,300	40,900	27,800
March.....	107,000	33,700	72,100	32,600	40,400	26,800
April.....	106,900	33,700	72,900	31,600	36,400	26,400
May.....	103,100	33,500	69,600	30,900	30,700	25,400
June.....	98,500	32,400	59,200	31,000	26,200	25,000
July.....	89,000	31,900	52,100	30,500	24,200	24,800
August.....	84,500	32,000	46,600	31,900	22,800	24,700
September.....	81,100	31,500	45,700	31,100	25,500	25,900
October.....	78,700	31,200	44,900	31,900	28,300	27,700
November.....	71,200	32,600	44,600	31,000	30,100	28,200
December.....	65,500	33,000	41,600	30,300	28,800	28,800
Average.....	91,000	32,800	57,000	31,600	31,100	26,700

PRODUCTION BY STATES AND DISTRICTS

TABLE 11.—Byproduct and beehive coke produced, by States, 1918 and 1929-32, in net tons

State	1918	1929	1930	1931	1932
Byproduct:					
Alabama.....	2,634,451	4,753,967	3,986,920	2,943,143	1,400,597
Colorado.....	230,663	568,031	379,070	225,760	92,384
Connecticut.....	(1)	(1)	(1)	(1)	(1)
Illinois.....	2,285,610	4,204,116	3,576,577	2,478,984	1,428,334
Indiana.....	3,898,215	6,455,378	4,984,620	2,757,135	1,435,405
Kentucky.....	517,749	(1)	(1)	(1)	(1)
Maryland.....	474,368	1,393,052	1,169,016	817,995	499,502
Massachusetts.....	556,397	776,679	862,663	1,150,270	987,106
Michigan.....	(1)	2,679,971	2,603,815	2,436,630	2,165,109
Minnesota.....	784,065	746,004	641,205	440,489	385,699
Missouri.....	(1)	(1)	(1)	(1)	(1)
New Jersey.....	632,148	897,530	918,814	930,912	805,720
New York.....	1,069,587	4,299,470	3,849,565	3,573,311	3,130,073
Ohio.....	5,226,334	8,521,132	6,163,324	3,982,939	2,346,636
Pennsylvania.....	4,536,981	14,489,283	12,529,255	7,524,722	4,037,810
Rhode Island.....	(1)	(1)	(1)	(1)	(1)
Tennessee.....	124,469	113,285	100,439	83,439	72,529
Utah.....	(1)	267,939	226,361	146,788	103,862
Washington.....	30,129	40,879	36,221	30,104	32,610
West Virginia.....	603,393	1,431,314	1,479,431	1,265,039	902,872
Wisconsin.....	(1)	(1)	(1)	(1)	(1)
Combined States.....	2,293,021	1,776,796	1,689,411	1,612,889	1,310,539
Total.....	25,997,580	53,411,826	45,195,705	32,355,549	21,136,842

1 Included under "Combined States."

260 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

TABLE 11.—Byproduct and beehive coke produced, by States, 1918 and 1929-32, in net tons—Continued

State	1918	1929	1930	1931	1932
Beehive:					
Alabama.....	1,717,721				
Colorado.....	758,784	156,426	79,373	(1)	23,560
Georgia.....	22,048				
Kentucky.....	301,036				
New Mexico.....	597,072				
Ohio.....	138,909	(2)			
Oklahoma.....	(1)				
Pennsylvania.....	22,136,664	2 5,367,685	2,011,324	855,527	506,377
Tennessee.....	302,637	95,881	25,473	17,074	10,954
Utah.....	(1)	14,055	6,508	(1)	5,511
Virginia.....	1,234,256	314,859	219,656	99,305	56,143
Washington.....	93,659	25,844	12,252	582	736
West Virginia.....	2,716,613	497,269	421,730	113,627	48,607
Combined States.....	461,393			42,222	
Total.....	30,480,792	6,472,019	2,776,316	1,128,337	651,888
Grand total.....	56,478,372	59,883,845	47,972,021	33,483,886	21,788,730

¹ Included under "Combined States."

² A small amount of beehive coke produced in Ohio is included with Pennsylvania.

TABLE 12.—Byproduct and beehive coke produced in Pennsylvania in 1932, by districts

[The figures of number of plants and ovens include those idle during the year; no ovens were under construction in 1932]

District	Plants	Ovens	Coal used (net tons)	Yield of coke from coal (per cent)	Coke produced (net tons)	Value of coke at ovens	
						Total	Per ton
Byproduct:							
Eastern Pennsylvania ¹	6	864	1,846,313	68.23	1,259,744	\$6,804,534	\$5.40
Western Pennsylvania ²	7	2,614	4,269,185	65.07	2,778,066	9,216,706	3.32
Total.....	13	3,478	6,115,498	66.03	4,037,810	16,021,240	3.97
Beehive:							
Allegheny Mountain and Allegheny Valley.....	3	442	43,706	60.71	26,536	84,430	3.18
Connellsville.....	30	6,538	135,087	67.29	90,900	227,503	2.50
Lower Connellsville.....	21	4,019	355,199	63.51	225,594	505,518	2.24
Upper Connellsville.....	6	874	192,911	67.97	131,119	299,900	2.29
Pittsburgh ³ and other districts ⁴	10	2,514	50,875	63.35	32,228	121,495	3.77
Total.....	70	14,387	777,778	65.11	506,377	1,238,846	2.45
Grand total.....	83	17,865	6,893,276	65.92	4,544,187	17,260,086	3.80

¹ Includes plants at Bethlehem, Chester, Lebanon, Philadelphia, Steelton, and Swedeland.

² Includes plants at Aliquippa, Clairton, Erie, Johnstown, Midland, Neville Island, and Pittsburgh.

³ There was no production in the Pittsburgh district during 1932.

⁴ Includes Bedford, Huntingdon, and parts of Indiana and Westmoreland Counties.

TABLE 13.—Byproduct coke produced in Ohio in 1932, by districts

[No ovens were under construction in 1932]

District	Plants	Ovens	Coal used (net tons)	Yield of coke from coal (per cent)	Coke produced (net tons)	Value of coke at ovens	
						Total	Per ton
Canton, Cleveland, and Massillon.....	5	595	869,894	68.53	596,103	\$2,926,260	\$4.91
Youngstown.....	3	594	800,523	64.29	514,694	2,171,623	4.22
Other districts ¹	7	645	1,767,550	69.92	1,235,889	5,212,417	4.22
Total.....	15	1,834	3,437,967	68.26	2,346,686	10,310,300	4.39

¹ Includes plants at Hamilton, Ironton, Lorain, Painesville, Portsmouth, Toledo, and Warren.

NUMBER AND TYPE OF OVENS

TABLE 14.—Coke ovens completed and abandoned in 1932 and total number in existence at end of year, by States

State	Plants in existence Dec. 31	Ovens ¹		
		Abandoned during year	In existence Dec. 31	
			Number	Capacity per day (net tons of coke)
Byproduct:				
Alabama.....	8	140	1,248	13,995
Colorado.....	1		151	2,233
Connecticut.....	1		61	(²)
Illinois.....	8		950	13,244
Indiana.....	6		1,550	21,829
Kentucky.....	1		108	(²)
Maryland.....	1		361	5,088
Massachusetts.....	3		430	4,483
Michigan.....	9		674	7,882
Minnesota.....	3		196	2,597
Missouri.....	1		64	(²)
New Jersey.....	2		202	2,485
New York.....	9		1,024	14,923
Ohio.....	15	2	1,834	24,778
Pennsylvania.....	13		3,478	46,326
Rhode Island.....	1		65	(²)
Tennessee.....	1		24	375
Utah.....	1		56	1,015
Washington.....	1		20	101
West Virginia.....	4		362	4,821
Wisconsin.....	2		195	(²)
Undistributed.....				5,456
Total.....	91	142	³ 13,053	³ 171,631
At merchant plants.....	44	2	3,607	42,475
At furnace plants.....	47	140	9,446	129,156
Beehive:				
Colorado.....	2		378	(⁴)
Oklahoma.....	1		100	(⁴)
Pennsylvania.....	70	1,415	14,887	(⁴)
Tennessee.....	3	293	430	(⁴)
Utah.....	1		819	(⁴)
Virginia.....	8	43	1,599	(⁴)
Washington.....	1		80	(⁴)
West Virginia.....	13	843	1,647	(⁴)
Total.....	99	2,594	19,440	(⁴)

¹ No new ovens were put into operation during the year, and no new ovens were under construction at the end of 1932.

² Included under "Undistributed."

³ Includes 220 ovens, with a capacity of 3,540 tons per day, completed but not put into operation.

⁴ Data not available.

TABLE 15.—Byproduct ovens of each type at end of 1932, by States

State	Koppers	Semet-Solvay	Wilputte	United Otto ¹	Cambría-Belgian	Roberts ²	American Foundation	Klönne	All others ³	Total
Alabama.....	768	420	60	-----	-----	-----	-----	-----	-----	1,248
Colorado.....	151	-----	-----	-----	-----	-----	-----	-----	-----	151
Connecticut.....	61	-----	-----	-----	-----	-----	-----	-----	-----	61
Illinois.....	662	120	88	-----	-----	80	-----	-----	-----	950
Indiana.....	1,269	161	120	-----	-----	-----	-----	-----	-----	1,550
Kentucky.....	-----	108	-----	-----	-----	-----	-----	-----	-----	108
Maryland.....	361	-----	-----	-----	-----	-----	-----	-----	-----	361
Massachusetts.....	175	-----	55	200	-----	-----	-----	-----	-----	430
Michigan.....	131	336	120	-----	-----	-----	-----	-----	87	674
Minnesota.....	196	-----	-----	-----	-----	-----	-----	-----	-----	196
Missouri.....	56	-----	-----	-----	-----	-----	-----	-----	8	64
New Jersey.....	202	-----	-----	-----	-----	-----	-----	-----	-----	202
New York.....	743	226	-----	-----	-----	-----	55	-----	-----	1,024
Ohio.....	1,541	293	-----	-----	-----	-----	-----	-----	-----	1,834
Pennsylvania.....	3,018	218	97	-----	120	25	-----	-----	-----	3,478
Rhode Island.....	65	-----	-----	-----	-----	-----	-----	-----	-----	65
Tennessee.....	-----	24	-----	-----	-----	-----	-----	-----	-----	24
Utah.....	56	-----	-----	-----	-----	-----	-----	-----	-----	56
Washington.....	-----	-----	-----	-----	-----	-----	-----	20	-----	20
West Virginia.....	316	-----	46	-----	-----	-----	-----	-----	-----	362
Wisconsin.....	115	80	-----	-----	-----	-----	-----	-----	-----	195
Total.....	9,886	1,986	586	200	120	105	55	20	95	13,053
At merchant plants.....	1,911	1,080	221	200	-----	25	55	20	95	3,607
At furnace plants.....	7,975	906	365	-----	120	80	-----	-----	-----	9,446

¹ Includes the Otto-Hoffman type.² Includes the Robert-Morrissey type.³ Includes 8 Piette, 27 Parker-Russell, and 60 Improved Equipment Co. ovens.

CAPACITY OF BYPRODUCT OVENS

TABLE 16.—Estimated annual potential production of coke and coal required for charge of byproduct coke ovens in the United States, 1930-32, when operated at different percentages of maximum capacity, in millions of net tons

Percent of maximum capacity	1930				1931		1932	
	Ovens completed Dec. 31		Including ovens under construction		Ovens completed Dec. 31 ¹			
	Coke	Coal ²	Coke	Coal ²	Coke	Coal ²	Coke	Coal ²
100.....	61.5	87.9	63.1	90.1	63.5	90.7	62.8	89.7
90.....	55.4	79.1	56.8	81.1	57.2	81.6	56.5	80.7
85.....	52.3	74.7	53.6	76.6	54.0	77.1	53.4	76.2
75.....	46.1	65.9	47.3	67.6	47.6	68.0	47.1	67.3
50.....	30.8	44.0	31.6	45.1	31.8	45.4	31.4	44.9

¹ No ovens under construction at end of 1931 or 1932.² Coal for charge estimated on basis of 70 percent yield in coke.

TABLE 17.—Relation (percent) of production to maximum capacity at byproduct coke plants, 1927-32, by months

Month	1927	1928	1929	1930	1931	1932	Month	1927	1928	1929	1930	1931	1932
January.....	84.5	80.4	88.6	82.8	59.2	39.0	August.....	79.8	82.8	93.6	69.2	46.8	27.4
February.....	85.4	82.2	91.3	87.5	61.5	39.6	September.....	80.8	84.3	91.9	66.7	45.7	29.7
March.....	87.2	83.2	93.0	86.6	62.4	38.8	October.....	76.4	86.3	92.3	64.9	45.8	32.3
April.....	84.8	82.6	92.8	85.7	62.3	36.2	November.....	74.2	86.8	89.0	60.5	45.0	33.6
May.....	83.9	83.5	94.0	82.7	59.9	32.4	December.....	74.6	87.8	83.1	57.5	42.7	33.2
June.....	82.3	83.2	93.9	79.2	53.7	29.5	The year.....	80.9	83.7	91.4	73.5	52.8	33.6
July.....	79.3	81.0	93.0	72.3	49.2	28.3							

QUANTITY AND COST OF COAL CHARGED

TABLE 18.—Coal consumed in coke ovens, 1930-32, by months, in net tons

[For figures 1912-29, inclusive, see Coke and By-Products in 1928, pp. 731-733, and Coke and By-Products in 1930, p. 514]

Month	1930			1931			1932		
	Byproduct	Beehive	Total	Byproduct	Beehive	Total	Byproduct	Beehive	Total
January	6,043,800	490,700	6,534,500	4,457,400	226,500	4,683,900	3,065,300	116,400	3,181,700
February	5,760,600	430,600	6,191,200	4,179,700	226,200	4,405,900	2,913,500	114,100	3,027,600
March	6,323,100	445,500	6,768,600	4,692,700	207,000	4,899,700	3,052,500	116,100	3,168,600
April	6,112,400	462,400	6,574,800	4,529,400	150,500	4,679,900	2,749,700	74,900	2,824,600
May	6,134,000	416,800	6,550,800	4,496,600	130,100	4,626,700	2,241,500	60,700	2,603,400
June	5,689,000	400,900	6,089,900	3,904,800	120,900	4,025,700	2,219,300	55,000	2,296,500
July	5,433,700	328,800	5,762,500	3,688,500	105,200	3,793,700	2,219,300	51,800	2,271,100
August	5,241,400	259,700	5,501,100	3,536,100	96,200	3,632,300	2,254,400	62,200	2,316,600
September	4,902,400	257,500	5,159,900	3,349,900	107,800	3,457,700	2,254,400	90,000	2,627,800
October	4,942,400	272,500	5,214,900	3,468,900	146,300	3,614,600	2,537,800	108,000	2,644,500
November	4,513,200	256,700	4,769,900	3,303,900	136,400	3,440,300	2,556,500	125,400	2,732,200
December	4,426,300	262,100	4,687,400	3,239,000	113,700	3,352,700	2,606,800	125,400	2,732,200
Total	65,521,300	4,284,200	69,805,500	46,846,300	1,766,800	48,613,100	30,887,200	1,029,600	31,916,800

TABLE 19.—Total quantity and value at ovens of coal used in manufacture of coke, by States, in 1932

State	Coal used (net tons)	Cost of coal		Coal per ton of coke	
		Total	Per ton of coal	Net tons	Cost
Byproduct plants:					
Alabama	2,025,710	\$3,944,168	\$1.95	1.45	\$2.83
Colorado	135,476	(¹)	(¹)	1.47	-----
Illinois	2,162,661	9,019,053	4.17	1.51	6.30
Indiana	2,071,953	8,809,633	4.25	1.44	6.12
Maryland	682,167	(¹)	(¹)	1.37	-----
Massachusetts	1,406,764	6,316,472	4.49	1.43	6.42
Michigan	3,091,775	12,111,231	3.92	1.43	5.61
Minnesota	569,485	2,927,230	5.14	1.48	7.61
New Jersey	1,164,111	(¹)	(¹)	1.44	-----
New York	4,499,561	18,770,660	4.17	1.44	6.00
Ohio	3,437,967	11,018,249	3.20	1.47	4.70
Pennsylvania	6,115,498	17,487,535	2.86	1.51	4.32
Tennessee	101,085	298,802	2.96	1.39	4.11
Utah	190,468	(¹)	(¹)	1.83	-----
Washington	57,672	265,957	4.61	1.77	8.16
West Virginia	1,340,622	2,364,635	1.76	1.48	2.60
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	1,834,206	7,501,867	4.09	1.40	5.73
Undistributed	-----	8,886,780	4.09	-----	-----
Total	30,887,181	109,722,272	3.55	1.46	5.18
At merchant plants	13,958,773	57,721,586	4.14	1.43	5.92
At furnace plants	16,928,408	52,000,686	3.07	1.49	4.57
Beehive plants:					
Colorado and Utah	49,235	132,983	2.70	1.69	4.56
Pennsylvania	777,778	980,612	1.26	1.54	1.94
Tennessee	22,320	15,930	.71	2.04	1.45
Virginia	95,486	126,077	1.32	1.70	2.24
Washington	1,206	5,186	4.30	1.64	7.05
West Virginia	83,611	100,186	1.20	1.72	2.06
Total	1,029,636	1,360,974	1.32	1.58	2.09

¹ Included under "Undistributed."

TABLE 20.—Average cost per net ton of coal charged into byproduct coke ovens, by States, 1928-32

State	1928	1929	1930	1931	1932	State	1928	1929	1930	1931	1932
Alabama.....	\$2.62	\$2.49	\$2.39	\$2.19	\$1.95	Pennsylvania.....	\$2.77	\$2.73	\$2.69	\$2.77	\$2.86
Illinois.....	4.30	4.29	4.32	4.33	4.17	Tennessee.....	3.12	3.02	3.02	2.97	2.96
Indiana.....	4.75	4.61	4.52	4.42	4.25	Washington.....	5.28	5.26	5.21	5.12	4.61
Massachusetts.....	4.86	4.70	4.61	4.65	4.49	West Virginia.....	2.57	2.41	2.18	1.98	1.76
Michigan.....	4.37	4.29	3.96	4.22	3.92	United States average..	3.57	3.50	3.48	3.55	3.55
Minnesota.....	5.31	5.04	4.97	5.19	5.14	Cost of coal per ton of					
New York.....	4.33	4.22	4.18	4.26	4.17	coke.....	5.18	5.04	5.05	5.15	5.18
Ohio.....	3.43	3.31	3.48	3.40	3.20						

PREPARATION AND SOURCE OF COAL CHARGED

TABLE 21.—Washed and unwashed coal used in the manufacture of byproduct and beehive coke, by States in which used, 1932, in net tons

State	Washed	Unwashed	Total
Byproduct ovens:			
Alabama.....	1,951,906	73,804	2,025,710
Colorado.....	135,476		135,476
Illinois.....	282,980	1,879,681	2,162,661
Indiana.....		2,071,953	2,071,953
Maryland.....		682,167	682,167
Massachusetts.....	18,347	1,388,417	1,406,764
Michigan.....		3,091,775	3,091,775
Minnesota.....		569,485	569,485
New Jersey.....		1,164,111	1,164,111
New York.....	947,440	3,552,121	4,499,561
Ohio.....	306,444	3,131,523	3,437,967
Pennsylvania.....	2,915,789	3,199,709	6,115,498
Tennessee.....	101,085		101,085
Utah.....		190,468	190,468
Washington.....	57,672		57,672
West Virginia.....		1,340,622	1,340,622
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin.....		1,834,206	1,834,206
Total.....	6,717,139	24,170,042	30,887,181
At merchant plants.....	1,210,377	12,748,396	13,958,773
At furnace plants.....	5,506,762	11,421,646	16,928,408
Beehive ovens:			
Colorado.....	36,137		36,137
Pennsylvania.....	118,531	659,247	777,778
Tennessee.....	22,320		22,320
Utah.....		13,098	13,098
Virginia.....		95,486	95,486
Washington.....	1,206		1,206
West Virginia.....		83,611	83,611
Total.....	178,194	851,442	1,029,636

TABLE 22.—Coal used in manufacture of byproduct coke in 1932, by fields of origin, in net tons

[Based upon detailed reports from each coke plant. The difference between these totals and those shown in tables 3, 19, etc., is due to change in stock, loss of weight in handling, and the fact that these sometimes represent purchases during the year rather than actual consumption]

State and district where coal was produced	Total used	States where coal was consumed—in order of importance
Alabama.....	2,098,570	Alabama.
Colorado:		
Trinidad.....	131,972	Colorado.
Pitkin County.....	918	Utah.
Crested Butte and Walsen districts.....	18,840	Colorado.
Illinois: Southern.....	158,673	Illinois.
Kentucky:		
Western Kentucky.....	36,728	Do.
Eastern Kentucky:		
Elkhorn.....	1,166,919	New York, Michigan, Missouri, Illinois, Minne- sota, Kentucky, Indiana, Ohio.
Harlan.....	906,018	Indiana, Illinois, Michigan, Minnesota, Ohio.
Kenova-Thacker.....	427,375	Indiana, Wisconsin.
Pond Creek.....	911,137	Michigan, Ohio.
Pennsylvania:		
Central Pennsylvania, high volatile.....	179,965	New York.
Central Pennsylvania, low volatile.....	490,772	Pennsylvania, New York.
Connellsville.....	5,418,616	Pennsylvania, Ohio, West Virginia, Michigan, Illinois, New York, Minnesota.
Freeport.....	689,213	West Virginia, New York, Pennsylvania.
Pittsburgh.....	4,354,539	Pennsylvania, New York, Ohio, Michigan, Min- nesota, Illinois, Wisconsin, New Jersey, Mas- sachusetts.
Somerset.....	92,715	Pennsylvania, Ohio, West Virginia.
Westmoreland.....	317,904	Maryland, Pennsylvania, New York.
Tennessee.....	82,890	Tennessee.
Utah: Carbon County.....	189,550	Utah.
Virginia: Wise, Lee, and Dickenson Counties. ¹	644,102	New York, New Jersey, Massachusetts.
Washington: Pierce County.....	57,672	Washington.
West Virginia:		
Northern.....	1,406,046	Ohio, Pennsylvania, Maryland, New Jersey, West Virginia, Massachusetts.
Kanawha and Logan.....	5,818,870	Massachusetts, Illinois, Ohio, Indiana, Michi- gan, Pennsylvania, New York, New Jersey, Wisconsin, Connecticut, Rhode Island, West Virginia, Kentucky, Minnesota, Missouri.
New River and Winding Gulf.....	1,699,138	New York, New Jersey, Massachusetts, Illinois, Ohio, Connecticut, Pennsylvania, Missouri, Rhode Island.
Pocahontas ¹	3,595,667	Indiana, Michigan, Ohio, New York, Pennsylv- ania, Illinois, Wisconsin, Maryland, Minne- sota, Connecticut, Kentucky, West Virginia, Tennessee, Alabama, Massachusetts.
Total.....	30,894,609	

¹ Coal from the extension of the Pocahontas field in Tazewell County, Va., is included under West Virginia (Pocahontas).

TABLE 23.—Source of coal used in the manufacture of byproduct coke in 1932, by States where consumed, separating merchant and furnace plants

State where coal was used	Coal produced in—										Total
	Alabama	Colorado	Illinois	Kentucky	Pennsylvania	Tennessee	Utah	Virginia	Washington	West Virginia	
Alabama:											
Merchant plants.....	489,494									(1)	489,494
Furnace plants.....	1,609,076										1,609,076
Total.....	2,098,570									(1)	2,098,570
Colorado: Furnace plants.....		150,612									150,612
Illinois:											
Merchant plants.....				30,903	54,343					1,020,856	1,106,102
Furnace plants.....			158,673	505,103	249,980					141,971	1,055,727
Total.....			158,673	536,006	304,323					1,162,827	2,161,829
Indiana:											
Merchant plants.....										587,185	587,185
Furnace plants.....				710,366						786,084	1,496,450
Total.....				710,366						1,373,269	2,083,635
Maryland: Furnace plants.....					210,963					471,204	682,167
Massachusetts: Merchant plants.....					18,914			17,572		1,365,054	1,401,540
Michigan:											
Merchant plants.....				394,693	751,321					839,379	1,985,393
Furnace plants.....				(1)						(1)	(1)
Total.....				394,693	751,321					839,379	1,985,393
Minnesota:											
Merchant plants.....				82,075	146,720					196,523	425,318
Furnace plants.....				85,982	31,353					26,832	144,167
Total.....				168,057	178,073					223,355	569,485
New Jersey: Merchant plants.....					24,280			207,526		908,736	1,140,542

New York:												
Merchant plants.....				338,790	1,467,267			419,004		999,580	3,224,641	
Furnace plants.....					925,443					342,961	1,268,404	
Total.....				338,790	2,392,710			419,004		1,342,541	4,493,045	
Ohio:												
Merchant plants.....				(1)						393,462	393,462	
Furnace plants.....				39,151	1,620,009					1,226,515	2,885,675	
Total.....				39,151	1,620,009					1,619,977	3,279,137	
Pennsylvania:												
Merchant plants.....					143,393					635,257	778,650	
Furnace plants.....					4,866,499					535,468	5,401,967	
Total.....					5,009,892					1,170,725	6,180,617	
Tennessee: Merchant plants.....							82,890			18,195	101,085	
Utah: Furnace plants.....		918						189,550			190,468	
Washington: Merchant plants.....									57,672		57,672	
West Virginia:												
Merchant plants.....										303,821	303,821	
Furnace plants.....					1,002,778					11,278	1,014,056	
Total.....					1,002,778					315,099	1,317,877	
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin: Merchant plants.....				350,119	30,461					1,424,922	1,805,502	
Undistributed:												
Merchant plants.....					910,995					284,438	1,195,433	
Furnace plants.....												
Total.....					910,995					284,438	1,195,433	
Grand total.....	2,098,570	151,530	158,673	3,448,177	11,543,724	82,890	189,550	644,102	57,672	12,519,721	30,894,609	
Merchant plants.....	489,494			1,278,451	2,636,699	82,890		644,102	57,672	8,699,720	13,889,028	
Furnace plants.....	1,609,076	151,530	158,673	2,169,726	8,907,025		189,550			3,820,001	17,005,581	

¹ Included under "Undistributed."

² Excludes items included under "Undistributed."

YIELD OF COKE PER TON OF COAL

TABLE 24.—Percentage yield of coke from coal in byproduct and beehive ovens, by States, 1929-32

State	1929		1930		1931		1932	
	Byproduct	Beehive	Byproduct	Beehive	Byproduct	Beehive	Byproduct	Beehive
Alabama.....	70.9	-----	70.93	-----	70.55	-----	69.14	-----
Colorado.....	68.0	65.7	68.59	64.98	68.65	(1)	68.19	65.20
Illinois.....	70.3	-----	69.52	-----	68.02	-----	66.05	-----
Indiana.....	73.8	-----	72.24	-----	70.89	-----	69.28	-----
Maryland.....	72.8	-----	71.77	-----	73.78	-----	73.22	-----
Massachusetts.....	69.0	-----	69.90	-----	71.75	-----	70.17	-----
Michigan.....	71.3	-----	70.55	-----	70.55	-----	70.03	-----
Minnesota.....	70.2	-----	68.38	-----	67.54	-----	67.73	-----
New Jersey.....	71.9	-----	71.95	-----	70.80	-----	69.21	-----
New York.....	69.5	-----	69.16	-----	69.67	-----	69.56	-----
Ohio.....	69.2	(2)	67.71	-----	67.95	-----	68.26	-----
Pennsylvania.....	66.9	‡ 65.5	66.73	66.63	66.88	65.31	66.03	65.11
Tennessee.....	70.4	56.6	72.94	53.66	72.38	50.33	71.75	49.08
Utah.....	54.2	60.2	54.39	58.66	54.33	(1)	54.53	42.08
Virginia.....	-----	59.7	-----	60.86	-----	60.32	-----	58.80
Washington.....	62.1	74.1	60.53	76.92	54.01	60.82	56.54	61.03
West Virginia.....	69.6	59.3	69.73	59.56	69.44	59.56	67.35	58.13
United States average.....	69.6	64.5	68.98	64.80	69.07	63.86	68.43	63.31

¹ Not at liberty to publish data.² Ohio included with Pennsylvania.

COKE BREEZE

TABLE 25.—Coke breeze recovered at coke plants, by States, in 1932

State	Yield per ton of coal (per cent)	Produced		Used by producer				Sold		On hand Dec. 31 (net tons)	Wasted (net tons)
				For steam raising		For other purposes, including water gas					
		Net tons	Value	Net tons	Value	Net tons	Value	Net tons	Value		
Byproduct ovens:											
Alabama.....	3.76	76,237	\$82,076	82,137	\$86,617	2,050	\$3,032	28,350	\$23,490	16,706	11,013
Colorado.....	4.84	6,562	(¹)	6,562	(¹)						
Illinois.....	8.08	174,749	441,061	162,109	423,626	33,380	78,397	40,886	97,111	59,083	
Indiana.....	7.03	145,624	366,182	108,924	253,044	14,988	42,213	16,747	57,596	10,351	
Maryland.....	6.44	43,918	(¹)	17,232	(¹)	7,378	(¹)	26,687	(¹)	13,617	
Massachusetts.....	7.90	111,199	252,216	4,086	15,198	5,346	16,038	128,602	278,750	1,119	
Michigan.....	7.16	221,249	674,067	127,381	393,874	74	185	10,693	23,497	130,812	502
Minnesota.....	8.22	46,815	114,916	40,754	100,175	63	63	7,768	22,964	20,220	
New Jersey.....	5.88	68,407	(¹)	44,185	(¹)			24,647	(¹)	820	
New York.....	5.47	246,289	631,045	162,710	416,225	53,184	160,127	37,774	79,229	41,273	
Ohio.....	7.09	243,710	481,104	162,806	299,686	24,061	41,736	81,843	202,283	71,737	2,164
Pennsylvania.....	8.16	499,053	904,407	297,951	491,292	49,244	102,465	142,025	335,159	24,258	
Tennessee.....	2.84	2,872	3,791	4,462	5,890					3,879	
Utah.....	9.93	18,913	(¹)	19,858	(¹)	5,315	(¹)	16,196	(¹)	29,813	
Washington.....	8.45	4,872	34,104	4,872	34,104						
West Virginia.....	4.86	65,130	60,091	62,229	59,058	3,482	2,611			4,370	
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin.....	7.81	143,255	379,791	99,867	257,019	26,766	143,607	46,308	118,279	15,445	
Undistributed.....			286,489		155,542		15,389		159,269		
Total.....	6.86	2,118,864	4,711,340	1,408,125	2,991,350	225,331	605,863	608,526	1,397,627	443,503	13,679
At merchant plants.....	6.88	960,397	2,478,138	581,908	1,537,233	116,707	394,326	300,121	662,699	229,211	2,164
At furnace plants.....	6.84	1,158,467	2,233,202	826,217	1,454,117	108,624	211,537	308,405	734,928	214,292	11,515
Beehive ovens:											
Colorado.....	² 1.54	555	(¹)					555	(¹)		
Pennsylvania.....	² 8.75	44,385	79,127	1,289	1,289	3,000	4,500	21,119	33,593	6,444	12,698
Tennessee.....	² 2.50	394	713							394	
Utah.....	² 6.24	817	(¹)					817	(¹)		
Virginia.....	² 1.32	829	2,152			239	570	540	1,491	20	
West Virginia.....	² 1.42	679	1,567					649	1,513	24	30
Undistributed.....			2,797						2,797		
Total.....	² 6.98	47,659	86,356	1,289	1,289	3,239	5,070	23,680	39,394	6,882	³ 12,728

¹ Included under "Undistributed."

² Yield computed by dividing the production of the breeze at the few plants reporting by the quantity of coal charged at these plants.

³ As reported; quantity produced but not used was undoubtedly greater. See Mineral Resources, 1922, pt. II, pp. 726-727.

CONSUMPTION OF COKE

TABLE 26.—Quantity of coke consumed in manufacture of pig iron and for other purposes, 1913, 1918, and 1930-32, in net tons

Year	Total production of coke	Imports	Exports	Net changes in stocks	Indicated United States consumption ¹	Consumed by iron furnaces ²		Remainder consumed in other ways	
						Quantity	Per cent	Quantity	Per cent
1913-----	46,299,530	101,212	987,395	(³)	45,413,347	37,192,287	81.9	8,221,060	18.1
1918-----	56,478,372	30,168	1,687,824	(³)	54,820,716	45,703,594	83.4	9,117,122	16.6
1930-----	47,972,021	132,674	1,003,866	+1,036,959	46,063,870	32,130,070	69.8	13,933,800	30.2
1931-----	33,483,886	103,563	754,302	+1,127,825	31,705,322	18,352,522	57.9	13,352,800	42.1
1932-----	21,788,730	117,275	630,151	-900,854	22,176,708	8,627,488	38.9	13,549,220	61.1

¹ Production plus imports minus exports, plus or minus the decrease or increase, respectively, of the net changes in stocks.

² From Annual Report of American Iron and Steel Institute. Figures include coke consumed in the manufacture of ferro-alloys.

³ Data not available.

TABLE 27.—Pounds of coke and of coking coal consumed per gross ton of pig iron made in the United States, 1913, 1918, and 1930-32

Year	Pounds of coke per gross ton of pig iron and ferro-alloys ¹	Percent yield of coke from coal	Calculated pounds coking coal per gross ton of pig iron and ferro-alloys	Year	Pounds of coke per gross ton of pig iron and ferro-alloys ¹	Percent yield of coke from coal	Calculated pounds coking coal per gross ton of pig iron and ferro-alloys
1913-----	2,433.3	66.9	3,637.2	1931-----	2,015.1	68.9	2,923.2
1918-----	2,375.2	66.4	3,577.1	1932-----	1,988.1	68.3	2,910.8
1930-----	2,046.8	68.7	2,978.5				

¹ From Annual Statistical Report of American Iron and Steel Institute, 1932, p. 17. Beginning in 1926 the Institute began to show the consumption per ton of pig iron only, excluding the furnaces making ferro-alloys. The results were 2,060.9 pounds in 1926; 2,094.1 in 1927; 2,059.3 in 1928; 2,030.9 in 1929; 2,015.3 in 1930; 1,981.0 in 1931; and 1,954.1 in 1932.

FURNACE, FOUNDRY, AND OTHER COKE

TABLE 28.—Byproduct coke produced and sold or used by producer, by States, in 1932
[Exclusive of screenings or breeze]

State	Produced		Used by producer in blast furnace, etc. ¹		Sold			
					Furnace ²		Foundry	
	Net tons	Value	Net tons	Value	Net tons	Value	Net tons	Value
Alabama.....	1,400,597	\$3,770,988	942,690	\$2,761,051	9,995	\$18,426	152,134	\$481,615
Colorado.....	92,384	(³)	76,062	(³)	2,499	(³)	11,350	(³)
Illinois.....	1,428,334	6,830,743	513,257	2,552,762	(³)	(³)	(³)	(³)
Indiana.....	1,435,405	7,894,902	1,042,814	6,122,164	1,855	11,649	54,826	340,341
Maryland.....	499,502	(³)	382,220	(³)	(³)	(³)	(³)	(³)
Massachusetts.....	987,106	6,493,682	109,539	631,572	(³)	(³)	19,246	126,048
Michigan.....	2,165,109	10,144,218	251,095	1,376,335	(³)	(³)	15,491	140,312
Minnesota.....	385,699	2,782,262	23,813	63,568	(³)	(³)	(³)	(³)
New Jersey.....	805,720	(³)	76,411	(³)	(³)	(³)	18,205	(³)
New York.....	3,130,078	19,246,204	951,669	6,174,215	345,697	1,749,716	(³)	(³)
Ohio.....	2,346,686	10,310,300	1,472,537	7,054,167	86,729	288,769	67,114	368,928
Pennsylvania.....	4,037,810	16,021,240	2,958,126	10,524,731	173,681	669,416	341,936	2,065,674
Tennessee.....	72,529	239,346	2,487	6,659	(³)	(³)	8,187	27,853
Utah.....	103,862	(³)	73,154	(³)	27,969	(³)	(³)	(³)
Washington.....	32,610	228,270	17,211	120,477	(³)	(³)	466	3,262
West Virginia.....	902,872	1,997,441	582,058	1,344,567	(³)	(³)	(³)	(³)
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin.....	1,310,539	7,899,785	124,083	636,832	35,350	169,261	121,772	787,792
Undistributed.....		8,675,945		3,068,530	139,924	826,612	97,791	788,929
Total.....	21,136,842	102,535,326	9,599,226	42,437,630	823,699	3,733,849	908,518	5,130,754
At merchant plants.....	9,762,471	55,002,249	1,410,381	8,619,406	209,284	973,545	749,941	4,317,919
At furnace plants.....	11,374,371	47,533,077	8,188,845	33,818,224	614,415	2,760,304	158,577	812,835

State	Sold—Continued					
	Domestic use		Industrial and other use (including water gas) ⁴		Total	
	Net tons	Value	Net tons	Value	Net tons	Value
Alabama.....	319,547	\$691,406	18,752	\$44,882	500,428	\$1,236,329
Colorado.....	(³)	109	(³)	(³)	13,958	(³)
Illinois.....	1,004,512	4,693,382	47,117	225,269	1,135,857	5,396,884
Indiana.....	346,854	1,473,511	28,305	125,197	431,840	1,950,698
Maryland.....	326	(³)	118,022	(³)	118,348	(³)
Massachusetts.....	856,482	5,729,964	28,748	190,184	904,476	6,046,196
Michigan.....	1,861,835	8,513,501	(³)	(³)	2,046,095	9,392,483
Minnesota.....	443,909	3,169,866	(³)	(³)	446,546	3,190,085
New Jersey.....	592,361	(³)	205,165	(³)	815,731	(³)
New York.....	1,620,271	9,967,857	(³)	(³)	2,198,336	13,179,110
Ohio.....	616,039	2,231,882	177,648	655,653	947,530	3,545,232
Pennsylvania.....	475,814	2,251,306	49,966	202,350	1,041,397	5,188,746
Tennessee.....	42,655	141,213	(³)	(³)	50,842	169,066
Utah.....			1,784	(³)	29,753	(³)
Washington.....	15,075	105,525	(³)	(³)	15,541	108,787
West Virginia.....	262,389	442,687	(³)	(³)	305,232	606,469
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin.....	964,165	5,807,499	126,987	764,968	1,248,274	7,529,520
Undistributed.....		3,832,594	293,130	3,553,174		6,138,868
Total.....	9,422,343	49,052,193	1,095,624	5,761,677	12,250,184	63,678,473
At merchant plants.....	7,110,057	39,289,363	834,955	4,646,751	8,904,237	49,227,578
At furnace plants.....	2,312,286	9,762,830	260,669	1,114,926	3,345,947	14,450,895

¹ Totals include 1,656,809 tons, valued at \$9,787,584, used for other purposes than in blast furnaces.

² Totals include 483,343 tons, valued at \$2,318,741, sold to affiliated corporations, and 335,356 tons, valued at \$1,415,108, reported as merchant sales.

³ Included under "Undistributed."

⁴ Totals include 482,546 tons, valued at \$2,897,915, sold for manufacture of water gas.

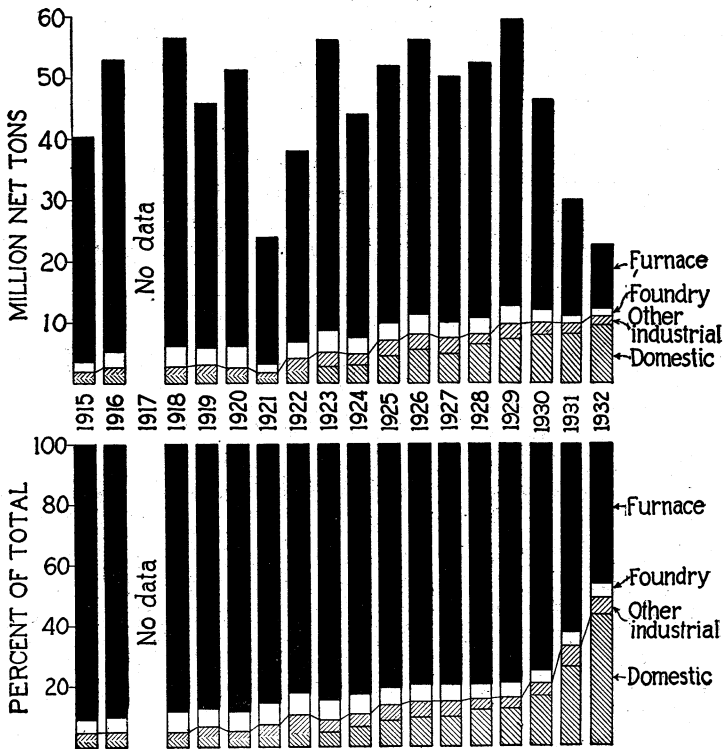


FIGURE 1.—Byproduct and beehive coke sold for furnace, foundry, other industrial, and domestic use. Figures for furnace coke include all coke used by producer and not sold. The data represent the disposition made of the total production, including the exports, except that in 1915 and 1916 the exports are not included.

TABLE 29.—Beehive coke produced and sold or used by producer, by States, in 1932
[Exclusive of screenings or breeze]

State	Produced		Used by producer ¹		Sold			
					Furnace ²		Foundry	
	Net tons	Value	Net tons	Value	Net tons	Value	Net tons	Value
Colorado and Utah.....	29,071	\$197,978	4	\$16			5,507	\$32,464
Pennsylvania.....	506,377	1,238,846			89,502	\$237,370	93,028	276,245
Tennessee.....	10,954	24,925			7,882	12,000	2,976	11,650
Virginia and West Virginia.....	104,750	335,861	17	60	4,166	12,832	44,742	157,495
Washington.....	736	3,680						
Total.....	651,888	1,801,290	21	76	101,550	262,202	146,253	477,854

¹ No beehive coke was used by the producer in blast furnaces in 1932.
² Totals include 1,644 tons, valued at \$5,342, sold to affiliated corporations, and 99,906 tons, valued at \$256,860, reported as merchant sales.

TABLE 29.—*Beehive coke produced and sold or used by producer, by States in 1932—Continued*

State	Sold—Continued					
	Domestic use		Industrial and other use (including water gas) ³		Total	
	Net tons	Value	Net tons	Value	Net tons	Value
Colorado and Utah.....			23, 560	\$165, 498	29, 067	\$197, 962
Pennsylvania.....	200, 668	\$436, 225	126, 811	294, 808	510, 009	1, 244, 648
Tennessee.....	10	30			10, 868	23, 680
Virginia and West Virginia.....	7, 179	18, 001	48, 559	147, 289	104, 646	335, 617
Washington.....			736	3, 680	736	3, 680
Total.....	207, 857	454, 256	199, 666	611, 275	655, 326	1, 805, 587

³ Totals include 84,641 tons, valued at \$189,397, sold for manufacture of water gas.

DOMESTIC COKE

TABLE 30.—*Total supplies of fuels commonly used for domestic purposes in the United States, 1924 and 1929-32*

[Wherever available the figures represent the quantity actually consumed for domestic heating or for heating offices, apartments, hotels, schools, hospitals, etc. Where such figures are not available but where the fuel is known to be used chiefly for domestic purposes the total production (or imports) is shown in order to indicate the trend of growth]

	1924	1929	1930	1931	1932
<i>Solid fuels (net tons)</i>					
Pennsylvania anthracite production:					
Shipments of domestic sizes.....	56, 576, 296	46, 141, 575	42, 508, 088	35, 437, 946	29, 096, 962
Shipments of buckwheat no. 1 ¹	9, 510, 508	8, 597, 053	8, 570, 032	7, 956, 978	6, 735, 313
Shipments of smaller steam sizes.....	11, 160, 695	10, 555, 951	10, 123, 937	9, 240, 931	8, 029, 388
Local sales.....	3, 043, 939	3, 233, 023	3, 144, 434	2, 901, 117	2, 810, 337
Total commercial production.....	80, 291, 438	68, 527, 602	64, 346, 491	55, 536, 972	46, 672, 000
Anthracite exported.....	4, 017, 785	3, 406, 369	2, 551, 659	1, 778, 308	1, 303, 355
Anthracite imported, chiefly from United Kingdom and Russia.....	117, 951	487, 172	674, 812	637, 951	607, 097
Fuel briquets produced.....	580, 470	1, 212, 415	1, 028, 865	698, 316	470, 604
Fuel briquets imported.....	38	89, 458	73, 418	60, 950	80, 288
Byproduct coke sold for domestic use.....	2, 812, 771	7, 376, 320	7, 886, 432	8, 376, 652	9, 422, 343
Beehive coke sold for domestic use.....	139, 886	134, 703	141, 391	118, 665	207, 857
Coke imported.....	82, 833	119, 724	132, 674	103, 563	117, 275
Gas-house coke sold.....	² 1, 400, 000	1, 400, 000	² 1, 300, 000	1, 273, 000	² 1, 250, 000
Petroleum coke produced ³	761, 100	1, 820, 600	1, 940, 000	2, 032, 000	1, 789, 000
Anthracite and semianthracite produced outside of Pennsylvania.....	704, 513	842, 313	708, 221	507, 140	454, 000
Bituminous coal for domestic use.....	(⁴)	(⁴)	(⁴)	(⁴)	(⁴)
<i>Oil (barrels) ⁵</i>					
Oil used for heating houses.....	⁶ 5, 021, 000	19, 581, 000	25, 771, 000	24, 659, 000	(⁶)
Oil used for heating offices, hotels, apartments, schools, hospitals, and buildings other than houses.....	(⁶)	17, 820, 000	17, 508, 000	15, 731, 000	(⁶)
<i>Gas (million cubic feet)</i>					
Natural gas consumed for domestic use ⁷	285, 152	359, 853	376, 407	380, 897	385, 887
Manufactured gas sold for domestic purposes.....	(⁸)	⁸ 285, 552	(⁸)	⁸ 260, 520	(⁸)

¹ A considerable part of the buckwheat no. 1 is used for domestic purposes.

² Partly estimated.

³ How much petroleum coke was used for house fuel before 1928 is not known. For that year 235,000 tons were reported to have been consumed for domestic heating, according to E. B. Swanson in Economic Paper 9, Bureau of Mines.

⁴ Between 56,000,000 and 77,000,000 tons a year.

⁵ Based on surveys by E. B. Swanson, Bureau of Mines.

⁶ Data not available.

⁷ Includes heating of apartments and commercial buildings.

⁸ From Census of Manufactures.

COKE USED IN MANUFACTURING

The consumption of coke by manufacturing industries and by counties in 1929 is shown in figure 2. The map is based upon a

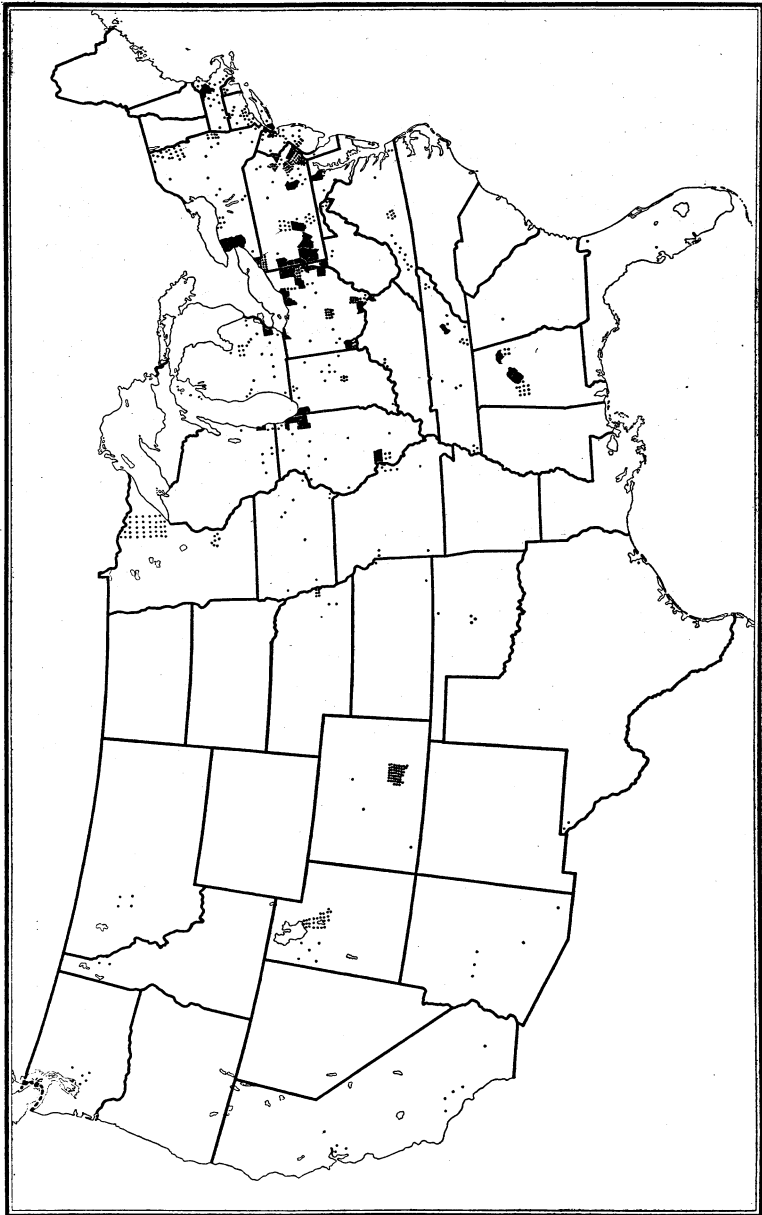


FIGURE 2.—Coke consumed in each county in manufacturing industries in 1929. Each dot represents 10,000 tons.

special analysis of the U.S. Bureau of the Census entitled "Consumption of Fuel and Electric Energy in Manufacturing Industries."

STOCKS OF COKE

TABLE 31.—Stocks of furnace, foundry, and domestic coke and of breeze on Jan. 1, 1933, by States, in net tons

[Based on complete reports from all producers]

State	Furnace	Foundry	Domestic and other	Total coke	Breeze
Byproduct plants:					
Alabama.....	463, 973	99, 248	42, 178	605, 399	16, 706
Colorado.....	6, 504	214	1, 286	8, 004	-----
Illinois.....	¹ 163, 060	(¹)	150, 296	313, 356	59, 083
Indiana.....	52, 057	155	98, 680	150, 892	10, 351
Maryland.....	3, 110	-----	-----	3, 110	13, 617
Massachusetts.....	-----	213	220, 877	221, 090	1, 119
Michigan.....	4, 387	4, 058	94, 431	102, 876	130, 812
Minnesota.....	23, 580	-----	120, 453	144, 033	20, 220
New Jersey.....	-----	-----	135, 045	135, 045	820
New York.....	¹ 45, 083	(¹)	285, 653	330, 736	41, 273
Ohio.....	165, 594	226	153, 511	319, 331	71, 737
Pennsylvania.....	313, 411	1, 423	306, 365	621, 199	24, 258
Tennessee.....	57, 377	32	10, 066	67, 475	3, 879
Utah.....	6, 931	-----	10, 954	17, 885	29, 813
Washington.....	-----	-----	6, 957	6, 957	-----
West Virginia.....	101, 668	-----	78, 174	179, 842	4, 370
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin.....	-----	578	270, 454	271, 032	15, 445
Total.....	¹ 1, 406, 735	¹ 106, 147	1, 985, 380	3, 498, 262	443, 503
At merchant plants.....	116, 598	88, 436	1, 667, 154	1, 872, 188	229, 211
At furnace plants.....	1, 244, 062	63, 786	318, 226	1, 626, 074	214, 292
Beehive plants:					
Colorado.....	-----	76	-----	76	-----
Pennsylvania.....	2, 748	3, 156	5, 773	11, 677	6, 444
Tennessee.....	8, 000	875	-----	8, 875	394
Utah.....	-----	678	-----	678	-----
Virginia.....	931	779	50	1, 760	20
West Virginia.....	388	1, 574	1, 565	3, 527	24
Total.....	12, 067	7, 138	7, 388	26, 593	6, 882

¹ A small amount of foundry coke is included with furnace.

TABLE 32.—Summary of total stocks of coke on hand at all byproduct and beehive plants at first of year, 1923-33

	Jan. 1, 1928	Jan. 1, 1929	Jan. 1, 1930	Jan. 1, 1931	Jan. 1, 1932	Jan. 1, 1933
Byproduct plants:						
Furnace.....	627, 869	750, 318	931, 654	1, 106, 996	¹ 1, 376, 902	1, 360, 660
Foundry.....	29, 371	24, 426	26, 943	230, 766	¹ 268, 149	152, 222
Domestic and other.....	1, 156, 991	1, 018, 205	1, 256, 612	1, 916, 526	2, 734, 219	1, 985, 380
Total.....	1, 814, 231	1, 792, 949	2, 215, 209	3, 254, 288	4, 379, 270	3, 498, 262
Beehive plants:						
Furnace.....	54, 441	38, 446	30, 131	31, 691	25, 239	12, 067
Foundry.....	13, 615	8, 020	7, 929	6, 061	8, 513	7, 138
Domestic and other.....	4, 147	8, 511	7, 656	5, 844	12, 687	7, 388
Total.....	72, 203	54, 977	45, 716	43, 596	46, 439	26, 593
Total:						
Furnace.....	682, 310	788, 764	961, 785	1, 138, 687	¹ 1, 402, 141	1, 372, 727
Foundry.....	42, 986	32, 446	34, 872	236, 827	¹ 276, 662	159, 360
Domestic and other.....	1, 161, 138	1, 026, 716	1, 264, 268	1, 922, 370	2, 746, 906	1, 992, 768
Total.....	1, 886, 434	1, 847, 926	2, 260, 925	3, 297, 884	4, 425, 709	3, 524, 855

¹ Revised figures.

276 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

TABLE 33.—Total stocks of coke on hand at all furnace and nonfurnace byproduct plants on first of each month, 1931 and 1932

[Includes furnace, foundry, and domestic, but not breeze]

Date	Furnace plants		Other plants		Total	
	1931	1932	1931	1932	1931	1932
Jan. 1.....	1,454,950	1,923,784	1,799,338	2,455,486	3,254,288	4,379,270
Feb. 1.....	1,512,204	1,886,119	1,430,512	2,292,775	2,942,716	4,178,894
Mar. 1.....	1,476,402	1,864,765	1,336,845	1,974,310	2,813,247	3,839,075
Apr. 1.....	1,495,882	1,826,056	1,328,870	1,647,094	2,824,752	3,473,150
May 1.....	1,538,965	1,858,651	1,463,725	1,707,524	3,002,690	3,566,175
June 1.....	1,580,184	1,905,998	1,481,967	1,709,316	3,062,151	3,615,314
July 1.....	1,611,968	1,990,983	1,643,992	1,750,996	3,255,960	3,741,979
Aug. 1.....	1,649,724	1,975,517	1,895,044	1,999,117	3,545,668	3,974,634
Sept. 1.....	1,687,863	2,032,752	2,102,994	2,187,881	3,790,857	4,220,633
Oct. 1.....	1,747,830	1,964,326	2,306,591	2,258,739	4,054,421	4,223,065
Nov. 1.....	1,757,445	1,892,951	2,456,850	2,135,280	4,214,295	4,028,240
Dec. 1.....	1,814,413	1,784,479	2,475,836	2,072,743	4,290,249	3,857,222

VALUE AND PRICE

TABLE 34.—Average receipts per net ton for coke sold, by States, in 1932

State	Byproduct				Beehive			
	Fur-nace ¹	Foun-dry	Do-mestic	Other industrial, including water gas	Fur-nace ¹	Foun-dry	Do-mestic	Other industrial, including water gas
Alabama.....	\$1.84	\$3.17	\$2.16	\$2.39				
Colorado and Utah.....	6.70	3.32	3.32	7.02		\$5.90		\$7.02
Illinois.....	4.61	6.76	4.67	4.78				
Indiana.....	6.28	6.21	4.25	4.42				
Maryland and New Jersey.....		6.41	6.47	5.99				
Massachusetts.....		6.55	6.69	6.62				
Michigan.....	(²)	9.06	4.57	(²)				
Minnesota.....		(²)	7.14	(²)				
New York.....	5.06	(²)	6.15	6.15				
Ohio.....	3.33	5.50	3.62	3.69				
Pennsylvania.....	3.85	6.04	4.73	4.05	\$2.65	2.97	\$2.17	2.32
Tennessee.....		3.40	3.31		1.52	3.91	3.00	
Virginia.....					3.00	3.52	3.00	
Washington.....		7.00	7.00					5.00
West Virginia.....		(²)	1.69	(²)	3.09	3.52	2.51	2.67
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin.....	4.79	6.47	6.02	6.02				
Undistributed.....	4.38	6.29		4.13				
Total.....	4.53	5.65	5.21	5.26	2.58	3.27	2.19	3.06
At merchant plants.....	4.65	5.76	5.53	5.57	(³)	(³)	(³)	(³)
At furnace plants.....	4.49	5.13	4.22	4.28	(³)	(³)	(³)	(³)

¹ Includes coke sold to affiliated corporations and merchant sales.

² Included under "Undistributed."

³ Not available.

TABLE 35.—Average monthly prices per net ton at ovens of spot or prompt Connellsville furnace and foundry coke, 1928-32¹

Month	Furnace coke					Foundry coke				
	1928	1929	1930	1931	1932	1928	1929	1930	1931	1932
January.....	\$2.70	\$2.75	\$2.55	\$2.50	\$2.25	\$3.75	\$3.75	\$3.50	\$3.50	\$3.50
February.....	2.68	2.90	2.60	2.50	2.25	3.75	3.75	3.50	3.50	3.50
March.....	2.60	2.98	2.60	2.50	2.25	3.75	3.75	3.50	3.50	3.50
April.....	2.60	2.78	2.60	2.50	2.25	3.75	3.75	3.50	3.50	3.50
May.....	2.60	2.75	2.53	2.45	2.20	3.75	3.75	3.50	3.50	3.50
June.....	2.60	2.75	2.50	2.40	2.00	3.75	3.75	3.50	3.50	3.50
July.....	2.63	2.75	2.50	2.40	2.00	3.75	3.75	3.50	3.50	3.50
August.....	2.75	2.73	2.58	2.40	2.00	3.75	3.75	3.50	3.50	3.50
September.....	2.75	2.65	2.60	2.40	2.00	3.75	3.75	3.50	3.50	3.50
October.....	2.83	2.65	2.60	2.40	1.81	3.75	3.75	3.50	3.50	3.50
November.....	2.75	2.65	2.53	2.40	1.75	3.75	3.75	3.50	3.50	3.50
December.....	2.75	2.64	2.50	2.34	1.75	3.75	3.75	3.50	3.25	2.69
Average.....	2.69	2.75	2.56	2.43	2.04	3.75	3.75	3.50	3.48	3.08

¹ Iron Age, Jan. 5, 1933.

TABLE 36.—Average monthly prices of byproduct foundry coke, in 10 markets, as quoted by Steel

	January	February	March	April	May	June	July	August	September	October	November	December	Average for year
Ashland, Ky. (at ovens): ¹													
1930.....	\$6.50	\$6.50	\$6.50	\$6.50	\$6.50	\$6.50	\$6.30	\$5.50	\$5.50	\$5.50	\$5.50	\$5.50	\$6.06
1931.....	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
1932.....	5.50	5.50	5.50	5.50	5.50	5.00	4.50	4.50	4.50	4.50	4.50	4.50	4.96
Birmingham, Ala. (at ovens):													
1930.....	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
1931.....	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	4.75	5.00
1932.....	4.50	4.50	4.50	4.50	4.50	4.50	4.25	4.50	4.50	4.50	4.15	4.00	4.41
Buffalo, N.Y. (at ovens):													
1930.....	8.75	8.75	8.75	8.75	8.75	8.75	8.75	8.00	8.00	8.00	8.00	8.00	8.44
1931.....	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
1932.....	8.00	8.00	7.60	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.59
Chicago, Ill. (at ovens):													
1930.....	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
1931.....	8.00	8.00	8.00	8.00	8.00	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.67
1932.....	7.50	7.50	7.50	7.50	7.30	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.19
Detroit, Mich. (at ovens):													
1930.....	9.00	9.00	9.00	8.90	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.66
1931.....	8.50	8.50	8.50	8.50	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
1932.....	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
Indianapolis, Ind. (delivered at consumers' works):													
1930.....	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.25
1931.....	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.25
1932.....	8.30	8.30	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.15	7.75	7.75	8.17
Newark, N.J. (delivered at consumers' works):													
1930.....	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
1931.....	9.00	9.00	9.00	9.00	9.00	8.70	8.70	8.70	8.70	8.70	8.70	8.70	8.83
1932.....	8.76	8.76	8.76	8.76	8.23	8.21	8.21	8.21	8.21	8.21	8.21	8.21	8.40
New England (delivered at consumers' works):													
1930.....	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00
1931.....	11.00	11.00	11.00	11.00	11.00	10.50	10.50	10.50	10.50	10.50	10.50	10.50	10.71
1932.....	10.50	10.50	10.50	10.50	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.17
Portsmouth, Ohio (at ovens): ¹													
1930.....	6.50	6.50	6.50	6.50	6.50	6.50	6.30	5.50	5.50	5.50	5.50	5.50	6.06
1931.....	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
1932.....	5.50	5.50	5.50	5.50	5.50	5.00	4.50	4.50	4.50	4.50	4.50	4.50	4.96
St. Louis, Mo. (at ovens):													
1930.....	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
1931.....	9.00	9.00	9.00	9.00	9.00	8.60	8.50	8.50	8.50	8.50	8.50	8.50	8.72
1932.....	8.50	8.50	8.50	8.50	8.50	7.95	7.75	7.75	7.75	7.75	7.75	7.75	8.08

¹ Prices at ovens, Ashland and Portsmouth, quoted on Connellsville ovens basis.

SHIPMENTS BY RAIL AND WATER

TABLE 37.—*Beehive coke loaded for shipment on originating railroads in the United States in 1932, by routes, as reported by coke producers*¹

Route	State	Quantity (net tons)		Percent of total
		By States	Total	
Railroads:				
Baltimore & Ohio.....	{ Pennsylvania.....	25,566	} 43,688	6.5
	{ West Virginia.....	18,122		
Buffalo, Rochester & Pittsburgh.....	Pennsylvania.....	25,345	25,345	3.8
Chesapeake & Ohio.....	West Virginia.....	23,093	23,093	4.2
Denver & Rio Grande Western.....	{ Colorado.....	24,115	} 29,626	4.4
	{ Utah.....	5,511		
Interstate.....	Virginia.....	41,317	41,317	6.1
Ligonier Valley.....	Pennsylvania.....	99,338	99,338	14.8
Louisville & Nashville.....	Virginia.....	410	410	(²)
Monongahela.....	Pennsylvania.....	203,963	203,963	30.3
Nashville, Chattanooga & St. Louis.....	Tennessee.....	2,976	2,976	.5
Norfolk & Western.....	{ Virginia.....	15,070	} 16,867	2.5
	{ West Virginia.....	1,797		
Northern Pacific.....	Washington.....	736	736	.1
Pennsylvania.....	Pennsylvania.....	162,576	162,576	24.2
Pittsburgh & Lake Erie.....	do.....	9,310	9,310	1.4
Southern.....	Tennessee.....	7,882	7,882	1.2
Total railroad shipments.....		672,127	672,127	100.0

¹ There were no shipments of beehive coke over waterways during 1932.² Less than 0.1 percent.EXPORTS AND IMPORTS¹TABLE 38.—*Coke exported from the United States, 1930-32, by customs districts*

District	1930		1931		1932	
	Net tons	Value	Net tons	Value	Net tons	Value
Arizona.....	1,089	\$7,352	128	\$989	---	---
Buffalo.....	456,230	2,930,901	218,193	1,373,823	134,823	\$681,190
Chicago.....	15,954	76,271	---	410	27,079	87,975
Dakota.....	11,989	81,121	10,622	66,033	4,404	25,019
Duluth-Superior.....	2,450	17,704	1,729	11,298	1,643	11,323
El Paso.....	9	145	2	23	4	77
Florida.....	12,155	121,452	3,513	34,168	1,015	9,866
Galveston.....	---	---	8,833	62,889	---	---
Los Angeles.....	7	112	---	---	---	---
Maine and New Hampshire.....	2,736	20,290	1,247	8,978	125	752
Maryland.....	741	2,889	1,135	8,508	---	---
Michigan.....	404,054	2,193,859	392,979	1,887,501	370,643	1,587,668
Mobile.....	12,333	148,122	5,881	55,065	2,240	31,000
New Orleans.....	11,250	62,625	15,455	84,472	9,530	42,623
New York.....	1,752	26,341	300	5,392	155	2,315
Ohio.....	53,981	243,188	78,103	370,339	76,216	294,061
Philadelphia.....	2,331	13,757	196	3,127	2	24
Puerto Rico.....	37	564	6	150	36	520
Rochester.....	50	506	---	---	---	---
Sabine.....	---	---	1,120	8,000	---	---
St. Lawrence.....	5,159	43,321	4,626	31,416	612	4,511
San Antonio.....	491	2,446	---	---	21	103
San Diego.....	34	354	233	2,547	363	3,169
San Francisco.....	35	616	28	482	9	152
Vermont.....	6,971	52,471	3,576	26,975	84	573
Virginia.....	1,145	10,198	2,615	22,253	1,147	8,028
Washington.....	933	10,713	357	3,952	---	---
Wisconsin.....	---	---	3,425	16,588	---	---
Total.....	1,003,866	6,067,318	754,302	4,084,968	630,151	2,790,949

¹ Figures on exports and imports, unless otherwise indicated, compiled by the Bureau of Mines from records of the Bureau of Foreign and Domestic Commerce.

TABLE 39.—Coke exported from the United States, 1930-32, by countries of destination

Destination	1930		1931		1932	
	Net tons	Value	Net tons	Value	Net tons	Value
North America:						
Bermudas.....			1	\$20	12	\$184
Canada.....	960,459	\$5,670,345	722,571	3,851,280	615,629	2,693,072
Central America:						
Costa Rica.....	16	266	20	341	7	116
Guatemala.....	56	871	37	558	36	381
Honduras.....	2,010	10,359	75	860	31	429
Nicaragua.....			54	890	23	395
Panama.....	324	7,002	218	4,958	329	3,983
Salvador.....	222	2,699	29	438	11	95
Mexico.....	1,903	12,915	576	5,014	424	3,645
Newfoundland and Labrador.....	26	466				
West Indies:						
British:						
Jamaica.....	6	109	4	72		
Trinidad and Tobago.....	7	77	361	3,123		
Other.....			8	88	9	48
Cuba.....	25,931	171,733	20,163	98,028	9,421	40,458
Dominican Republic.....	55	872	17	368	42	662
Haiti.....			4	75	9	123
Netherland.....	4	52			3	34
South America:						
Argentina.....	177	2,248				
Brazil.....			22	350		
Chile.....	1,052	5,284	11	104		
Colombia.....	19	325	27	499	74	1,055
Ecuador.....			27	267	25	361
Peru.....	62	1,021				
Venezuela.....	64	1,194	8	103	7	105
Europe:						
Belgium.....	573	9,616				
France.....	1,401	25,020	1,254	22,400	2,296	31,775
Germany.....	3,264	47,280	1,680	18,000		
Italy.....	4,716	76,610	3,718	39,098	1,763	14,023
Netherlands.....	560	5,000	2,296	29,500		
Norway.....			1,120	8,512		
United Kingdom.....	223	3,980				
Asia:						
British India.....	354	3,448				
Java and Madura.....	382	8,526				
Other.....			1	22		
Total.....	1,003,866	6,067,318	754,302	4,084,968	630,151	2,790,949

TABLE 40.—Coke imported into the United States, 1930-32, by customs districts

District	1930		1931		1932	
	Net tons	Value	Net tons	Value	Net tons	Value
Buffalo.....	25,097	\$472,504	13,745	\$242,477		
Duluth-Superior.....	6,085	9,509				
Hawaii.....	112	1,486	682	7,135	224	\$1,068
Los Angeles.....	31,522	156,657	24,449	114,790	14,391	43,461
Massachusetts.....			16,757	70,183	79,186	256,623
Maine and New Hampshire.....	531	4,320	2,642	17,141	672	3,086
Michigan.....	373	3,810	1,174	20,059		
Montana and Idaho.....	29,219	20,359	9,847	73,498		
New York.....	4	37	12,690	46,427	2,517	9,160
Oregon.....	4,530	20,571	2,234	10,996	1,255	3,133
Rochester.....	16	72				
St. Lawrence.....	9	59	35	237		
San Antonio.....	309	2,277	88	729		
San Francisco.....	23,250	110,856	15,538	68,983	16,304	46,017
Vermont.....	572	3,977	27	179		
Washington.....	11,045	57,196	3,655	18,184	2,726	7,340
Total.....	132,674	1,044,020	103,563	691,018	117,275	369,888

280 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

TABLE 41.—Coke imported into the United States, 1930-32, by countries of origin

Country	1930		1931		1932	
	Net tons	Value	Net tons	Value	Net tons	Value
Belgium.....	2,452	\$13,201	4,540	\$23,680	17,930	\$59,246
Canada.....	63,928	705,691	25,394	340,165		
Chile.....	1	22				
Germany.....	2,857	15,815	22,768	98,111	16,660	70,363
Japan.....			1	7		
Mexico.....	309	2,277	88	729		
Netherlands.....	9,499	57,460	6,316	33,217	8,386	27,677
United Kingdom.....	53,628	249,554	44,456	195,109	74,299	212,602
Total.....	132,674	1,044,020	103,563	691,018	117,275	369,888

WORLD PRODUCTION

TABLE 42.—Coke produced in principal countries, 1928-32, in metric tons¹

[Compiled by M. T. Latus, of the Bureau of Mines]

Country	1928	1929	1930	1931	1932
Australia:					
New South Wales.....	523,550	471,813	373,675	221,000	362,217
Queensland.....	4,123	4,144	3,499	2,317	1,963
Belgium.....	6,322,920	6,192,960	5,551,560	5,129,960	(²)
Bulgaria.....	898				566
Canada.....	1,675,421	1,986,532	1,716,091	1,256,010	1,073,024
China (exports).....	14,211	13,467	10,557	8,130	(²)
Chosen.....	(³)	(³)	(³)	154,918	(³)
Czechoslovakia.....	2,821,423	3,170,629	2,714,670	2,046,371	1,277,810
France.....	7,957,000	9,080,127	9,271,140	7,940,000	5,868,000
Germany ⁴	34,774,959	39,421,033	32,699,520	23,189,836	(²)
Saar.....	2,373,000	2,423,000	2,560,000	1,941,000	1,685,000
Great Britain ⁵	12,035,326	13,637,421	11,698,821	8,606,664	8,616,303
Hungary.....	1,072	2,092	(³)	2,184	(²)
India, British ⁶	757,501	843,504	821,020	(³)	(²)
Indo-China.....	2,500	637	6,000	1,000	2,150
Italy.....	636,399	791,607	813,325	740,266	714,141
Japan:					
Manufactured coke.....	1,237,754	(³)	(³)	792,174	(²)
Natural coke.....	165,883	(³)	(³)	180,751	(²)
Mexico.....	451,235	493,777	505,505	350,201	255,595
Netherlands.....	1,573,392	2,402,566	2,599,403	2,739,343	2,519,656
Peru.....	19,331	35,899	35,974	9,269	(²)
Poland.....	1,667,906	1,858,052	1,581,974	1,354,743	1,090,900
Rhodesia, Southern.....	139,719	100,001	77,043	39,866	25,514
Russia ⁷	5,103,741	(³)	(³)	(³)	(²)
Spain.....	680,555	768,040	675,546	503,115	369,352
Sweden.....	104,805	103,778	96,942	126,642	101,500
Union of South Africa.....	94,089	99,297	89,429	86,371	57,347
United States.....	47,904,391	54,325,427	43,519,258	30,375,912	19,766,300
Total.....	129,178,000	144,766,000	123,963,000	94,048,000	(²)

¹ Gas-house coke is not included.

² Data not available.

³ Estimate included in total.

⁴ Exclusive of the Saar, which is shown separately.

⁵ In Great Britain the production of gas-house coke (including breeze), not included above, is especially important and was as follows: 1928, 12,411,903 tons; 1929, 12,610,467 tons; 1930, 12,514,392 tons; 1931, 12,301,695 tons; 1932, 11,990,229 tons.

⁶ Figures represent only coke made at collieries.

⁷ Year ended Sept. 30.

COKE-OVEN BYPRODUCTS

SUMMARY OF BYPRODUCTS IN 1932

TABLE 43.—Byproducts obtained from coke-oven operations in the United States in 1932¹

[Exclusive of screenings or breeze]

Product	Production	Sales		
		Quantity	Value	
			Total	Average
Tar.....gallons..	303, 812, 046	222, 305, 219	\$8, 930, 643	\$0. 040
Ammonia:				
Sulphate.....pounds..	575, 239, 132	606, 622, 173	5, 366, 419	. 009
Ammonia liquor (NH ₃ content).....do.....	34, 244, 082	34, 465, 895	1, 072, 002	. 031
			6, 438, 421	
Sulphate equivalent of all forms.....do.....	712, 215, 460	744, 485, 753		
Gas:				
Used under boilers, etc.....M cubic feet..			9, 554, 285	. 057
Used in steel or affiliated plants.....do.....			64, 904, 429	. 112
Distributed through city mains.....do.....			146, 705, 570	. 309
Sold for industrial use.....do.....			9, 711, 992	. 187
		230, 876, 276	54, 876, 039	. 238
Light oil and derivatives:				
Crude light oil.....gallons..	³ 73, 763, 166	5, 652, 626	490, 323	. 087
Benzol, crude and refined.....do.....	10, 578, 615	10, 975, 394	1, 927, 268	. 176
Motor benzol.....do.....	32, 728, 774	32, 570, 749	3, 823, 110	. 117
Toluol, crude and refined.....do.....	8, 965, 256	8, 711, 928	2, 340, 872	. 269
Solvent naphtha.....do.....	2, 093, 331	1, 915, 743	347, 890	. 182
Xylol.....do.....	1, 574, 215	1, 477, 886	348, 870	. 236
Other light-oil products.....do.....	2, 949, 851	1, 843, 873	125, 804	. 068
	⁴ 58, 890, 042	63, 153, 199	9, 404, 137	. 149
Naphthalene, crude and refined.....pounds..	4, 632, 266	3, 714, 604	33, 323	. 009
Tar derivatives:				
Creosote oil, distillate as such.....gallons..	5, 484, 819	5, 845, 210	438, 063	. 075
Creosote oil in coal-tar solution.....do.....	1, 658, 756	1, 985, 128	127, 623	. 064
Pitch of tar.....net tons..	41, 618	1, 427	11, 501	8. 060
Other tar derivatives.....do.....			53, 678	
Phenol.....gallons..	100, 064	90, 988	18, 569	. 204
Other products ⁵.....do.....			76, 195	
Value of all byproducts sold.....do.....			⁶ 80, 408, 192	

¹ Includes products of tar distillation conducted by coke-oven operators under same corporate name, except, however, phenol and other tar acids produced at Clairton, Pa.

² Includes gas wasted and gas used for heating retorts.

³ Refined on the premises to make the derived products shown, 70,780,831 gallons.

⁴ Total gallons of derived products.

⁵ Carbolate, crude products, cyanogen, residue, sodium prussiate, sulphur, and vented vapors. In 1932 3 plants reported the recovery of 1,341,458 pounds of sulphur of which 1,553,478 pounds were sold at an average price of \$0.008 a pound.

⁶ Exclusive of the value of breeze production, which in 1932 amounted to \$4,711,340.

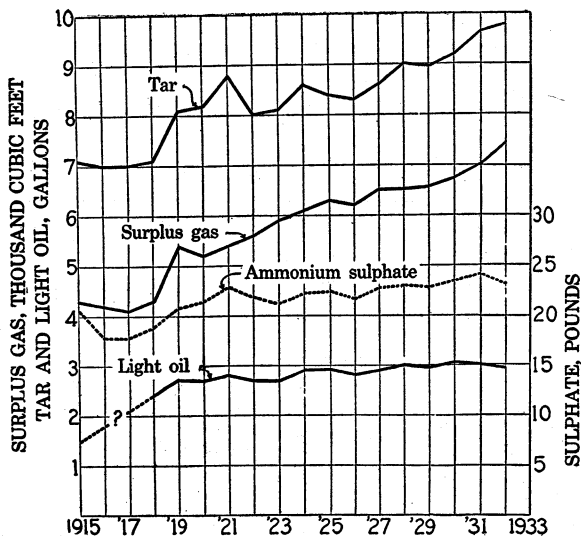


FIGURE 3.—Average yield of principal byproducts per net ton of coal carbonized in byproduct coke ovens, 1915-32. Figures for light oil represent average at plants recovering light oil.

TABLE 44.—Coal equivalent of byproducts of byproduct coking, 1913, 1914, 1918, and 1930-32

Year	Quantity of byproducts				Rough equivalent in heating value (billion B. t. u.)					Coal equivalent	
	1 Coke breeze (thou- sand net tons)	2 Sur- plus gas (bil- lion cubic feet)	3 Tar pro- duced (thou- sand gallons)	4 Light oil pro- duced (thou- sand gallons)	5 Coke breeze (1×20)	6 Surplus gas (2×550)	7 Tar (3× 0.150)	8 Light oil (4× 0.130)	9 Total (5+6+ 7+8)	10 Net tons (9÷0.0262)	11 Per cent this forms of coal made into coke
1913...	735	64	115, 145	3, 000	14, 700	35, 200	17, 272	390	67, 562	2, 600, 000	3.8
1914...	667	61	109, 901	8, 464	13, 340	33, 550	16, 485	1, 100	64, 475	2, 461, 000	4.8
1918...	1, 999	158	263, 299	87, 562	39, 980	86, 900	39, 495	11, 383	177, 758	6, 785, 000	8.0
1930...	4, 337	442	602, 486	178, 326	86, 740	243, 100	90, 373	23, 182	443, 395	16, 923, 000	24.2
1931...	3, 126	329	450, 856	122, 529	62, 520	180, 950	67, 628	15, 929	327, 027	12, 482, 000	125.7
1932...	2, 119	231	303, 812	73, 763	42, 380	127, 050	45, 572	9, 589	224, 591	8, 572, 000	26.9

¹ Revised figure.

TAR

TABLE 45.—Coke-oven tar produced and sold in the United States in 1932, by States¹

State	Total produced (gallons)	Sold		
		For use as fuel (gallons) ²	For refining into tar products (gallons)	Total sold (gallons)
Alabama.....	18,729,780	9,744,743	4,139,799	13,884,542
Colorado.....	1,436,369	1,689	—	1,689
Illinois.....	20,815,391	1,838,999	19,488,571	21,327,570
Indiana.....	15,950,046	656,778	10,693,038	11,349,816
Maryland.....	5,400,192	—	5,250,810	5,250,810
Massachusetts.....	12,878,824	581,749	12,732,767	13,314,516
Michigan.....	28,827,824	—	19,702,310	19,702,310
Minnesota.....	4,654,258	(³)	3,084,667	4,411,884
New Jersey.....	9,788,756	9,909,913	—	9,909,913
New York.....	46,470,682	8,990,986	34,113,423	43,104,409
Ohio.....	33,881,938	1,970,539	19,438,062	21,409,501
Pennsylvania.....	69,394,326	10,468,528	14,143,364	24,611,892
Tennessee.....	767,638	786,788	—	786,788
Utah.....	2,098,700	—	2,023,229	2,023,229
Washington.....	440,408	—	315,344	315,344
West Virginia.....	16,695,396	(³)	13,459,413	14,891,078
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin.....	15,523,518	3,381,634	12,628,294	16,009,928
Undistributed.....	—	2,758,882	—	—
Total.....	303,812,046	51,091,228	171,213,991	222,305,219
At merchant plants.....	131,948,097	26,986,276	104,542,947	131,529,223
At furnace plants.....	171,863,949	24,104,952	66,671,044	90,775,996

State	Sold—Continued		Used by producer (gallons)			On hand Dec. 31 (gallons)
	Value		As fuel under boilers	In open-hearth or affiliated plants	Other-wise	
	Total	Average				
Alabama.....	\$571,208	\$0.041	—	(³)	63,523	2,271,605
Colorado.....	(³)	(³)	—	578,709	14,573	313,832
Illinois.....	854,221	.040	—	117,664	11,427	3,236,426
Indiana.....	402,148	.035	—	3,074,868	17,224	2,996,576
Maryland.....	(³)	(³)	—	3,070	—	1,421,538
Massachusetts.....	731,038	.055	—	—	217	2,047,124
Michigan.....	638,332	.032	3,819,879	5,369,223	—	2,750,091
Minnesota.....	220,790	.050	—	(³)	—	253,507
New Jersey.....	(³)	(³)	—	—	—	606,400
New York.....	1,781,325	.041	—	(³)	372,968	4,511,624
Ohio.....	807,654	.038	1,501,528	11,927,599	—	3,471,898
Pennsylvania.....	903,520	.037	1,562,238	37,193,850	270,329	8,325,832
Tennessee.....	40,304	.051	—	—	—	47,808
Utah.....	(³)	(³)	—	—	1,052	115,911
Washington.....	12,886	.041	75,172	—	43,628	23,594
West Virginia.....	482,687	.032	—	1,591,331	3,490	658,280
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin.....	683,124	.043	—	—	658	992,760
Undistributed.....	801,406	.047	—	8,498,553	—	—
Total.....	8,930,643	.040	6,958,817	68,354,867	799,089	34,044,806
At merchant plants.....	5,546,296	.042	846,113	—	420,961	11,736,468
At furnace plants.....	3,384,347	.037	6,112,704	68,354,867	378,128	22,308,338

¹ This table excludes the quantity of tar "refined at plant", which in 1932 was 16,073,807 gallons.

² Includes tar sold to affiliated corporations and to other purchasers.

³ Included under "Undistributed."

AMMONIA

TABLE 46.—Ammonia produced at coke-oven plants in 1932, by States, in pounds

State	Sulphate	Liquor (NH ₃ con- tent)	Sulphate equivalent of all forms	
			Total	Per ton of coal coked
Alabama.....	(¹)	(¹)	53,947,954	26.63
Colorado.....	3,154,641	.....	3,154,641	23.29
Illinois.....	(¹)	(¹)	51,854,126	23.98
Indiana.....	37,639,911	1,831,132	44,964,439	21.70
Maryland.....	15,730,405	.....	15,730,405	23.06
Massachusetts.....	(¹)	(¹)	34,085,772	24.23
Michigan.....	27,451,410	11,522,579	73,541,726	23.79
Minnesota.....	5,370,765	.....	5,370,765	9.43
New Jersey.....	23,006,426	.....	23,006,426	19.76
New York.....	79,658,074	4,728,872	98,573,562	21.91
Ohio.....	57,535,400	5,412,426	79,185,104	23.03
Pennsylvania.....	140,473,133	2,160,510	149,115,173	24.38
Tennessee.....	2,646,630	.....	2,646,630	26.18
Utah.....	4,772,200	.....	4,772,200	25.06
Washington.....	.....	210,408	841,632	14.59
West Virginia.....	31,862,578	.....	31,862,578	23.77
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin.....	21,097,571	4,616,189	39,562,327	21.57
Undistributed.....	124,839,988	3,761,966	.....	.....
Total.....	575,239,132	34,244,082	712,215,460	23.06
At merchant plants.....	196,523,309	29,159,996	313,163,293	22.43
At furnace plants.....	378,715,823	5,084,086	399,052,167	23.57

¹ Included under "Undistributed."

LIGHT OIL AND ITS DERIVATIVES

TABLE 47.—Crude light oil produced at coke-oven plants in the United States in 1932, by States, in gallons ¹

State	Average yield per ton of coal coked	Produced	Refined on premises	Total de- rived products obtained from refining operations
Alabama.....	2.90	5,864,748	5,627,587	4,971,842
Colorado.....	3.09	418,541	415,633	288,110
Illinois.....	2.60	5,190,048	2,482,407	1,831,462
Indiana.....	2.76	4,451,460	4,731,851	3,981,718
Maryland.....	3.25	2,217,000	2,217,000	1,715,191
Michigan.....	2.65	7,274,567	3,880,857	3,253,259
New York.....	2.68	7,852,756	12,897,314	10,806,628
Ohio.....	3.04	10,269,324	9,253,150	7,197,722
Pennsylvania.....	3.39	17,307,070	17,432,748	14,608,555
Tennessee.....	2.54	256,411	260,563	202,061
Utah.....	4.02	765,780	763,480	593,525
West Virginia.....	3.42	4,218,613	4,218,233	3,769,068
Kentucky, Massachusetts, Minnesota, Missouri, and Wisconsin.....	2.57	7,176,248	6,600,008	5,670,901
Total.....	2.94	73,763,166	70,780,831	58,890,042
At merchant plants.....	2.57	22,101,572	19,287,121	16,417,640
At furnace plants.....	3.13	51,661,594	51,493,710	42,472,402

¹ In addition to the quantity refined on the premises a few plants reported the sale of crude light oil. The total quantity sold in 1932 was 5,652,626 gallons valued at \$490,323 or 8.7 cents per gallon.

COKE-OVEN GAS

TABLE 48.—Coke-oven gas produced and sold in the United States in 1932, by States

State	Number of active plants	Produced (M cubic feet)	Used in heating ovens (M cubic feet)	Surplus sold or used			Wasted (M cubic feet)
				M cubic feet	Value		
					Total	Average	
Alabama.....	7	22,425,869	10,719,135	11,114,381	\$937,111	\$0.084	592,353
Colorado.....	1	1,631,793	1,243,198	386,534	(1)	(1)	2,061
Illinois.....	8	22,959,780	5,154,666	17,791,685	4,838,213	.272	13,429
Indiana.....	6	21,087,103	9,959,798	10,921,033	3,807,581	.349	206,272
Maryland.....	1	6,796,208	2,123,013	4,673,195	(1)	(1)	.....
Massachusetts.....	3	16,608,075	2,620,956	13,919,761	3,994,237	.287	67,358
Michigan.....	9	37,219,055	12,442,828	24,776,227	5,983,620	.242	.....
Minnesota.....	3	6,328,958	2,239,008	4,089,816	1,546,152	.373	134
New Jersey.....	2	14,556,395	2,755,587	11,800,809	(1)	(1)	.....
New York.....	9	51,677,557	9,049,176	41,829,153	14,197,856	.339	799,228
Ohio.....	14	36,491,453	16,796,942	19,247,120	2,499,276	.130	447,391
Pennsylvania.....	12	69,703,935	28,928,862	40,245,502	6,979,909	.173	529,571
Tennessee.....	1	955,450	431,130	524,320	147,785	.282	.....
Utah.....	1	2,592,308	1,313,231	1,172,873	(1)	(1)	106,204
Washington.....	1	670,869	.....	595,816	143,529	.241	75,053
West Virginia.....	4	14,577,020	4,767,485	9,777,811	888,524	.091	31,724
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin.....	6	21,204,069	3,123,157	18,010,240	5,525,372	.307	70,672
Undistributed.....	.....	.....	.....	.....	3,386,874	.188	.....
Total.....	98	347,485,898	113,668,172	230,876,276	54,876,039	.238	2,941,450
At merchant plants.....	44	162,554,138	31,928,788	129,192,791	40,429,165	.313	1,432,559
At furnace plants.....	44	184,931,760	81,739,384	101,683,485	14,446,874	.142	1,508,891

1 Included under "Undistributed."

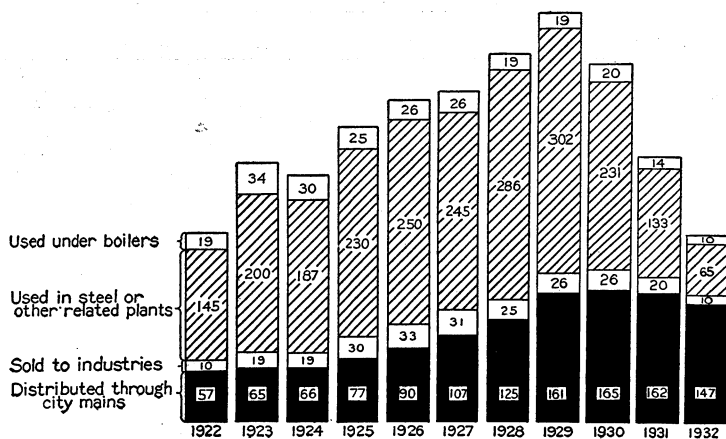


FIGURE 4.—Disposition of surplus coke-oven gas, 1922-32. Gas used in heating ovens or wasted, not included. Figures in bars represent billions of cubic feet.

286 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

TABLE 49.—Disposition of surplus coke-oven gas in the United States in 1932, by States

State	Used by producer					
	Under boilers			In steel or other affiliated plants		
	M cubic feet	Value		M cubic feet	Value	
		Total	Average		Total	Average
Alabama.....	3, 018, 222	\$145, 467	\$0. 048	4, 644, 923	\$293, 249	\$0. 063
Colorado.....				386, 534	(1)	(1)
Illinois.....	66, 583	3, 981	. 060	584, 902	77, 456	. 132
Indiana.....	33, 069	5, 834	. 176	4, 121, 447	547, 856	. 133
Maryland.....				2, 336, 535	(1)	(1)
Massachusetts.....	19, 420	7, 749	. 399			
Michigan.....	(1)	(1)	(1)	(1)	(1)	(1)
Minnesota.....	10, 929	2, 009	. 184	(1)	(1)	(1)
New Jersey.....						
New York.....	1, 119, 476	70, 710	. 063	5, 686, 877	625, 703	. 110
Ohio.....	1, 034, 562	75, 808	. 073	11, 545, 332	1, 142, 101	. 069
Pennsylvania.....	1, 135, 620	67, 614	. 060	20, 416, 156	1, 786, 553	. 088
Tennessee.....	90, 650	3, 354	. 037			
Utah.....	756, 440	(1)	(1)			
Washington.....				2, 449	1, 714	. 700
West Virginia.....	882, 803	40, 250	. 046	7, 340, 560	563, 421	. 077
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin.....	(1)	(1)	(1)	3, 269	763	. 233
Undistributed.....	1, 386, 511	118, 730	. 055	7, 835, 445	2, 210, 133	. 209
Total.....	9, 554, 285	541, 506	. 057	64, 904, 429	7, 248, 949	. 112
At merchant plants.....	4, 685, 971	287, 453	. 061	915, 789	102, 221	. 112
At furnace plants.....	4, 868, 314	254, 053	. 052	63, 988, 640	7, 146, 728	. 112

State	Sold					
	Distributed through city mains			Sold for industrial purposes		
	M cubic feet	Value		M cubic feet	Value	
		Total	Average		Total	Average
Alabama.....	3, 321, 630	\$489, 286	\$0. 147	129, 606	\$9, 109	\$0. 070
Colorado.....						
Illinois.....	17, 140, 200	4, 756, 776	. 278			
Indiana.....	5, 182, 407	2, 970, 080	. 573	1, 584, 110	283, 811	. 179
Maryland.....	2, 336, 660	(1)	(1)			
Massachusetts.....	13, 849, 427	3, 972, 488	. 287	50, 914	14, 000	. 275
Michigan.....	15, 449, 116	3, 859, 421	. 250	240, 345	64, 531	. 268
Minnesota.....	4, 076, 230	1, 543, 518	. 379			
New Jersey.....	11, 800, 809	(1)	(1)			
New York.....	34, 264, 768	13, 240, 281	. 386	758, 032	261, 162	. 345
Ohio.....	5, 538, 701	1, 159, 188	. 209	1, 128, 525	122, 179	. 108
Pennsylvania.....	15, 662, 740	4, 510, 438	. 288	3, 030, 986	615, 304	. 203
Tennessee.....	433, 670	144, 431	. 333			
Utah.....	346, 092	(1)	(1)	70, 341	(1)	(1)
Washington.....	593, 367	141, 815	. 239			
West Virginia.....				(1)	(1)	(1)
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin.....	16, 709, 753	5, 361, 142	. 321	1, 164, 685	149, 684	. 129
Undistributed.....		3, 125, 218	. 216	1, 554, 448	291, 722	. 180
Total.....	146, 705, 570	45, 274, 082	. 309	9, 711, 992	1, 811, 502	. 187
At merchant plants.....	118, 617, 138	39, 142, 877	. 330	4, 973, 893	896, 614	. 180
At furnace plants.....	28, 088, 432	6, 131, 205	. 218	4, 738, 099	914, 888	. 193

1 Included under "Undistributed."

NAPHTHALENE

TABLE 50.—Naphthalene sold by byproduct coke operators, 1918 and 1929-32

Year	Quantity (pounds)			Value	Average receipts per pound (cents)		Receipts per ton of coke (cents)
	Crude	Refined	Total		Crude	Refined	
1918.....	10,403,758	5,486,689	15,890,447	\$650,229	2.8	6.6	2.5
1929.....	19,659,367	19,659,367	320,272	320,272	11.6		.6
1930.....	13,028,904	13,028,904	161,264	161,264	11.2		.4
1931.....	7,360,309	7,360,309	78,946	78,946	11.1		.2
1932.....	3,714,604	3,714,604	33,323	33,323	10.9		.2

¹ Crude and refined not separated.

BYPRODUCT COKE OVENS OWNED BY CITY GAS COMPANIES, INCLUDED BY BUREAU OF THE CENSUS IN MANUFACTURED-GAS INDUSTRY

TABLE 51.—Production of coke, breeze, gas, and byproducts at byproduct coke plants owned by city gas companies (public utilities) and included by Bureau of the Census in manufactured-gas industry, and at all other byproduct coke plants, 1931 and 1932

Product	1931			1932		
	Plants not owned by city gas companies	Plants owned by city gas companies (public utilities) ¹	Total	Plants not owned by city gas companies	Plants owned by city gas companies (public utilities) ¹	Total
Number of active plants.....	67	21	88	65	23	88
Coke:						
Production.....net tons.....	28,806,731	3,548,818	32,355,549	18,001,111	3,135,731	21,136,842
Value.....	\$134,540,601	\$23,549,522	\$158,090,123	\$83,195,531	\$19,339,795	\$102,535,326
Average value.....	\$4.67	\$6.64	\$4.89	\$4.62	\$6.17	\$4.85
Screenings or breeze:						
Production.....net tons.....	2,763,971	362,314	3,126,285	1,801,969	316,885	2,118,854
Sales.....do.....	623,303	19,544	642,847	584,150	24,376	608,526
Value.....	\$1,558,486	\$65,377	\$1,623,863	\$1,335,512	\$62,115	\$1,397,627
Average value.....	\$2.50	\$3.35	\$2.53	\$2.29	\$2.55	\$2.30
Coal charged into ovens:						
Quantity.....net tons.....	41,640,819	5,205,458	46,846,277	26,276,482	4,610,699	30,887,181
Coke:						
Used by producer:						
Quantity.....net tons.....	17,288,832	1,024,900	18,313,732	8,741,986	857,240	9,599,226
Value.....	\$72,026,931	\$7,308,610	\$79,335,541	\$36,751,535	\$5,636,095	\$42,437,630
Sales:						
Quantity.....net tons.....	10,535,723	2,325,721	12,861,444	9,841,514	2,408,670	12,250,184
Value.....	\$56,957,186	\$14,901,235	\$71,858,421	\$49,360,469	\$14,318,004	\$63,678,473
Byproducts:						
Gas:						
Production.....M cubic feet.....	462,489,417	61,608,068	524,097,485	291,887,464	55,598,434	347,485,898
Sales of surplus:						
Used under boilers:						
Quantity.....M cubic feet.....	14,254,066	20,427	14,274,493	9,520,121	34,164	9,554,285
Value.....	\$802,333	\$8,340	\$810,673	\$529,677	\$11,829	\$541,506
Used in steel or affiliated plants:						
Quantity.....M cubic feet.....	132,630,399	131,487	132,761,886	64,886,051	18,378	64,904,429
Value.....	\$14,197,053	\$46,367	\$14,243,420	\$7,238,504	\$10,445	\$7,248,949
Distributed through city mains:						
Quantity.....M cubic feet.....	108,654,245	53,226,878	161,881,123	97,340,574	49,364,996	146,705,570
Value.....	\$28,264,860	\$20,758,865	\$49,023,725	\$25,329,812	\$19,944,270	\$45,274,082
Sold for industrial use:						
Quantity.....M cubic feet.....	18,679,873	1,310,088	19,989,961	8,756,042	955,950	9,711,992
Value.....	\$2,856,895	\$495,200	\$3,352,095	\$1,477,696	\$333,806	\$1,811,502

¹ Includes all byproduct ovens built by city gas companies, some of which are operated in conjunction with coal-, oil-, and water-gas plants. Does not include independent byproduct plants which may sell gas to public-utility companies for distribution.

TABLE 51.—*Production of coke, breeze, gas, and byproducts at byproduct coke plants owned by city gas companies (public utilities) and included by Bureau of the Census in manufactured-gas industry, and at all other byproduct coke plants, 1931 and 1932—Continued*

Product	1931			1932		
	Plants not owned by city gas companies	Plants owned by city gas companies (public utilities)	Total	Plants not owned by city gas companies	Plants owned by city gas companies (public utilities)	Total
Byproducts—Continued.						
Tar:						
Production..... gallons.....	399,203,965	51,652,127	450,856,092	255,882,512	47,929,534	303,812,046
Sales:						
Quantity..... do.....	222,129,463	51,035,110	273,164,573	174,061,553	48,243,666	222,305,219
Value.....	\$9,980,449	\$2,460,118	\$12,440,567	\$6,865,288	\$2,065,355	\$8,930,643
Average value.....	\$0.045	\$0.048	\$0.046	\$0.039	\$0.043	\$0.040
Ammonia:						
Production (NH ₃ equivalent of all forms)..... pounds.....	255,247,138	29,745,613	284,992,751	154,206,054	23,847,811	178,053,865
Liquor (NH ₃ content):						
Production..... pounds.....	35,757,003	3,332,085	39,089,088	30,524,808	3,719,274	34,244,082
Sales..... do.....	33,982,437	3,364,707	37,347,144	30,686,943	3,778,952	34,465,895
Value.....	\$1,390,392	\$75,606	\$1,465,998	\$1,006,205	\$65,797	\$1,072,002
Sulphate:						
Production..... pounds.....	877,960,541	105,654,110	983,614,651	494,724,983	80,514,149	575,239,132
Sales..... do.....	905,244,708	102,317,095	1,007,561,803	521,682,220	84,939,953	606,622,173
Value.....	\$11,469,496	\$1,342,926	\$12,812,422	\$4,638,736	\$727,683	\$5,366,419
Crude light oil:						
Production..... gallons.....	118,410,696	4,118,452	122,529,148	70,448,237	3,314,929	73,763,166
Sales..... do.....	5,724,245	3,014,957	8,739,202	3,233,505	2,419,121	5,652,626
Value.....	\$478,576	\$231,530	\$710,106	\$284,080	\$206,243	\$490,323
Light-oil derivatives:						
Production..... gallons.....	97,693,830	835,206	98,529,036	58,231,506	658,536	58,890,042
Sales..... do.....	95,101,844	875,473	95,977,317	56,873,635	628,938	57,502,573
Value.....	\$13,534,164	\$145,690	\$13,679,854	\$8,797,626	\$116,188	\$8,913,814
Naphthalene, crude and refined:						
Production..... pounds.....	7,613,612	9,317	7,622,929	4,616,992	15,274	4,632,266
Sales..... do.....	7,350,992	9,317	7,360,309	3,699,330	15,274	3,714,604
Value.....	\$78,806	\$140	\$78,946	\$33,247	\$76	\$33,323
All other products, value.....	\$1,537,388	\$37,898	\$1,575,286	\$695,609	\$30,020	\$725,629

SAND AND GRAVEL

(DETAILED STATISTICS)

By H. H. HUGHES AND M. ALLAN ¹

PRODUCTION

The total sand and gravel reported as sold or used by 2,255 commercial producers in the United States amounted to 85,289,076 short tons valued at \$47,489,038 in 1932, a decrease of 33.9 percent in quantity and 37.9 percent in value from 1931. In addition, production of sand and gravel from more than 400 State, county, or municipal operations was reported to the Bureau of Mines; the quantity of such material totaled 34,748,821 short tons and the value \$10,033,038, increases of 41.6 and 2.3 percent, respectively. The total output of sand and gravel accounted for in the canvass by the Bureau of Mines for 1932 was therefore 120,037,897 short tons valued at \$57,522,076.

Noncommercial production.—Prior to 1931 the total sand and gravel reported to the Bureau of Mines as sold or used by producers represented the commercial sand and gravel industry within reasonable limits of accuracy. Some material produced by States, counties, municipalities, and other Government agencies was included each year, but such noncommercial output constituted at most only about 10 percent of the total. By 1931, however, noncommercial production of sand and gravel had increased to 24,540,355 short tons (16 percent of the total). A further increase to 34,748,821 short tons (29 percent of the total) was recorded in 1932.

Complete statistical coverage of sand and gravel production by States, counties, and municipalities is impossible without an extensive field staff. As a result, reports of noncommercial production may not be received by the Bureau of Mines from strictly comparable sources each year. Although part of the large increase in such material since 1928 may be ascribed to more nearly complete statistical returns much of it is traceable to local activity in road construction to relieve unemployment. In 1932, for example, notable increases in noncommercial production were recorded in Colorado, Idaho, Iowa, Montana, New Mexico, North Dakota, Rhode Island, Tennessee, and Washington.

Less than one third—7,727,085 short tons in 1931 and 8,057,448 tons in 1932—of the sand and gravel produced by Government agencies is screened, washed, or otherwise prepared to make it comparable in quality with the output of the average commercial plant. By far the larger part consists of pit-run material having a low unit

¹ Figures on imports and exports compiled by C. Galiber, of the Bureau of Mines, from records of the Bureau of Foreign and Domestic Commerce.

value. The average value of all noncommercial sand and gravel in 1932 was \$0.29 a ton contrasted with \$0.56 a ton for the commercial output.

Inclusion of a variable quantity of low-grade material produced by States, counties, and municipalities obviously tends to obscure trends in output from plants producing prepared sand and gravel for sale in competitive markets. In recognition of the importance of segregating noncommercial production the Bureau of Mines presents in 1932, for the first time, a statistical break-down to show production by States, counties, and municipalities (noncommercial) in proper relation to sales by privately owned plants (commercial).

Because of the unforeseen increase in noncommercial production the preliminary estimate² of 89,000,000 short tons for total output of sand and gravel was materially below the 120,037,897 tons finally reported. This discrepancy, however, is not as significant as it appears at first glance, as the declines recorded by the commercial sand and gravel industry conform generally to the estimated declines. Appreciable revisions were required only in those items heavily weighted by noncommercial production, such as paving gravel in which 56 percent of the total 56,533,469 tons represented noncommercial production. This illustrates the difficulty of forecasting noncommercial production of sand and gravel, especially during a period when "make-work" campaigns are considered a necessary form of public relief. Commercial production, however, conforms closely to available indicators of markets.

Railroad ballast.—All railroad ballast is included in this report under commercial production. In 1932, 2,140,154 short tons (41.9 percent) of the total ballast gravel accounted for were produced by or directly for the railroads for their own use, and the low unit value of this material (\$0.14 a ton) is comparable with that of noncommercial gravel; for statistical purposes, however, the latter category is reserved for production by Government agencies. Part of the material produced by the railroads for their own use may have been used for fill and for miscellaneous purposes other than track ballast.

Value.—The unit value of all sand and gravel accounted for in 1932 was \$0.48 a ton, a drop of 14.3 percent from 1931. This decline was due partly to the increased quantity of low-grade pit-run material included in the total but also to general price decreases, as the unit value of commercial production dropped from \$0.59 in 1931 to \$0.56 in 1932. The value per ton of noncommercial sand is comparable with that of building and paving sand produced by commercial operators; this fact indicates that most of the sand produced by Government agencies is washed, screened, or otherwise prepared.

Preparation.—The percentage of prepared material included in the total for sand and gravel dropped to 69.8 percent in 1932 as a result of the increase in quantity of unprepared material reported by Government agencies. This prepared sand and gravel (83,796,167 short tons) includes only 8,057,448 tons contributed by noncommercial sources. Prepared material comprised only 23.2 percent of the noncommercial output but 88.8 percent of the commercial production.

Transportation.—Producers were asked to report the method of transporting their product during 1932. Replies covered 105,131,439 short tons—87.6 percent of the total recorded production of sand

²Hughes, H. H., and Phillips, E. R., Minerals Yearbook, 32-33: Bureau of Mines, 1933, p. 603.

and gravel. Of this quantity 10.7 percent was transported by waterway, 33.6 percent by rail, and 55.7 percent by truck.

Relation between gravel and sand.—Gravel sold or used by producers in 1932 decreased only 13.2 percent from 1931, whereas sand decreased 33.6 percent. Gravel in 1932 comprised 64.3 percent and sand 35.7 percent of the total material accounted for. It must be remembered, however, that most of the unprepared material is included in the noncommercial production of gravel.

Sand and gravel sold or used by commercial and noncommercial producers in the United States, 1928-32

[Figures for "noncommercial operations" represent tonnages reported by States, counties, municipalities and other Government agencies, produced either by themselves or by contractors expressly for their consumption, often with publicly owned equipment; they do not include purchases from commercial producers. Figures for "commercial operations" represent tonnages reported by all other producers, including relatively small amounts of railroad ballast and fill produced directly by railroad carriers for their own use]

Year	Sand		Gravel (including railroad ballast)		Total	
	Short tons	Value	Short tons	Value	Short tons	Value
1928.....	97,737,717	\$56,132,406	111,381,151	\$63,075,531	209,118,868	\$119,207,937
1929.....	99,253,054	60,801,357	123,318,851	72,084,622	222,571,905	132,835,979
1930.....	83,658,618	49,721,553	113,393,108	65,454,990	197,051,726	115,176,543
1931.....	64,492,826	36,696,746	88,986,218	49,583,574	153,479,044	86,280,320
1932.....	42,794,875	22,497,074	77,243,022	35,025,002	120,037,897	57,522,076

Year	Commercial operations		Noncommercial operations ¹		Total accounted for	
	Short tons	Percent of change from preceding year	Short tons	Percent of change from preceding year	Short tons	Percent of change from preceding year
1928.....	199,519,637	(?)	9,599,231	(?)	209,118,868	+5.9
1929.....	206,218,734	+3.4	16,353,171	+70.4	222,571,905	+6.4
1930.....	176,880,106	-14.2	20,171,620	+23.3	197,051,726	-11.5
1931.....	128,938,689	-27.1	24,540,355	+21.7	153,479,044	-22.1
1932.....	85,289,076	-33.9	34,748,821	+41.6	120,037,897	-21.8

¹ Part of the apparently large increase in noncommercial production is due to more nearly complete reports in the later years. Even the 1932 figures are probably incomplete, as it is often difficult for local authorities to supply such information.

² Separate figures for commercial and noncommercial for earlier years not available.

292 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Sand and gravel sold or used by commercial and noncommercial producers in the United States, 1931 and 1932, by uses

Use	1931			1932			Percent of change in—	
	Short tons	Value		Short tons	Value		Ton-nage	Total value
		Total	Average		Total	Average		
COMMERCIAL OPERATIONS								
Sand:								
Glass.....	1,677,882	\$2,779,245	\$1.66	1,370,255	\$2,266,564	\$1.65	-18.3	-18.4
Molding.....	2,138,305	2,122,049	.99	1,118,146	1,051,702	.94	-47.7	-50.4
Building.....	25,154,296	13,653,565	.54	14,597,331	7,507,700	.51	-42.0	-45.0
Paving.....	25,362,674	12,568,050	.50	17,194,583	7,622,597	.44	-32.2	-39.3
Grinding and polishing.....	607,589	1,105,213	1.82	419,691	638,556	1.52	-30.9	-42.2
Fire or furnace.....	88,189	131,640	1.49	36,698	54,371	1.48	-58.4	-58.7
Engine.....	1,604,123	1,012,548	.63	1,151,011	688,563	.60	-28.2	-32.0
Filter.....	55,319	119,825	2.17	68,035	92,751	1.36	+23.0	-22.6
Other ¹	5,683,266	2,050,348	.36	4,486,655	1,463,650	.33	-21.1	-28.6
Total sand.....	62,371,643	35,532,483	.57	40,442,675	21,386,454	.53	-35.2	-39.8
Gravel:								
Building.....	21,377,015	15,411,716	.72	13,064,368	9,549,698	.73	-38.9	-38.0
Paving.....	34,346,857	21,998,870	.64	25,137,550	14,728,893	.59	-26.8	-33.1
Railroad ballast ²	10,843,174	3,528,684	.33	6,644,483	1,823,993	.27	-38.7	-48.3
Total gravel.....	66,567,046	40,939,270	.62	44,846,401	26,102,584	.58	-32.6	-36.2
Total sand and gravel.....	128,938,689	76,471,753	.59	85,289,076	47,489,038	.56	-33.9	-37.9
NONCOMMERCIAL OPERATIONS³								
Sand:								
Building.....	24,276	7,491	.31	147,636	97,283	.66	+508.2	+1,198.7
Paving.....	2,096,907	1,156,772	.55	2,204,564	1,013,337	.46	+5.1	-12.4
Total sand.....	2,121,183	1,164,263	.55	2,352,200	1,110,620	.47	+10.9	-4.6
Gravel:								
Building.....	49,799	37,993	.76	1,000,702	253,931	.25	+1,909.5	+568.4
Paving.....	22,369,373	8,606,311	.38	31,395,919	8,668,487	.28	+40.4	+7
Total gravel.....	22,419,172	8,644,304	.39	32,396,621	8,922,418	.28	+44.5	+3.2
Total sand and gravel.....	24,540,355	9,808,567	.40	34,748,821	10,033,038	.29	+41.6	+2.3
COMMERCIAL AND NONCOMMERCIAL OPERATIONS								
Sand.....	64,492,826	36,696,746	.57	42,794,875	22,497,074	.53	-33.6	-38.7
Gravel.....	88,986,218	49,583,574	.56	77,243,022	35,025,002	.45	-13.2	-29.4
Grand total.....	153,479,044	86,280,320	.56	120,037,897	57,522,076	.48	-21.8	-33.3

¹ Includes some sand used for railroad ballast, fills, etc.

² Includes some gravel used for fills and other purposes. The quantity of gravel reported as used exclusively for railroad ballast was as follows: 1931, 8,814,907 tons valued at \$2,898,598; 1932, 5,113,862 tons valued at \$1,513,240. The foregoing figures for ballast include that produced by railroads for their own use, amounting in 1932 to 2,140,154 tons valued at \$293,328.

³ By States, counties, municipalities, and other Government agencies, directly or under lease.

Sand and gravel sold or used by commercial and noncommercial producers in the United States in 1932, by States and uses

State	Glass sand		Molding sand		Building sand ¹		Paving sand ¹		Grinding and polishing sand		Fire or furnace sand		Engine sand	
	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value
Alabama.....			15, 183	\$12, 351	120, 671	\$44, 081	87, 720	\$28, 582	(?)	(?)	(?)	(?)	13, 840	\$3, 853
Arizona.....					427, 933	328, 973	(?)	(?)					(?)	(?)
Arkansas.....					35, 729	22, 643	88, 818	42, 219					12, 685	7, 097
California.....	37, 903	\$138, 394	15, 811	36, 707	1, 137, 483	568, 563	1, 510, 280	687, 825	3, 498	\$10, 505	(?)	(?)	3, 295	1, 696
Colorado.....					70, 694	38, 831	155, 694	81, 076					10, 175	5, 848
Connecticut.....			183	112	148, 811	79, 088	71, 566	20, 157	(?)	(?)				
Delaware.....					8, 370	6, 961	39, 492	15, 442	(?)	(?)				
District of Columbia.....					(?)	(?)	(?)	(?)					(?)	(?)
Florida.....			(?)	(?)	58, 224	31, 765	77, 799	42, 618	(?)	(?)	(?)	(?)	5, 933	3, 468
Georgia.....	(?)	(?)	(?)	(?)	47, 230	20, 115	125, 681	39, 533	44, 784	18, 560	(?)	(?)	5, 215	2, 086
Idaho.....					2, 762	1, 661	64, 467	45, 044	(?)	(?)				
Illinois.....	324, 587	329, 639	159, 140	155, 457	743, 553	304, 863	1, 417, 064	501, 657	83, 942	210, 209	(?)	(?)	45, 964	25, 172
Indiana.....	(?)	(?)	67, 255	33, 012	435, 965	172, 518	885, 350	309, 141			(?)	(?)	71, 228	13, 189
Iowa.....			(?)	(?)	288, 719	118, 866	827, 883	204, 192	6, 111	8, 315			22, 277	10, 449
Kansas.....					432, 537	221, 750	489, 164	240, 045	(?)	(?)			43, 936	23, 496
Kentucky.....	(?)	(?)	4, 169	5, 673	30, 271	18, 545	345, 417	178, 395						
Louisiana.....					185, 323	70, 517	338, 054	118, 890					(?)	(?)
Maine.....					11, 799	5, 571	15, 096	10, 851	(?)	(?)			(?)	(?)
Maryland.....					78, 830	54, 856	792, 896	412, 658					(?)	(?)
Massachusetts.....	(?)	(?)	(?)	(?)	677, 781	409, 385	376, 897	174, 235	1, 300	1, 883	(?)	(?)	(?)	(?)
Michigan.....	(?)	(?)	236, 141	92, 902	497, 548	183, 325	762, 186	260, 427	(?)	(?)			(?)	(?)
Minnesota.....	(?)	(?)	10, 644	5, 997	432, 132	150, 512	857, 247	274, 580	(?)	(?)			19, 272	5, 411
Mississippi.....					44, 587	4, 282	84, 952	23, 928	(?)	(?)			2, 857	791
Missouri.....	107, 301	160, 292	8, 055	6, 404	478, 233	225, 915	666, 076	335, 355	(?)	(?)			(?)	(?)
Montana.....					11, 353	9, 556								
Nebraska.....					170, 225	61, 973	63, 939	20, 359					21, 281	7, 709
Nevada.....	(?)	(?)	(?)	(?)	(?)	(?)	(?)	(?)						
New Hampshire.....					(?)	(?)	305, 241	42, 019						
New Jersey.....	119, 185	163, 252	150, 579	164, 488	866, 061	488, 385	655, 120	351, 075	15, 395	25, 886	5, 911	\$7, 573	25, 939	11, 208
New Mexico.....					10, 547	7, 716			(?)	(?)			(?)	(?)
New York.....	(?)	(?)	156, 907	194, 485	3, 298, 893	1, 733, 531	2, 102, 353	1, 035, 715	(?)	(?)			48, 511	29, 236
North Carolina.....					15, 196	4, 556	24, 615	7, 383					(?)	(?)
North Dakota.....					18, 106	14, 765								
Ohio.....	71, 855	140, 396	108, 852	151, 394	762, 666	409, 256	1, 135, 837	560, 287	59, 811	218, 598	11, 211	23, 754	44, 114	37, 295
Oklahoma.....	(?)	(?)			114, 064	51, 339	171, 809	64, 963					19, 051	9, 941
Oregon.....					122, 708	73, 173	66, 872	35, 071					(?)	(?)
Pennsylvania.....	277, 522	527, 308	96, 900	108, 694	1, 076, 648	690, 852	637, 862	426, 579	29, 084	39, 784	6, 452	10, 731	174, 472	175, 670
Rhode Island.....			(?)	(?)	(?)	(?)	44, 018		(?)	(?)				

¹ Includes noncommercial production.

¹ Included under "Undistributed."

73501-11-1

SAND AND GRAVEL

Sand and gravel sold or used by commercial and noncommercial producers in the United States in 1932, by States and uses—Continued

State	Glass sand		Molding sand		Building sand		Paving sand		Grinding and polishing sand		Fire or furnace sand		Engine sand	
	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value
South Carolina.....			(?)	(?)	(?)	(?)	(?)	(?)					(?)	(?)
South Dakota.....					30,454	\$16,028	72,419	\$14,524						
Tennessee.....			7,542	\$10,442	200,130	140,937	559,693	370,152	(?)	(?)			53,071	\$32,977
Texas.....	(?)	(?)	(?)	(?)	620,159	298,088	670,439	308,173					18,184	6,459
Utah.....			(?)	(?)	35,611	15,294	49,015	26,100					37,867	10,697
Vermont.....					(?)	(?)	26,920	15,651	(?)	(?)			(?)	(?)
Virginia.....	(?)	(?)	13,472	10,351	32,363	44,459	355,025	166,411	(?)	(?)			(?)	(?)
Washington.....			(?)	(?)	242,952	97,880	350,206	132,535					37,718	15,015
West Virginia.....			(?)	(?)	110,067	82,148	172,317	118,273	(?)	(?)			170,704	120,175
Wisconsin.....	280,889	\$545,879	12,384	9,707	318,534	110,887	697,203	210,266	10,183	\$15,125	(?)	(?)	29,543	4,847
Wyoming.....					(?)	(?)	(?)	(?)						
Undistributed ³	151,013	261,404	54,929	53,526	243,345	170,774	1,118,415	673,854	165,583	89,691	13,124	\$12,313	213,879	112,778
Average value.....	1,370,255	2,266,564 1.65	1,118,146	1,051,702 0.94	14,745,267	7,604,983 0.52	19,399,117	8,635,934 0.45	419,691	638,556 1.52	36,698	54,371 1.48	1,151,011	688,563 0.60

State	Filter sand		Other sands		Building gravel ¹		Paving gravel ¹		Railroad ballast gravel		Total ¹	
	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value
Alabama.....					116,575	\$61,240	188,677	\$82,510	44,366	\$13,406	588,209	\$246,317
Arizona.....			(?)	(?)	974,733	746,696	(?)	(?)	6,935	3,126	1,448,501	1,092,757
Arkansas.....			16,100	\$6,650	22,208	15,124	195,952	135,035	93,068	44,345	464,560	273,013
California.....	(?)	(?)	30,544	17,039	1,413,196	944,716	2,123,743	1,164,068	313,407	115,328	6,592,404	3,692,733
Colorado.....			41,571	12,325	120,133	74,960	428,244	272,852	24,455	11,673	850,966	497,595
Connecticut.....	(?)	(?)	(?)	(?)	59,525	41,275	41,139	33,308	(?)	(?)	323,803	178,406
Delaware.....	(?)	(?)	(?)	(?)	919	1,245	(?)	(?)			73,981	38,116
District of Columbia.....					(?)	(?)	(?)	(?)			(?)	(?)
Florida.....			(?)	(?)	58,794	55,065	17,523	15,665	(?)	(?)	270,068	178,554
Georgia.....	(?)	(?)	(?)	(?)	25,460	15,015	27,133	21,504	(?)	(?)	291,867	127,655
Idaho.....			(?)	(?)	10,231	6,000	1,184,778	597,157	(?)	(?)	1,307,568	651,720
Illinois.....	(?)	(?)	369,186	123,226	873,553	407,739	2,292,315	1,003,278	436,513	114,310	3,184,407	1,480,707
Indiana.....			2,448,358	781,862	567,140	301,805	1,934,211	1,014,316	559,190	212,827	6,974,375	2,839,522
Iowa.....	(?)	(?)	55,599	18,212	289,349	219,651	3,422,195	1,063,008	314,850	55,564	5,230,502	1,706,574
Kansas.....	5,760	\$1,808	98,056	28,580	73,988	45,033	667,066	313,570	(?)	(?)	1,851,211	873,783
Kentucky.....			(?)	(?)	30,776	18,022	569,436	288,752	68,901	20,836	1,064,194	547,782
Louisiana.....			(?)	(?)	441,658	241,417	792,355	515,163	105,556	65,693	1,888,544	1,022,763

Maine			(³)	(²)	16,850	14,194	3,570,469	333,357	118,022	31,758	3,736,440	396,842
Maryland			(²)	(²)	31,814	23,190	701,390	681,084	(²)	(²)	1,622,298	1,200,802
Massachusetts	(²)	(²)	6,412	3,521	424,253	355,134	3,393,699	1,329,397	53,537	10,196	5,003,193	2,334,043
Michigan			463,183	81,205	530,702	262,476	2,709,306	1,184,779	73,267	21,881	5,468,663	2,291,106
Minnesota	1,287	3,205	83,148	18,480	325,123	277,879	1,693,799	1,144,862	524,169	97,118	3,950,289	1,983,235
Mississippi			(²)	(²)	77,757	34,748	390,510	230,806	104,104	21,476	707,949	317,477
Missouri			16,386	7,886	325,508	153,098	1,855,693	1,188,957	35,631	17,177	3,526,373	2,114,440
Montana			17,659	3,027	15,836	12,888	2,824,647	158,564	396,033	70,987	3,265,528	255,014
Nebraska	(²)	(²)	(²)	(²)	124,194	57,337	1,103,013	433,345	68,644	22,280	1,557,663	607,343
Nevada			(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)	990,415	408,423
New Hampshire			(²)	(²)	(²)	(²)	1,389,303	181,729	(²)	(²)	1,696,441	224,101
New Jersey	11,273	25,944	61,226	53,327	390,548	428,883	326,827	251,761	18,026	21,499	2,646,090	1,993,281
New Mexico			(²)	(²)	14,053	10,963	756,294	520,758	(²)	(²)	834,521	570,555
New York	9,290	6,900	72,457	21,179	2,168,883	1,717,843	1,272,262	851,065	107,412	53,952	9,232,390	5,644,328
North Carolina			(²)	(²)	(²)	(²)	42,414	36,275	32,163	13,251	177,074	99,640
North Dakota			(²)	(²)	28,413	20,027	(²)	(²)	(²)	(²)	1,652,264	166,552
Ohio	24,338	17,539	120,219	28,871	839,573	522,187	1,856,038	1,028,235	661,032	302,722	5,695,546	3,440,534
Oklahoma			9,272	3,335	59,877	48,057	213,556	86,326	(²)	(²)	616,250	306,415
Oregon			(²)	(²)	306,319	154,246	1,111,102	542,204	156,817	29,370	1,780,715	839,813
Pennsylvania			88,370	96,924	1,038,784	933,908	1,904,985	810,556	20,999	8,680	5,352,078	3,829,686
Rhode Island			(²)	(²)	(²)	(²)	827,595	100,932	(²)	(²)	903,807	132,739
South Carolina			(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)
South Dakota			26,571	7,085	40,018	17,067	1,869,894	188,273	25,926	5,196	2,065,282	248,173
Tennessee			(²)	(²)	238,968	156,410	681,625	393,215	(²)	(²)	1,830,685	1,136,386
Texas	(²)	(²)	120,017	30,245	559,389	417,202	1,480,334	974,497	428,141	166,994	3,909,349	2,213,686
Utah			(²)	(²)	59,309	19,400	1,295,079	496,025	(²)	(²)	1,488,085	575,539
Vermont			(²)	(²)	34,471	8,435	80,148	49,329	(²)	(²)	238,234	111,920
Virginia			(²)	(²)	68,034	38,034	398,376	258,054	(²)	(²)	1,089,609	620,542
Washington			(²)	(²)	389,288	163,337	2,930,382	1,166,016	1,203,348	111,784	5,158,240	1,687,217
West Virginia	(²)	(²)	(²)	(²)	105,503	78,767	278,826	197,249	27,512	14,719	1,151,986	1,171,377
Wisconsin	(²)	(²)			349,446	151,719	1,992,586	752,209	192,924	38,164	3,620,710	1,307,299
Wyoming			(²)	(²)	(²)	(²)	944,364	358,820	68,692	3,226	1,553,338	587,487
Undistributed ¹	16,087	37,355	326,156	110,616	428,919	531,175	2,754,186	948,515	360,843	104,455	1,537,305	1,588,934
Average value	68,035	92,751 1.36	⁴ 4,486,655	⁴ 1,463,650 0.33	14,065,070	9,803,629 0.70	56,533,469	23,397,380 0.41	⁵ 6,644,483	⁵ 1,823,993 0.27	120,037,897	57,522,076 0.48

¹ Includes noncommercial production.

² Included under "Undistributed."

³ Includes items entered as "(?)."

⁴ Includes 995,783 tons of sand valued at \$184,196 used for railroad ballast; some sand used by railroads and others for fills, bank widening, and stock-car bedding; and some miscellaneous material.

⁵ Includes some gravel used for fills and other purposes. The quantity of gravel reported as used exclusively for railroad ballast was 5,113,862 tons valued at \$1,513,240.

GLASS SAND

Production of glass sand dropped to 1,370,255 short tons valued at \$2,266,564 in 1932, or 18.3 percent in quantity and 18.4 percent in value from 1931. The final figures for production check closely with the preliminary estimate of 1,330,000 short tons.

Glass sand sold or used by producers in the United States, 1928-32

Year	Short tons	Value		Year	Short tons	Value	
		Total	Average			Total	Average
1928.....	2,310,828	\$3,435,645	\$1.49	1931.....	1,677,882	\$2,779,245	\$1.66
1929.....	2,219,677	3,788,471	1.71	1932.....	1,370,255	2,266,564	1.65
1930.....	1,849,101	3,210,973	1.74				

MOLDING SAND

Molding-sand production dropped precipitously from 1931 to 1,118,146 short tons valued at \$1,051,702 in 1932, or 47.7 percent in quantity and 50.4 percent in value. The preliminary estimate of 1,100,000 short tons checks closely with the final figure.

Molding sand sold or used by producers in the United States, 1928-32

Year	Short tons	Value		Year	Short tons	Value	
		Total	Average			Total	Average
1928.....	4,781,765	\$5,089,969	\$1.06	1931.....	2,138,305	\$2,122,049	\$0.99
1929.....	6,195,343	6,410,343	1.03	1932.....	1,118,146	1,051,702	.94
1930.....	3,336,855	3,547,154	1.06				

IMPORTS AND EXPORTS

Sand and gravel imported for consumption in the United States, 1928-32

Year	Short tons	Value	Year	Short tons	Value
1928.....	788,222	\$392,111	1931.....	420,721	\$303,901
1929.....	1,666,387	751,602	1932.....	212,458	164,461
1930.....	1,832,850	719,345			

Sand and gravel imported for consumption in the United States, 1930-32, by classes

Class	1930		1931		1932	
	Short tons	Value	Short tons	Value	Short tons	Value
Glass sand ¹	24,700	\$42,203	35,045	\$76,363	26,574	\$51,016
Other sand.....	² 1,359,254	² 474,174	² 262,198	² 164,238	² 140,793	² 94,728
Gravel.....	448,896	202,968	123,478	63,300	45,091	18,717
	1,832,850	719,345	420,721	303,901	212,458	164,461

¹ Beginning June 18, 1930, classification reads "Sand containing 95 percent silica and not more than 0.6 percent oxide of iron and suitable for manufacture of glass."

² Includes 793,009 tons of "Sand, other than glass," valued at \$252,380, imported June 18 to Dec. 31; not separately recorded prior to change in tariff.

³ Classification reads "Sand, n.s.p.f."

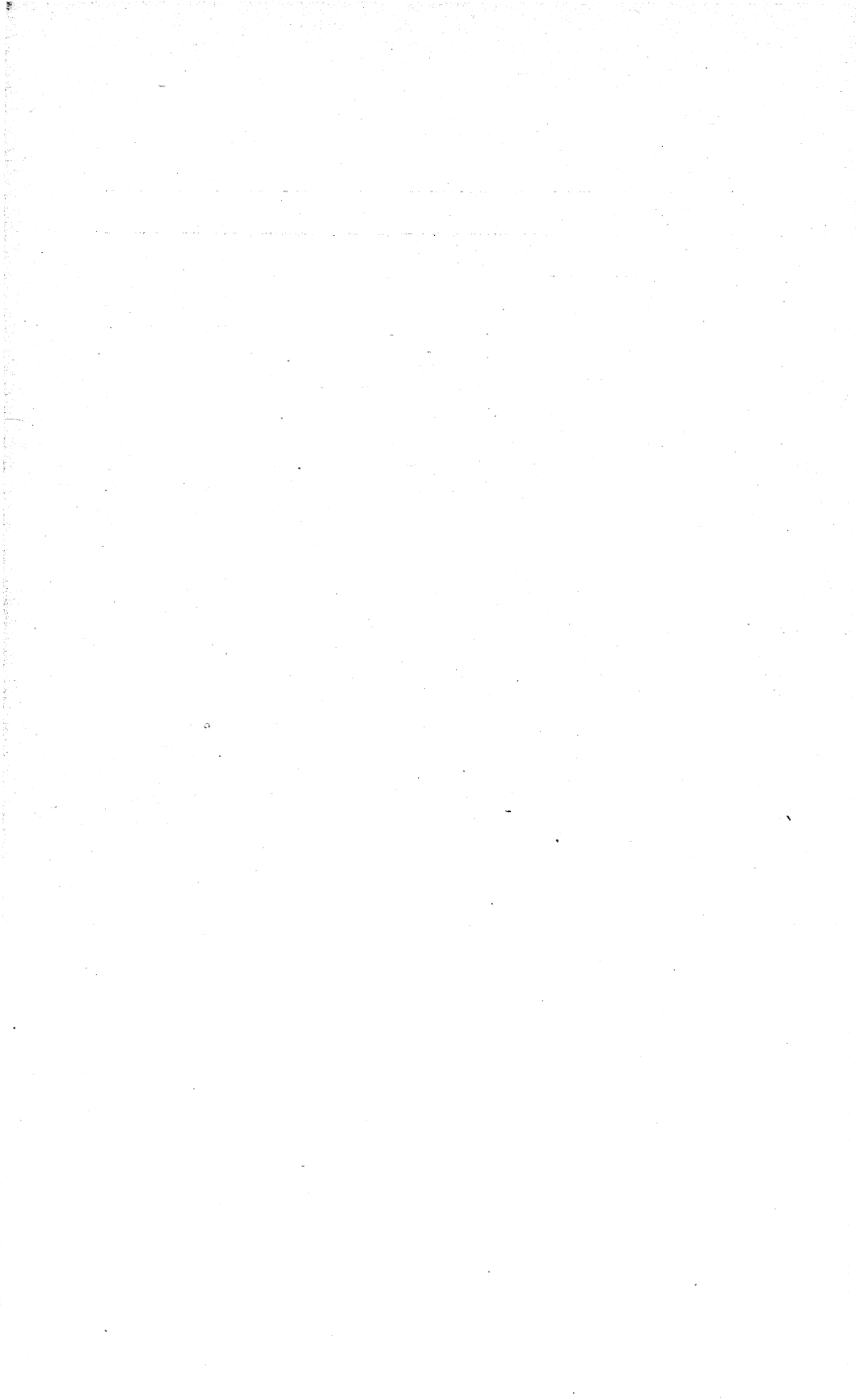
Sand and gravel imported into the United States, 1930-32, by countries

[General imports]

Country	1930		1931		1932	
	Short tons	Value	Short tons	Value	Short tons	Value
North America:						
Canada.....	1,743,093	\$597,477	371,475	\$185,305	166,768	\$65,447
Cuba.....			1	15		
Mexico.....	2,749	1,605	433	391	28	60
Nicaragua.....					2	8
Europe:						
Belgium.....	85,110	99,109	46,849	99,863	35,238	77,249
France.....	980	6,906	703	4,763	9,538	18,417
Germany.....	101	3,826	20	307	294	2,103
Netherlands.....	456	5,116	449	4,885	57	602
United Kingdom.....	183	4,890	791	8,372	11	50
Asia:						
China.....					522	525
India (British).....	167	366				
Japan.....	11	50				
	1,832,850	719,345	420,721	303,901	212,458	164,461

Sand and gravel exported from the United States, 1928-32

Year	Short tons	Value	Year	Short tons	Value
1928.....	737,368	\$638,288	1931.....	217,870	\$418,441
1929.....	486,378	809,831	1932.....	96,015	211,558
1930.....	323,090	570,107			



CRUDE PETROLEUM AND PETROLEUM PRODUCTS

(DETAILED STATISTICS)

By G. R. HOPKINS AND A. B. COONS

SUMMARY TABLES OF CRUDE PETROLEUM, REFINED PRODUCTS, AND NATURAL GASOLINE

Selected statistics of crude petroleum, refined products, and natural gasoline, 1920, 1925, and 1930-32

	1920	1925	1930	1931	1932
Crude petroleum:					
Domestic production.....thousands of barrels ¹ ..	442,929	763,743	898,011	851,081	785,159
World production.....do. ¹	688,884	1,068,933	1,411,905	1,373,656	1,311,377
United States proportion of world production					
percent.....	64	71	64	62	60
Imports.....thousands of barrels ¹ ..	106,175	61,824	62,129	47,250	44,682
Exports ².....do. ¹	9,295	13,337	23,705	25,535	27,393
Stocks, end of period ³.....do. ¹	149,448	431,646	{ 408,809	{ 370,919	{ 339,715
Runs to stills.....do. ¹	433,915	739,920	927,447	894,608	819,997
Total value of domestic production at wells					
thousands of dollars.....	1,360,745	1,284,960	1,070,200	550,630	680,460
Average price per barrel at wells.....	\$3.07	\$1.68	\$1.19	\$0.65	\$0.87
Total producing oil wells in the United States, Dec. 31.....	⁴ 258,600	306,100	331,070	315,850	321,500
Total oil wells completed in the United States during year.....	24,273	16,559	11,640	6,788	10,444
Refined products:					
Imports.....thousands of barrels ¹ ..	2,647	16,376	43,489	38,837	29,812
Exports ⁵.....do. ¹	70,281	100,497	132,794	98,859	75,882
Stocks, end of period ⁶.....do. ¹	60,397	120,492	{ 254,311	{ 247,936	{ 247,188
Output of motor fuel.....do. ¹	118,022	262,252	{ 440,728	{ 437,453	{ 399,712
Yield of gasoline.....percent.....	26.1	32.4	42.0	44.3	44.7
Completed refineries, end of year.....	415	510	435	473	505
Daily crude-oil capacity of refineries					
thousands of barrels ¹ ..	1,889	2,853	3,943	4,015	3,890
Average tank-wagon price (excluding tax) of gasoline in 50 United States cities ⁷.....cents per gallon.....	28.05	17.46	14.49	11.80	12.45
Natural gasoline:					
Production.....thousands of barrels ¹ ..	9,161	26,307	52,631	43,617	36,281
Stocks, end of period.....do. ¹	(⁸)	⁹ 326	{ 4,300	{ 2,818	{ 2,825

¹ Of 42 gallons.

² Includes shipments to Alaska, Hawaii, and Puerto Rico.

³ 1925, California heavy crude and fuel oil included under crude petroleum; 1930-32, California heavy crude and fuel oil included under refined products. Statistics of heavy crude and fuel oil in California not available before June 30, 1923.

⁴ For comparison with succeeding year.

⁵ Oct. 31.

⁶ Revised figures.

⁷ From American Petroleum Institute.

⁸ Not available.

⁹ At plants only—stocks of natural gasoline at refineries not segregated from refined products until Dec. 31, 1929.

300 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Supply and demand of all oils, 1920, 1925, and 1930-32

[Thousands of barrels of 42 gallons]

	1920	1925	1930	1931	1932
New supply:					
Domestic production:					
Crude petroleum	442,929	763,743	898,011	851,081	785,159
Daily average	1,210	2,092	2,460	2,332	2,145
Natural gasoline	9,161	26,307	52,631	43,617	36,281
Benzol	1,771	1,857	2,689	1,826	1,031
Total production	453,861	791,907	953,331	896,524	822,471
Daily average	1,240	2,170	2,612	2,456	2,247
Imports:					
Crude petroleum	106,175	61,824	62,129	47,250	44,682
Refined products	2,647	16,376	43,489	38,837	29,812
Total new supply, all oils	562,683	870,107	1,058,949	982,611	896,965
Daily average	1,537	2,384	2,901	2,692	2,451
Increase in stocks, all oils	27,303	29,291	124,000	144,989	141,792
Demand:					
Total demand	535,330	840,816	1,082,949	1,027,600	938,757
Daily average	1,463	2,304	2,967	2,815	2,565
Exports: ²					
Crude petroleum	9,295	13,337	23,705	25,535	27,393
Refined products	70,281	100,497	132,794	93,859	75,882
Domestic demand	455,804	726,982	926,450	903,206	835,482
Daily average	1,245	1,992	2,538	2,475	2,283
Excess of daily average domestic production over domestic demand	§ 5	178	74	§ 19	§ 36
Stocks, end of period:					
Crude petroleum ⁴	149,448	431,646	{ 408,809 § 411,882	{ 370,919 § 370,194	} 339,715
Natural gasoline	(⁵)	7,326	{ 2,377 § 3,100	{ 2,818 § 2,825		} 3,203
Refined products ⁴	60,397	120,492	{ 254,311 § 251,680	{ 247,936 § 258,879	} 247,188
Grand total stocks, all oils	209,845	552,464	{ 665,497 § 666,662	{ 621,673 § 631,898		} 590,106
Days' supply ⁶	143	240	224	221	230
Bunker oil (included in domestic demand)	26,335	42,827	50,773	43,714	38,152

¹ Decrease.

² Exports include benzol and shipments to Alaska, Hawaii, and Puerto Rico.

³ Deficiency.

⁴ 1925, California heavy crude and fuel oil included under crude petroleum; 1930-32, California heavy crude and fuel oil included under refined products. Statistics of heavy crude and fuel oil in California not available before June 30, 1923.

⁵ For comparison with succeeding year.

⁶ Not available.

⁷ At plants only—stocks of natural gasoline at refineries not segregated from refined products until Dec. 31, 1929.

⁸ Grand total stocks of all oils divided by daily average total demand.

Supply and demand of all oils in 1932, by months

[Including wax, coke, and asphalt, in thousands of barrels of 42 gallons]

	January	February	March	April	May	June	July	August	September	October	November	December	Total
New supply:													
Domestic production:													
Crude petroleum.....	67,014	62,512	67,456	67,915	68,854	65,144	66,655	66,568	65,518	65,598	63,630	58,295	785,159
Daily average.....	2,162	2,156	2,176	2,264	2,221	2,171	2,150	2,147	2,184	2,116	2,121	1,880	2,145
Natural gasoline.....	3,386	3,190	3,240	3,143	3,119	2,855	2,855	2,862	2,836	2,966	2,898	2,931	36,281
Benzol.....	104	101	105	95	86	73	72	69	73	82	85	86	1,031
Total production.....	70,504	65,803	70,801	71,153	72,059	68,072	69,582	69,499	68,427	68,646	66,612	61,312	822,471
Daily average.....	2,274	2,269	2,284	2,372	2,324	2,269	2,245	2,242	2,251	2,214	2,220	1,978	2,247
Imports:													
Crude petroleum.....	2,047	4,707	4,840	7,690	5,089	7,865	1,525	1,862	1,893	2,455	1,963	2,746	44,682
Refined products.....	3,551	3,536	4,025	4,683	2,870	3,760	870	1,506	1,243	1,394	1,210	1,164	29,812
Total new supply, all oils.....	76,102	74,046	79,666	83,526	80,018	79,697	71,977	72,867	71,563	72,495	69,786	65,222	896,965
Daily average.....	2,455	2,553	2,570	2,784	2,581	2,657	2,322	2,351	2,385	2,339	2,326	2,104	2,451
Increase in stocks, all oils.....	1,546	1,009	317	2,712	2,843	10,607	1,145	16,632	18,016	16,056	18,072	19,889	141,792
Demand:													
Total demand.....	76,648	73,037	79,349	80,814	77,175	90,304	70,832	79,499	79,579	78,551	77,858	75,111	938,757
Daily average.....	2,473	2,519	2,560	2,694	2,490	3,010	2,285	2,564	2,653	2,534	2,595	2,423	2,565
Exports:¹													
Crude petroleum.....	1,592	1,897	2,090	2,867	2,942	2,791	2,249	2,839	2,113	2,541	1,318	2,154	27,393
Refined products.....	7,026	5,974	7,037	7,774	8,972	6,956	4,928	5,649	5,784	5,495	5,696	4,591	75,832
Domestic demand:													
Motor fuel.....	26,038	25,378	29,597	31,234	32,016	39,489	30,929	35,706	33,828	32,680	29,895	27,110	373,900
Kerosene.....	2,611	2,714	3,066	3,292	2,814	2,126	1,854	2,278	2,581	3,115	3,621	3,149	33,221
Gas oil and fuel oil.....	30,498	28,413	30,117	25,763	22,695	23,218	20,629	21,244	23,984	24,588	27,621	29,387	308,157
Lubricants.....	1,414	1,190	1,732	1,586	1,535	3,053	1,011	951	932	1,143	1,115	952	16,614
Wax.....	66	145	102	65	50	81	58	61	70	59	65	123	945
Coke.....	983	802	744	325	578	779	707	855	918	1,020	862	1,019	9,592
Asphalt.....	625	614	685	814	1,186	1,429	1,344	1,725	1,322	1,450	729	729	12,652
Road oil.....	27	39	62	160	420	1,215	1,313	1,378	1,067	653	250	64	6,648
Still gas (production).....	3,207	3,029	3,200	3,382	3,664	3,539	3,763	3,626	3,386	3,484	3,311	3,314	40,905
Miscellaneous.....	323	210	214	218	178	187	144	84	87	146	83	104	1,978
Losses and crude as fuel.....	2,238	2,632	703	3,334	125	5,441	1,903	3,103	3,507	2,177	3,292	2,415	30,870
Total domestic demand.....	68,030	65,166	70,222	70,173	65,261	80,557	63,655	71,011	71,682	70,515	70,844	68,366	835,482
Daily average.....	2,195	2,247	2,265	2,339	2,105	2,685	2,053	2,291	2,339	2,275	2,361	2,205	2,283
Stocks:													
Crude petroleum.....	368,302	368,353	371,050	370,981	369,072	363,696	358,308	354,846	354,104	351,893	348,432	339,715	339,715
Natural gasoline.....	2,967	3,513	4,035	4,345	4,270	3,897	3,895	3,695	3,507	3,463	3,054	3,203	3,203
Refined products.....	260,083	260,495	257,593	260,064	264,891	260,033	266,568	263,598	256,512	252,711	248,509	247,188	247,188
Total stocks, all oils.....	631,352	632,361	632,678	635,390	638,233	627,626	628,771	622,139	614,123	608,067	599,995	590,106	590,106

¹ Decrease.

² Exports include benzol and shipments to Alaska, Hawaii, and Puerto Rico.

Runs to stills and production at refineries of the various refined products in 1932, by months

(Thousands of barrels of 42 gallons, except as otherwise indicated)

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Runs to stills:													
Crude petroleum.....	68,715	63,814	68,502	71,131	74,669	72,327	71,455	67,271	63,913	66,698	65,504	65,998	819,997
Natural gasoline ¹	2,397	1,887	1,920	1,998	2,124	2,093	2,072	2,140	2,462	2,594	2,389	2,256	26,332
	71,112	65,701	70,422	73,129	76,793	74,420	73,527	69,411	66,375	69,292	67,893	68,254	846,329
Production:													
Gasoline.....	32,826	31,243	32,392	33,551	35,133	33,884	33,265	32,883	30,908	33,212	32,072	31,254	392,623
Kerosene.....	3,798	3,200	3,525	3,762	4,692	3,523	3,629	3,497	3,449	3,463	3,801	4,097	43,836
Gas oil and distillate fuel oils.....	6,361	5,599	6,353	5,738	5,890	5,207	5,191	5,519	5,665	6,382	5,582	5,980	69,467
Residual fuel oils.....	20,080	17,810	19,558	19,698	19,933	19,090	19,599	17,943	17,544	17,196	18,127	18,705	225,283
Lubricants.....	2,092	1,984	1,946	1,910	2,036	2,290	1,958	1,587	1,648	1,713	1,644	1,625	22,433
Wax.....	156	173	168	131	142	130	113	139	131	112	119	125	1,639
Coke.....	739	721	743	758	813	740	778	766	766	788	748	763	9,123
Asphalt.....	740	735	1,021	1,192	1,415	1,438	1,322	1,308	1,350	1,296	999	796	13,612
Still gas.....	3,207	3,029	3,200	3,382	3,664	3,539	3,763	3,626	3,386	3,484	3,311	3,314	40,905
Wax..... thousands of pounds.....	43,680	48,440	47,040	36,680	39,760	36,400	31,640	38,920	36,680	31,360	33,320	35,000	458,920
Coke..... thousands of short tons.....	144.9	141.4	145.7	148.6	159.4	145.1	152.5	150.2	150.2	154.5	146.7	149.6	1,788.8
Asphalt..... do.....	134.6	133.6	185.6	216.8	257.2	261.4	240.3	237.8	245.5	235.6	181.7	144.8	2,474.9
Still gas..... millions of cubic feet.....	12,622	12,275	12,849	13,389	14,112	13,820	14,598	14,108	13,513	13,551	12,955	13,020	160,812
Road oil.....	154	88	171	367	581	1,228	1,410	1,273	818	470	190	129	6,879
Other finished products.....	244	223	193	198	150	147	112	97	106	82	110	76	1,738
Unfinished oils.....	² 919	² 637	² 637	² 707	³ 1,098	³ 1,150	³ 404	² 1,032	² 1,230	² 442	³ 335	³ 12	² 1,861
Shortage.....	1,634	1,533	1,789	1,735	1,846	1,805	1,983	1,805	1,834	1,536	1,525	1,378	20,652
	71,112	65,701	70,422	73,129	76,793	74,420	73,527	69,411	66,375	69,292	67,893	68,254	846,329

¹Includes quantities blended at refineries and run through pipe lines in California.²Excess of gross unfinished oils rerun over gross unfinished oils produced.³Excess of gross unfinished oils produced over gross unfinished oils rerun.

Crude production, crude runs to stills, and refinery capacity in 1932, by States

State	Crude production		Crude runs to stills		Refinery capacity, Jan. 1, 1933	
	Quantity (thousands of barrels)	Percent of total	Quantity (thousands of barrels)	Percent of total	Total operating (thousands of barrels)	Percent of total
Arkansas.....	12,051	1.5	7,244	0.9	41	1.2
California.....	178,128	22.7	164,737	20.1	783	22.7
Colorado.....	1,136	.1	1,001	.1	6	.2
Georgia.....			15,623	1.9	5	.2
Illinois.....	4,673	.6	28,531	3.5	128	3.7
Indiana.....	806	.1	52,336	6.4	197	5.7
Kansas.....	² 34,858	4.4	² 35,905	4.4	150	4.4
Kentucky.....	³ 6,292	.8	³ 6,332	.8	29	.8
Louisiana.....	21,807	2.8	46,906	5.7	170	4.9
Maryland.....			(1)		55	1.6
Massachusetts.....			13,900	1.8	48	1.4
Michigan.....	6,910	.9	4,292	.5	18	.5
Missouri.....	(2)		(2)		22	.6
Montana.....	2,457	.3	1,569	.2	17	.5
Nebraska.....			(5)		(6)	
New Jersey.....			67,626	8.2	255	7.4
New Mexico.....	⁷ 12,461	1.6	⁸ 2,151	.3	6	.2
New York.....	3,508	.5	9,685	1.2	41	1.2
Ohio.....	4,644	.6	25,552	3.1	98	2.9
Oklahoma.....	153,244	19.5	51,265	6.1	277	8.0
Pennsylvania.....	12,412	1.6	75,143	9.2	246	7.1
Rhode Island.....			(4)		7	.2
South Carolina.....			(1)		6	.2
Tennessee.....	(8)		(3)		(6)	
Texas.....	312,478	39.8	196,578	24.0	769	22.3
Utah.....	(7)		(8)		7	.2
Virginia.....			(1)		2	.1
West Virginia.....	3,876	.5	4,408	.5	18	.5
Wyoming.....	13,418	1.7	⁵ 9,213	1.1	44	1.3
	785,159	100.0	819,997	100.0	3,445	100.0

¹ Georgia includes Maryland, South Carolina, and Virginia.

² Kansas includes Missouri.

³ Kentucky includes Tennessee.

⁴ Massachusetts includes Rhode Island.

⁵ Wyoming includes Nebraska.

⁶ Less than 500 barrels.

⁷ New Mexico includes Alaska and Utah.

⁸ New Mexico includes Utah.

Summary of percentage yields of refined products, 1920, 1925, and 1930-32

[Computed on total crude runs to stills]

	1920	1925	1930	1931	1932
Gasoline ¹	26.8	35.1	46.6	48.2	47.9
Do. ²	26.1	32.4	42.0	44.3	44.7
Kerosene.....	12.7	8.1	5.3	4.7	5.3
Gas oil and distillate fuel oils.....			8.8	9.4	8.5
Residual fuel oil.....	48.6	49.3	31.4	28.3	27.5
Lubricants.....	5.7	4.2	3.7	3.0	2.7
Wax.....	(3)	.3	.2	.2	.2
Coke.....	(3)	.7	1.0	1.2	1.1
Asphalt.....	(3)	2.0	2.0	1.8	1.7
Road oil.....	(3)	(3)	.6	.6	.8
Still gas.....	(3)	(3)	(3)	4.3	5.0
Other finished products.....	(3)	1.1	1.4	.5	.2
Shortage.....	4.3	3.1	4.0	2.1	2.5

¹ Based on total gasoline production.

² Based on total gasoline production less natural gasoline used.

³ Not available.

304 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Comparative analyses of the major refined products, 1920, 1925, and 1930-32

[Thousands of barrels of 42 gallons, except as otherwise indicated]

	1920	1925	1930	1931	1932
Motor fuel:					
Production.....	118,022	262,252	440,728	¹ 437,453	399,712
Imports.....	964	3,813	16,927	13,621	8,205
Exports.....	15,678	31,684	65,575	45,716	35,438
Stocks, end of period.....	11,009	38,918	{ 40,541	{ 42,320	{ 53,805
Domestic demand.....	102,937	226,329	{ 40,098	{ 55,226	{ 373,900
			394,800	403,418	
Kerosene:					
Production.....	55,240	59,689	49,208	42,446	43,836
Imports.....	(²)	19	200	11	71
Exports.....	20,878	21,212	16,884	12,712	11,044
Stocks, end of period.....	9,359	7,121	6,883	5,332	4,974
Domestic demand.....	⁴ 33,082	39,969	34,736	31,296	33,221
Gas oil and fuel oil:					
Production.....	210,987	364,991	372,498	336,967	⁵ 301,353
Imports.....	(²)	12,245	26,080	24,998	21,286
Exports.....	22,080	36,088	36,450	29,231	19,994
Stocks, end of period ⁶	19,938	24,681	137,790	135,856	129,881
Domestic demand.....	⁴ 185,972	(²)	(²)	(²)	308,157
Lubricants:					
Production.....	24,938	31,055	34,201	26,704	22,433
Imports.....	(²)	37	25	32	12
Exports.....	9,643	9,678	9,935	8,128	6,851
Stocks, end of period.....	3,822	7,253	10,971	{ 9,511	{ 8,465
Domestic demand.....	⁴ 14,742	20,581	21,589	{ 20,068	{ 16,614
Wax (thousands of pounds):					
Production.....	541,204	590,577	547,680	477,400	458,920
Imports.....	7,629	14,588	30,402	37,835	33,255
Exports.....	375,276	334,179	292,973	290,527	235,304
Stocks, end of period.....	195,368	116,391	232,592	{ 180,843	{ 163,628
Domestic demand.....	200,651	244,301	242,109	{ 171,220	{ 264,463
				276,457	

¹ Revised figures.

² For comparison with succeeding year.

³ Figures not available.

⁴ Exclusive of imports.

⁵ Includes transfers (see p. 347).

⁶ 1920 and 1925, east of California; 1930-32, California heavy crude and fuel oil included.

Stocks of crude petroleum, natural gasoline, and refined products at the end of the year, 1920, 1925, and 1930-32

[Thousands of barrels of 42 gallons, except as otherwise indicated]

	1920	1925	1930	1931	1932
Crude petroleum:					
East of California:					
At refineries ¹	27, 211	29, 607	41, 136	{ 36, 546 2 35, 821 }	47, 816
Pipe line and tank farm.....	94, 919	264, 245	320, 740	286, 057	246, 356
Producers ²	3, 586	7, 560	6, 608	6, 202	6, 203
Total, east of California.....	125, 716	301, 412	368, 484	{ 328, 805 2 328, 080 }	300, 375
California:					
Light.....	(³)	44, 451	{ 40, 325 2 43, 398 }	42, 114	39, 340
Heavy ⁴	(³)	85, 783	(⁵)	(⁶)	(⁶)
Total, California ⁴	23, 732	130, 234	(⁴)	(⁴)	(⁴)
Total crude petroleum ⁴	149, 448	431, 646	{ 408, 809 2 411, 882 }	{ 370, 919 2 370, 194 }	339, 715
Natural gasoline.....	(³)	326	{ 2, 377 2 3, 100 }	{ 2, 818 2 2, 825 }	3, 203
Refined products:					
Gasoline ⁶	11, 009	38, 918	{ 40, 541 2 40, 098 }	{ 42, 320 2 52, 401 }	50, 602
Kerosene.....	9, 359	7, 121	6, 883	5, 332	4, 974
Gas oil and distillate fuel oil.....	(³)	(³)	16, 390	18, 256	14, 110
Residual fuel oil ⁴	(³)	(³)	{ 124, 038 2 121, 400 }	117, 330	115, 771
Total, gas oil and fuel oil ⁴	19, 938	24, 681	{ 140, 428 2 137, 790 }	135, 856	129, 881
Lubricants.....	3, 822	7, 253	10, 971	{ 9, 511 2 9, 485 }	8, 465
Wax..... thousands of pounds.....	195, 368	116, 391	232, 592	{ 180, 843 2 171, 220 }	163, 628
Coke..... thousands of short tons.....	31. 5	238. 4	1, 069. 1	1, 511. 6	1, 330. 2
Asphalt..... do.....	81. 1	159. 4	307. 8	301. 8	276. 1
Road oil.....			{ 189 2 234 }	333	564
Other finished products.....	9, 569	1, 009	{ 530 2 575 }	{ 785 2 734 }	456
Unfinished oils.....	1, 119	38, 922	{ 46, 793 2 47, 153 }	{ 43, 784 2 44, 757 }	43, 359
Total refined products ^{4 7}	60, 397	120, 492	{ 254, 311 2 251, 680 }	{ 247, 936 2 258, 879 }	247, 188
Grand total.....	209, 845	552, 464	{ 665, 497 2 666, 662 }	{ 621, 673 2 631, 898 }	590, 106

¹ Includes foreign crude held by importers.

² For comparison with succeeding year.

³ Not available.

⁴ 1925, California heavy crude and fuel oil included under crude petroleum; 1930-32, California heavy crude and fuel oil included under refined products as residual fuel oil. Statistics of heavy crude and fuel oil in California begin with June 30, 1923.

⁵ At plants only—stocks of natural gasoline at refineries not segregated from unfinished oils until Dec. 31, 1929.

⁶ 1925, 1930, and 1931, includes stocks of motor blends (not available in 1920); 1931 and 1932 includes gasoline pipeline stock; 1932 includes bulk-terminal stocks.

⁷ Includes equivalents for wax, coke, and asphalt in barrels.

CRUDE

DOMESTIC

Petroleum produced in the United

[Thousands of barrels

Year	New York	Pennsylvania	Ohio	West Virginia	California	Kentucky	Tennessee	Colorado	Indiana	Illinois	Kansas
1859-75	(?)	* 74, 072									
1876	(?)	* 8, 969	32	120	12						
1877	(?)	* 13, 135	30	172	13						
1878	(?)	* 15, 164	38	180	15						
1879	(?)	* 19, 685	29	180	20						
1880	(?)	* 26, 028	39	179	40						
1881	(?)	* 27, 376	34	151	100						
1882	6, 685	23, 368	40	128	129						
1883	4, 004	19, 125	47	126	143	* 5	(?)				
1884	3, 231	20, 541	90	90	262	* 4	(?)				
1885	2, 658	18, 118	662	91	325	* 5	(?)				
1886	2, 151	23, 647	1, 783	102	377	* 5	(?)				
1887	2, 075	20, 281	5, 023	145	678	* 5	(?)	76			
1888	(?)	* 16, 489	10, 011	119	690	* 5	(?)	298			
1889	1, 897	19, 591	12, 472	544	303	* 5	(?)	317	33		1
1890	(?)	* 28, 458	16, 125	493	307	* 6	(?)	369	64	1	1
1891	1, 585	31, 424	17, 740	2, 406	324	* 9	(?)	666	137	1	1
1892	1, 273	27, 149	16, 363	3, 810	385	* 7	(?)	824	698	1	5
1893	1, 032	19, 283	16, 249	8, 446	470	* 3	(?)	594	2, 335	1	18
1894	942	18, 078	16, 792	8, 577	706	* 2	(?)	516	3, 689	(?)	40
1895	913	18, 231	19, 545	8, 120	1, 209	* 2	(?)	438	4, 386	(?)	44
1896	1, 205	19, 379	23, 941	10, 020	1, 253	* 2	(?)	361	4, 681	(?)	114
1897	1, 279	17, 983	21, 561	13, 090	1, 903	(*)	(?)	355	4, 122	1	81
1898	1, 205	14, 743	18, 379	13, 615	2, 257	* 6	(?)	444	3, 731	(?)	72
1899	1, 321	13, 054	21, 142	13, 911	2, 642	* 18	(?)	390	3, 848	(?)	70
1900	1, 301	13, 258	22, 363	16, 196	4, 325	* 62	(?)	317	4, 874	(?)	75
1901	1, 207	12, 625	21, 648	14, 177	8, 787	* 137	(?)	461	5, 757	(?)	179
1902	1, 120	12, 064	21, 014	13, 513	13, 984	* 185	(?)	397	7, 481	(?)	332
1903	1, 163	11, 355	20, 480	12, 900	24, 332	* 554	(?)	484	9, 186		932
1904	1, 113	11, 126	18, 877	12, 645	29, 649	* 998	(?)	501	11, 339		4, 251
1905	1, 118	10, 437	16, 347	11, 578	33, 428	* 1, 217	(?)	376	10, 964	181	* 12, 014
1906	1, 243	10, 257	14, 788	10, 121	33, 099	* 1, 214	(?)	328	7, 674	4, 397	* 21, 718
1907	1, 212	10, 000	12, 207	9, 095	39, 748	* 821	(?)	332	5, 128	24, 282	2, 410
1908	1, 160	9, 424	10, 859	9, 523	44, 855	728		380	3, 283	33, 686	1, 801
1909	1, 135	9, 299	10, 633	10, 745	55, 472	639		311	2, 296	30, 898	1, 264
1910	1, 054	8, 795	9, 916	11, 753	73, 011	469		240	2, 160	33, 143	1, 128
1911	953	8, 248	8, 817	9, 796	81, 134	474		227	1, 695	31, 317	1, 279
1912	874	7, 838	8, 969	12, 129	87, 269	482		206	970	28, 602	1, 593
1913	948	7, 917	8, 781	11, 567	97, 788	525		189	956	23, 894	2, 375
1914	939	8, 170	8, 536	9, 680	99, 775	503		223	1, 336	21, 920	3, 104
1915	888	7, 838	7, 825	9, 265	86, 592	437		208	876	19, 042	2, 823
1916	874	7, 593	7, 744	8, 731	90, 952	1, 202	1	197	769	17, 714	8, 738
1917	880	7, 733	7, 751	8, 379	93, 878	3, 088	12	121	760	15, 777	36, 536
1918	809	7, 408	7, 285	7, 867	97, 532	4, 368	8	143	878	13, 366	45, 451
1919	851	8, 137	7, 736	8, 327	101, 183	9, 278	15	121	972	11, 960	33, 048
1920	906	7, 438	7, 400	8, 249	103, 377	8, 738	14	111	945	10, 774	39, 005
1921	988	7, 418	7, 335	7, 822	112, 600	9, 013	12	108	1, 158	10, 043	36, 456
1922	1, 000	7, 425	6, 781	7, 021	138, 468	8, 973	10	97	1, 087	9, 383	31, 766
1923	1, 250	7, 609	7, 085	6, 358	262, 876	8, 069	8	86	1, 043	8, 707	28, 250
1924	1, 440	7, 486	6, 811	5, 920	228, 933	7, 407	10	445	935	8, 081	28, 836
1925	1, 695	8, 097	7, 212	5, 763	232, 492	6, 759	24	1, 226	829	9, 863	38, 357
1926	1, 956	8, 961	7, 272	5, 946	224, 673	6, 274	43	2, 768	808	7, 760	41, 498
1927	2, 242	9, 526	7, 593	6, 023	231, 196	6, 719	60	2, 831	852	6, 994	41, 069
1928	2, 603	9, 956	7, 015	5, 661	231, 811	7, 359	46	2, 774	1, 052	6, 462	38, 596
1929	3, 377	11, 820	6, 743	5, 574	292, 534	7, 775	19	2, 358	981	6, 319	42, 813
1930	3, 647	12, 803	6, 486	5, 071	227, 329	7, 389	21	1, 656	994	5, 736	41, 638
1931	3, 363	11, 892	5, 327	4, 472	188, 830	6, 456	6	1, 545	840	5, 039	37, 018
1932	3, 508	12, 412	4, 644	3, 876	178, 128	6, 287	5	1, 136	806	4, 673	34, 848
Percentage of total production	0.5	8.5	3.8	2.6	26.1	0.8	3.1	0.2	0.8	2.8	4.5

1 1889-99, Missouri; 1900-1906, Michigan and Missouri; 1907-11, Michigan, Missouri, and Utah; 1912, 1917, 1918, Alaska and Michigan; 1913 and 1919, Alaska, Michigan, Missouri, and New Mexico; 1914-16, Alaska, Michigan, and Missouri; 1920, Alaska, Arkansas, Missouri, New Mexico, and Utah; 1921-23, Alaska, Missouri, and New Mexico; 1924-31, Alaska and Utah; 1932, Alaska, Missouri, and Utah.
 * New York included with Pennsylvania.
 * Tennessee included with Kentucky prior to 1908.

3172
805874

**PETROLEUM
PRODUCTION**

States, 1859-1932, by States
of 42 gallons]

Texas	Okla- homa	Wyo- ming	Michi- gan	Louisi- ana	New Mex- ico	Monta- na	Arkan- sas	Other ¹	Total		
									Quantity	Value at wells	
										Total (thous- ands of dollars)	Aver- age per barrel
									74, 072	215, 781	\$2. 91
									9, 133	22, 983	2. 52
									13, 350	31, 789	2. 38
									15, 397	18, 045	1. 17
									19, 914	17, 211	. 86
									26, 286	24, 601	. 94
									27, 661	25, 448	. 92
									30, 350	23, 631	. 78
									23, 450	25, 700	1. 10
									24, 218	20, 596	. 85
									21, 859	19, 198	. 88
									28, 065	19, 996	. 71
									28, 283	18, 877	. 67
									27, 612	17, 948	. 65
(²)								(³)	35, 164	26, 963	. 77
(⁴)								(⁵)	45, 824	35, 365	. 77
(⁶)	(⁷)							(⁸)	54, 293	30, 527	. 56
(⁹)	(¹⁰)							(¹¹)	50, 515	25, 907	. 51
(¹²)	(¹³)							(¹⁴)	48, 431	28, 950	. 60
(¹⁵)	(¹⁶)		2					(¹⁷)	49, 344	35, 522	. 72
(¹⁸)	(¹⁹)		4					(²⁰)	52, 892	57, 632	1. 09
1	(²¹)	3						(²²)	60, 960	58, 519	. 96
66	1	4						(²³)	60, 476	40, 874	. 68
546		6						(²⁴)	55, 364	44, 193	. 80
669		6						(²⁵)	57, 071	64, 604	1. 13
836	6	6	(²⁶)					(²⁷)	63, 621	75, 989	1. 19
4, 394	10	5	(²⁸)					2	69, 389	66, 417	. 96
18, 084	37	6	(²⁹)	549				1	88, 767	71, 179	. 80
17, 956	139	9	(³⁰)	918				3	100, 461	94, 694	. 94
22, 241	1, 367	12	(³¹)	2, 959				3	117, 081	101, 175	. 86
28, 136	(³²)	8	(³³)	8, 910				3	134, 717	84, 157	. 62
12, 568	(³⁴)	7	(³⁵)	9, 077				3	126, 494	92, 445	. 73
12, 323	43, 524	9	(³⁶)	5, 000				4	166, 095	120, 107	. 72
11, 207	45, 799	18	(³⁷)	5, 789				15	178, 527	129, 079	. 72
9, 534	47, 859	20	(³⁸)	3, 060				6	183, 171	128, 329	. 70
8, 899	52, 029	115	(³⁹)	6, 841				4	209, 557	127, 900	. 61
9, 526	56, 069	187	(⁴⁰)	10, 721				8	220, 449	134, 045	. 61
11, 735	51, 427	1, 572	(⁴¹)	9, 263				4	222, 935	164, 213	. 74
15, 010	63, 579	2, 407	(⁴²)	12, 499	(⁴³)			11	248, 446	237, 121	. 95
20, 068	73, 632	3, 560	(⁴⁴)	14, 309				8	265, 763	214, 125	. 81
24, 943	97, 915	4, 246	(⁴⁵)	18, 192				14	281, 104	179, 463	. 64
27, 645	107, 072	6, 234	(⁴⁶)	15, 248		45		8	300, 767	330, 900	1. 10
32, 413	107, 508	8, 978	(⁴⁷)	11, 392		100		10	335, 316	522, 635	1. 56
38, 750	103, 347	12, 596	(⁴⁸)	16, 043		69		8	355, 928	703, 944	1. 98
79, 366	86, 911	13, 172	(⁴⁹)	17, 188	(⁵⁰)	90		12	378, 367	760, 266	2. 01
96, 868	106, 206	16, 831		35, 714	(⁵¹)	340	(⁵²)	13	442, 929	1, 360, 745	3. 07
106, 166	114, 634	19, 333		27, 103	(⁵³)	1, 509	10, 473	12	472, 183	814, 745	1. 73
118, 684	149, 571	26, 715		35, 376	(⁵⁴)	2, 449	12, 712	13	557, 531	895, 111	1. 61
131, 023	160, 929	44, 785		24, 919	(⁵⁵)	2, 782	36, 610	18	732, 407	978, 430	1. 34
134, 522	173, 538	39, 498		21, 124	98	2, 815	46, 028	13	713, 940	1, 022, 683	1. 43
144, 648	176, 768	29, 173	4	20, 272	1, 060	4, 091	77, 398	12	763, 743	1, 284, 960	1. 68
166, 916	179, 195	25, 776	94	23, 201	1, 666	7, 727	58, 332	8	770, 874	1, 447, 760	1. 88
217, 389	277, 775	21, 307	439	22, 818	1, 226	5, 058	40, 005	7	901, 129	1, 172, 880	1. 30
257, 320	249, 857	21, 461	594	21, 847	943	4, 015	32, 096	6	901, 474	1, 054, 880	1. 17
296, 876	255, 064	19, 514	4, 528	20, 554	1, 830	3, 980	24, 917	7	1, 007, 323	1, 280, 417	1. 27
290, 457	216, 486	17, 868	3, 911	23, 272	10, 189	3, 349	19, 702	7	898, 011	1, 070, 200	1. 19
332, 437	180, 574	14, 834	3, 789	21, 804	15, 227	2, 830	14, 791	7	851, 081	550, 630	. 65
312, 478	153, 244	13, 418	6, 910	21, 807	12, 455	2, 457	12, 051	16	785, 159	680, 460	. 87
3, 012, 700	3, 332, 012	363, 505	20, 269	487, 769	44, 694	43, 706	385, 115	268	14, 784, 723	18, 902, 984	1. 28
20. 4	22. 5	2. 5	0. 1	3. 3	0. 3	0. 3	2. 6	100. 0			

¹ Less than 500 barrels. (See Mineral Resources, 1916, pt. 2, pp. 684-685.)

² Included under "Other."

³ Oklahoma included with Kansas in 1905 and 1906.

⁴ Early production in New York included with Pennsylvania.

⁵ Figures represent 1925-32 production only. Earlier years included under "Other."

⁶ Figures represent 1924-32 production only. Earlier years included under "Other."

Production of crude petroleum by districts and States and daily average production in principal fields and States in 1932, by months
 [Thousands of barrels of 42 gallons]

TOTAL PRODUCTION

	Janu- ary	Febru- ary	March	April	May	June	July	August	Sept- ember	Octo- ber	Nov- ember	Decem- ber	Total	Value at wells ¹
Appalachian:														
New York.....	323	294	303	301	313	307	298	304	277	266	259	263	3,508	6,630
Pennsylvania.....	1,053	972	1,042	1,109	1,122	1,122	1,028	1,055	970	977	964	984	12,412	23,400
West Virginia.....	333	304	325	347	345	356	318	336	306	323	287	296	3,876	6,050
East and southeast Ohio.....	296	304	304	316	321	324	289	304	294	288	280	282	3,579	4,230
Kentucky.....	524	468	518	473	547	535	550	579	648	502	490	463	6,287	5,906
Tennessee.....	1	1	1	1	1	1	1	1	1	1	1	1	5	4
Total Appalachian.....	2,530	2,319	2,492	2,547	2,663	2,644	2,484	2,578	2,496	2,356	2,280	2,278	29,667	46,220
Lima-Indiana:														
Northwestern Ohio.....	83	81	91	98	99	103	91	94	89	85	72	79	1,065	1,200
Northeastern Indiana.....	3	3	3	3	3	3	2	2	2	2	2	2	29	18
Michigan.....	483	423	475	534	592	531	601	644	742	745	594	546	6,910	5,260
Total Lima-Indiana.....	569	506	569	635	694	637	694	740	833	832	668	627	8,004	6,478
Illinois-Indiana:														
Southwest Indiana.....	60	70	66	72	73	75	71	71	62	49	50	49	777	810
Illinois.....	433	415	502	391	450	428	398	407	376	285	299	289	4,673	4,720
Total Illinois-Indiana.....	502	485	568	463	523	503	469	478	438	334	349	338	5,450	5,530
Mid-Continent:														
Kansas.....	3,014	2,774	2,932	2,951	2,973	2,774	2,948	3,039	2,960	2,945	2,846	2,692	34,848	31,720
Oklahoma.....	13,758	12,458	13,361	13,403	13,539	12,636	13,051	12,619	12,051	12,006	11,912	11,850	153,244	137,920
Texas, exclusive of coastal Texas and west Texas.....	17,170	15,979	17,891	18,124	18,147	17,779	18,029	17,860	18,300	18,396	17,517	12,101	207,293	184,740
West Texas.....	5,302	5,340	5,624	5,544	5,468	5,245	5,428	5,319	4,970	5,099	4,938	5,064	63,335	40,860
Southeast New Mexico.....	1,139	1,043	1,119	1,076	1,101	1,031	1,060	948	899	917	912	817	12,062	7,285
Arkansas.....	1,022	998	1,014	1,021	1,073	1,002	1,001	975	1,001	1,031	975	935	12,051	7,690
Northern Louisiana.....	833	779	809	846	875	858	867	886	870	863	863	842	10,191	9,179
Missouri.....	1	1	1	1	1	1	1	1	1	1	1	1	10	9
Total Mid-Continent.....	42,238	39,339	42,751	42,943	43,477	41,626	42,412	41,679	41,052	41,252	39,964	34,301	493,034	419,394
Gulf coast:														
Texas Gulf coast.....	3,259	3,031	3,108	3,152	3,315	3,284	3,472	3,729	3,975	3,797	3,869	3,859	41,850	34,100
Louisiana Gulf coast.....	882	784	855	1,018	1,077	924	975	979	992	1,044	1,047	1,039	11,616	9,380
Total Gulf coast.....	4,141	3,815	3,963	4,170	4,392	4,208	4,447	4,708	4,967	4,841	4,916	4,898	53,466	43,480

Rocky Mountain:	171	210	220	220	227	228	220	222	188	189	163	176	2,457
Montana.....	1,192	1,688	1,174	1,251	1,175	1,050	1,163	1,223	1,087	1,043	1,031	967	13,133
Wyoming.....	1,108	1,104	1,192	1,100	1,100	95	84	84	80	85	84	81	1,186
Colorado.....	31	29	40	30	23	29	37	35	30	38	33	34	1,393
Northwest New Mexico.....			1		1				1				0
Utah and Alaska.....													
Total Rocky Mountain.....	1,502	1,431	1,587	1,633	1,529	1,407	1,521	1,545	1,381	1,355	1,311	1,288	17,410
California.....	15,632	14,617	15,576	15,524	15,576	14,119	14,628	14,840	14,351	14,628	14,142	14,595	178,128
Total United States: 1932.....	67,014	62,517	67,456	67,915	68,854	65,144	68,655	68,588	65,518	65,508	63,630	68,205	785,150
1931.....	65,737	60,540	69,429	72,860	70,822	75,011	78,210	68,014	64,378	73,287	73,466	73,227	851,081
Total Ohio.....	379	362	395	414	420	427	380	398	383	373	352	361	4,644
Total Indiana.....	79	72	60	75	76	78	73	73	64	52	51	51	808
Total Texas.....	25,731	24,350	26,623	26,820	26,930	26,308	26,929	26,908	27,245	27,286	26,324	21,024	312,475
Total Louisiana.....	1,715	1,563	1,664	1,864	1,952	1,782	1,842	1,865	1,862	1,807	1,910	1,881	21,807
Total New Mexico.....	1,170	1,072	1,147	1,116	1,124	1,060	1,097	1,083	933	955	945	851	12,465

DAILY AVERAGE PRODUCTION

California.....	501	504	502	517	502	471	472	479	478	472	471	471	487
Kettleman Hills.....	60	60	60	60	59	60	61	60	59	59	61	60	60
Long Beach.....	79	81	83	82	80	72	71	73	71	68	68	70	75
Santa Fe Springs.....	65	66	66	66	64	60	58	59	59	64	57	56	62
Kansas.....	97	99	95	98	96	92	95	98	99	95	95	96	95
New Mexico.....	38	37	37	37	36	35	35	32	31	31	32	27	34
Robbs.....	32	31	31	31	30	29	29	25	25	25	25	21	28
Oklahoma.....	444	480	431	447	446	431	421	407	402	387	387	352	419
Oklahoma City.....	121	99	112	103	110	95	95	75	75	68	88	73	92
Seminole.....	126	126	126	124	122	117	117	114	112	109	107	107	117
Texas.....	850	840	859	894	869	877	869	868	908	880	877	678	854
East Texas.....	322	312	343	358	345	353	345	334	373	367	359	173	332
Gulf coast.....	105	105	100	105	107	109	112	120	133	122	139	124	114
West Texas.....	171	184	181	185	176	175	175	172	166	164	165	163	173
Wyoming.....	38	38	38	42	38	35	38	39	36	34	34	31	36
Salt Creek.....	23	23	22	22	22	21	21	21	21	21	21	19	22
Other States.....	214	211	214	229	234	230	220	224	230	217	215	204	220
United States: 1932.....	2,162	2,156	2,176	2,264	2,221	2,171	2,160	2,147	2,184	2,116	2,121	1,880	2,145
1931.....	2,121	2,162	2,240	2,429	2,478	2,500	2,523	2,194	2,146	2,364	2,449	2,365	2,332

: Thousands of dollars.

310 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

*Pennsylvania grade crude oil produced, 1924-32, by States*¹

[Thousands of barrels of 42 gallons]

	1924	1925	1926	1927	1928	1929	1930	1931	1932
New York.....	1,440	1,695	1,956	2,242	2,603	3,377	3,647	3,363	3,508
Pennsylvania.....	7,486	8,097	8,961	9,526	9,956	11,820	12,786	11,876	12,396
West Virginia.....	5,920	5,763	5,946	6,023	5,661	5,574	5,068	4,470	3,875
Central and eastern Ohio.....	2,168	2,242	2,011	2,346	2,877	2,654	2,742	2,184	1,741
	17,014	17,797	18,874	20,137	21,097	23,425	24,243	21,893	21,520

¹ Pennsylvania Grade Crude Oil Association, 1924-29.

Production of crude petroleum in Arkansas, 1922-32, by districts

[Thousands of barrels of 42 gallons]

Year	Bradley	Champagnolle	El Dorado	Irma	Lisbon	Mount Holly	Smackover	Stephens	Urbana	Total
1922.....			10,592				2,107	13		12,712
1923.....			5,830	(1)			30,048	1,732		36,610
1924.....			4,760	450			40,000	818		46,028
1925.....			4,247	334			72,144	673		77,398
1926.....	52		2,722	763	2,125		52,063	607		58,332
1927.....	44	(2)	2,433	774	1,054		35,201	499		40,005
1928.....	31	3,522	2,456	536	566		24,569	416		32,096
1929.....	24	2,651	1,987	409	492	(3)	18,991	363		24,917
1930.....	19	1,486	1,424	380	399	34	15,405	319	236	19,702
1931.....	5	944	1,186	266	288	4	11,504	272	322	14,791
1932.....		623	1,182	234	143		9,510	213	146	12,051

¹ Irma included with Stephens.

² Champagnolle included with El Dorado.

³ Mount Holly included with Smackover.

Production of crude petroleum in Arkansas in 1932, by districts and months

[Thousands of barrels of 42 gallons]

District	Petroleum transported from producing properties												Oil consumed on leases plus net change in producers' stocks, Jan. 1-Dec. 31	Production	
	January	February	March	April	May	June	July	August	September	October	November	December			Total
Champagnolle.....	56	57	54	57	56	51	49	54	47	47	48	47	623		623
El Dorado.....	100	96	99	99	101	100	104	100	96	93	96	90	1,174	8	1,182
Irma.....	43	15	15	15	42	13	29	17	21	13	7	4	234		234
Lisbon.....	13	13	13	13	12	12	12	11	11	11	11	11	143		143
Smackover.....	775	748	803	790	842	805	817	812	777	800	765	746	9,480	30	9,510
Stephens.....	19	19	19	21	20	21	17	10	17	17	17	12	209	4	213
Urbana.....	8	14	10	3					26	34	33	18	146		146
Total: 1932..	1,014	962	1,013	998	1,073	1,002	1,028	1,004	995	1,015	977	928	12,009		12,051
1931..	1,539	1,365	1,424	1,378	1,374	1,276	1,129	1,117	1,107	1,083	1,025	969	14,786		15,149

CRUDE PETROLEUM AND PETROLEUM PRODUCTS

311

Production of crude petroleum in California, 1922, 1923, and 1929-32, by counties ¹

[Thousands of barrels of 42 gallons]

County	1922	1923	1929 ²	1930	1931	1932
Fresno.....	9,266	5,061	3,498	3,363	2,992	3,666
Kern.....	53,512	45,953	43,577	44,171	35,794	35,553
Kings.....			1,969	6,176	17,608	21,982
Los Angeles.....	37,726	158,665	182,444	114,533	85,382	³ 78,363
Orange.....	31,049	46,475	25,862	23,114	17,564	16,981
San Luis Obispo.....	⁴ 34	33	(⁵)	(⁵)	53	67
Santa Barbara.....	3,931	3,062	11,142	15,914	11,661	6,659
Santa Clara.....	16	16	⁶ 38	⁷ 75	⁸ 12	13
Ventura.....	2,934	3,611	24,004	19,983	17,245	14,461
	133,468	262,376	292,534	227,329	138,311	177,745

¹ Division of Mines, Department of Natural Resources, California.

² Peak year.

³ Includes San Bernardino.

⁴ Includes San Mateo.

⁵ Included under Santa Clara.

⁶ Includes Colusa and San Luis Obispo.

⁷ Includes Colusa, San Luis Obispo, and Tulare.

⁸ Includes Tulare.

Production of crude petroleum in California in 1932, by districts and months ¹

[Thousands of barrels of 42 gallons]

District	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Brea Olinda.....	279	256	258	250	248	248	253	250	248	242	241	245	3,018
Coalinga.....	227	216	270	314	328	316	343	336	314	332	323	331	3,650
Coyote.....	301	299	322	312	312	298	312	318	305	311	314	312	3,716
Dominguez.....	469	420	619	958	732	453	472	546	516	547	524	568	6,824
Elk Hills.....	392	369	394	379	395	364	379	381	371	372	370	371	4,537
Elwood.....	510	486	509	506	495	419	440	430	416	426	391	414	5,442
Huntington Beach.....	686	643	679	668	691	622	671	687	669	640	623	737	8,016
Inglewood.....	427	402	426	414	424	406	425	418	399	378	368	362	4,869
Kern River.....	305	278	311	301	300	276	281	277	260	266	266	262	3,387
Kettleman Hills.....	1,868	1,735	1,857	1,811	1,825	1,799	1,901	1,869	1,775	1,829	1,846	1,845	21,960
Long Beach.....	2,415	2,360	2,560	2,464	2,489	2,171	2,196	2,250	2,136	2,107	2,109	2,179	27,436
Lost Hills-Belridge.....	301	265	286	279	277	266	265	267	257	292	272	303	3,330
Midway-Sunset.....	1,509	1,431	1,528	1,524	1,546	1,479	1,521	1,521	1,484	1,481	1,440	1,465	17,929
Montebello.....	193	183	198	193	202	190	192	187	181	146	145	153	2,113
Mount Poso.....	254	235	247	238	242	237	248	253	232	249	240	233	2,968
Playa del Rey.....	626	560	567	533	544	465	468	455	432	435	412	414	5,911
Richfield.....	200	178	195	195	190	191	194	192	185	184	178	182	2,264
Rosecrans.....	96	92	97	93	92	89	94	99	93	95	93	93	1,126
Santa Fe Springs.....	2,024	1,920	2,042	1,989	1,978	1,787	1,799	1,822	1,768	1,974	1,704	1,731	22,538
Seal Beach.....	412	374	408	378	402	373	395	382	362	371	325	340	4,522
Torrance.....	193	180	197	193	197	183	197	196	187	191	182	185	2,281
Ventura Avenue.....	1,252	1,135	957	881	936	843	924	979	1,072	1,093	1,097	1,164	12,333
Other.....	593	600	649	651	731	644	658	725	689	667	679	682	7,968
Total: 1932.....	15,532	14,617	15,576	15,524	15,576	14,119	14,628	14,840	14,351	14,628	14,142	14,595	178,128
1931.....	16,486	14,931	16,365	15,804	16,449	15,641	16,093	15,669	15,181	15,652	14,998	15,561	188,830

¹ From American Petroleum Institute.

Production of crude petroleum in Colorado, 1922-32, by districts

[Thousands of barrels of 42 gallons]

Year	Boulder	Florence	Fort Collins ¹	Grease-wood	Hes	Moffat	Rangely	Tow Creek	Total
1922.....	4	70					23		97
1923.....	4	62					20		86
1924.....	4	70					29		445
1925.....	3	97	86			256			1,206
1926.....	2	148	1,222		17	605	32	42	2,788
1927.....	(²)	³ 291	1,260		24	1,199	33	140	2,831
1928.....	(²)	³ 430	1,030		263	670	49	278	2,774
1929.....	(²)	³ 344	824		626	464	434	190	2,358
1930.....	(²)	³ 200	485	(²)	546	436	335	173	1,666
1931.....	(²)	³ 135	355		382	394	47	148	1,505
1932.....	(²)	³ 111	290		391	321	49	121	1,166

¹ Includes Wellington.

² Includes with Rangely.

³ Includes Canon City.

⁴ Includes Boulder and Walden.

⁵ Includes Berthoud, Boulder, and Walden.

⁶ Includes Berthoud, Boulder, Greasewood, and Walden.

312 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Production of crude petroleum in Colorado in 1932, by districts and months

[Thousands of barrels of 42 gallons]

District	Petroleum transported from producing properties												Oil consumed on leases plus net change in producers' stocks, Jan. 1-Dec. 31	Production	
	January	February	March	April	May	June	July	August	September	October	November	December			Total
Florence ¹	9	10	9	11	10	9	10	9	9	9	8	7	110	1	111
Fort Collins ²	24	29	31	25	22	23	26	19	25	23	20	20	239	1	290
Greasewood.....	14	12	11	10	11	9	8	7	8	5	5	5	105	3	108
Les.....	25	22	24	24	25	19	17	18	18	18	20	16	246	—	245
Moffat.....	23	19	24	20	19	23	18	19	19	19	16	20	239	9	248
Rangely ³	3	3	3	2	3	3	3	3	3	3	3	3	33	—	33
Tow Creek.....	9	8	10	9	9	8	8	8	8	8	8	8	101	—	101
Total: 1932.....	107	103	112	101	99	94	90	83	88	84	83	79	1,123	13	1,136
1931.....	134	121	131	125	120	136	132	121	109	139	111	122	1,507	38	1,545

¹ Includes Canon City. ² Includes Wellington. ³ Includes Berthoud, Boulder, and Walden.

Production of crude petroleum in Illinois, 1922-32, by months

[Thousands of barrels of 42 gallons]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1922.....	926	716	880	678	832	792	770	811	753	770	729	726	9,383
1923.....	773	643	807	662	784	739	745	747	696	733	693	685	8,707
1924.....	631	650	734	619	713	691	722	689	684	710	623	615	8,061
1925.....	662	604	728	586	661	665	690	647	667	677	639	637	7,863
1926.....	635	600	729	579	650	662	680	670	657	651	616	631	7,760
1927.....	589	558	698	536	601	602	576	607	577	557	562	531	6,994
1928.....	510	516	635	468	573	550	551	573	506	558	508	514	6,462
1929.....	508	455	603	457	552	517	561	572	532	566	506	490	6,319
1930.....	487	478	532	511	540	513	531	523	409	428	378	406	5,736
1931.....	411	376	374	378	384	456	463	439	437	444	430	447	5,039
1932.....	433	415	502	391	450	428	398	407	376	285	299	289	4,673

Production of crude petroleum in Indiana, 1922-32, by months

[Thousands of barrels of 42 gallons]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Southwestern Indiana.....													
1922.....	70	63	65	68	77	72	74	76	70	74	72	67	848
1923.....	71	60	64	69	73	70	68	70	63	64	62	59	793
1924.....	52	55	52	61	62	58	62	55	54	57	49	49	666
1925.....	56	53	50	58	54	58	59	51	54	54	49	53	649
1926.....	54	55	50	54	57	56	56	54	54	53	56	59	658
1927.....	55	59	55	53	59	60	60	66	63	66	64	66	726
1928.....	70	75	71	75	81	78	81	86	82	88	87	89	963
1929.....	83	81	77	76	78	71	72	75	71	78	78	78	918
1930.....	74	80	77	87	87	85	89	88	69	70	67	68	941
1931.....	70	66	58	66	66	75	72	64	67	67	64	68	803
1932.....	69	70	66	72	73	75	71	71	62	49	50	49	777
Northeastern Indiana.....													
1922.....	18	18	21	18	22	24	21	21	19	21	18	18	239
1923.....	21	16	19	19	19	20	22	25	24	27	18	20	250
1924.....	18	22	24	27	27	26	26	23	22	22	16	16	269
1925.....	15	15	18	18	16	17	17	16	14	12	11	11	180
1926.....	10	13	14	13	13	14	14	14	13	12	9	11	150
1927.....	9	12	12	12	12	13	11	10	10	9	8	8	126
1928.....	7	8	7	8	9	8	7	8	7	8	6	6	89
1929.....	4	4	6	6	6	7	5	5	5	5	5	5	63

Production of crude petroleum in Indiana, 1922-32, by months—Continued

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Northeastern Indiana—Continued.													
1920	4	4	4	5	6	5	5	4	5	5	3	3	53
1921	4	4	3	3	4	3	2	3	3	3	3	2	37
1922	3	2	3	3	3	3	2	2	2	2	2	2	29
Total Indiana:													
1922	88	81	86	86	99	96	95	97	89	95	90	85	1,087
1923	92	76	83	88	92	90	90	95	87	91	80	79	1,043
1924	70	77	76	88	89	84	88	78	76	79	65	65	935
1925	71	68	68	76	70	75	76	67	68	66	60	64	829
1926	64	68	67	67	70	70	70	68	67	65	65	70	808
1927	64	71	67	65	71	73	71	76	73	75	72	74	852
1928	77	83	78	83	90	86	88	94	89	96	93	95	1,062
1929	87	85	83	82	84	78	77	80	76	83	83	83	961
1930	78	84	81	92	93	90	94	92	74	75	70	71	994
1931	74	70	61	69	70	78	74	67	70	70	67	70	840
1932	72	72	69	75	76	78	73	73	64	51	52	51	806

Production of crude petroleum in Kansas, 1922-32, by months

[Thousands of barrels of 42 gallons]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1922	2,698	2,471	2,763	2,632	2,793	2,802	2,624	2,749	2,620	2,629	2,537	2,448	31,766
1923	2,463	2,155	2,549	2,681	2,812	2,595	2,300	2,005	1,821	2,164	2,371	2,334	28,250
1924	2,113	2,131	2,276	2,341	2,513	2,399	2,460	2,678	2,609	2,630	2,431	2,255	28,836
1925	2,455	2,534	2,835	2,942	3,448	3,563	3,613	3,604	3,424	3,458	3,267	3,214	38,357
1926	3,199	2,932	3,248	3,395	3,522	3,624	3,740	3,685	3,498	3,610	3,461	3,584	41,498
1927	3,575	3,342	3,608	3,496	3,586	3,452	3,374	3,357	3,283	3,441	3,277	3,278	41,069
1928	3,362	3,248	3,561	3,422	3,444	3,274	3,283	3,222	2,912	3,073	2,828	2,967	38,596
1929	2,939	2,717	3,093	3,385	3,812	3,795	4,323	4,194	3,963	3,681	3,427	3,484	42,813
1930	3,149	3,103	3,477	3,520	3,948	4,087	3,618	3,414	3,439	3,432	3,252	3,199	41,638
1931	3,102	3,030	3,299	3,195	3,244	2,999	2,862	2,825	3,105	3,114	3,060	3,183	37,018
1932	3,014	2,774	2,932	2,951	2,973	2,774	2,948	3,039	2,960	2,945	2,846	2,692	34,848

Production of crude petroleum in Kansas in 1932, by districts and months¹

[Thousands of barrels of 42 gallons]

District	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Butler:													
Eldorado	188	168	181	175	182	176	158	160	148	150	144	149	1,979
Leon-Weaver	80	71	73	71	77	72	71	69	64	64	60	63	835
Nuttle-Koogler	73	67	72	69	72	69	70	71	66	66	62	65	822
Other	265	243	269	248	269	255	263	261	252	251	237	245	3,048
Cowley:													
Winfield-New Salem	126	117	132	180	159	117	162	166	128	100	99	101	1,587
Other	96	92	95	91	104	99	101	105	96	90	93	94	1,156
Greenwood-Woodson:													
Seeley	141	122	132	126	133	128	139	135	126	130	120	125	1,557
Teeter	88	80	82	78	86	82	83	85	81	82	77	79	983
Virgil	108	102	110	105	114	110	112	119	108	119	113	115	1,335
Other	83	77	81	77	92	86	84	86	81	85	77	79	988
Harvey	5	4	4	5	12	16	42	74	51	51	24	28	316
McPherson:													
Ritz-Canton	395	356	392	355	407	344	367	407	531	463	482	403	4,902
Voshell	288	228	226	243	236	183	209	209	200	226	247	208	2,703
Other	3	3	3	3	12	30	13	14	12	17	16	17	143
Reno	6	6	7	8	15	13	27	41	50	56	47	50	326
Sedgwick:													
Eastborough	220	193	182	177	148	142	114	110	100	95	83	86	1,650
Greenwich	85	72	83	80	96	92	100	103	116	128	117	120	1,340
Wright	130	114	127	122	115	111	109	113	99	100	99	101	1,192
Other	32	32	43	39	37	35	19	25	24	24	23	23	356
Summer	146	140	147	132	157	150	132	133	127	125	122	112	1,623
Other	612	552	612	590	516	527	532	561	511	470	500	515	6,498
	3,170	2,839	3,043	2,974	3,039	2,837	2,907	3,047	2,971	2,892	2,842	2,778	35,339

¹ Monthly estimates by districts from Oil and Gas Journal.

314 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Production of petroleum in Kentucky, 1922-32, by months

[Thousands of barrels of 42 gallons]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1922	700	706.4	779.8	742.2	801	762.1	781.7	791.4	745	762.2	721.4	680	8,973.2
1923	746.3	643.3	675.4	674.4	670	688.3	611.7	736	670.7	685.3	623.3	639.3	8,069
1924	586.4	596.3	636.4	643.4	647.7	611.4	677.4	615.6	625.2	631.6	566.3	569.3	7,407
1925	575.7	544.4	592.4	579.5	580.6	567.2	598.6	556	561.6	552.8	534.2	516	6,759
1926	499	485	531	517	522	526	549	540	532	536	521	516	6,274
1927	509	490	549	540	559	558	586	612	587	588	586	555	6,719
1928	542	558	623	618	653	563	681	662	594	660	608	597	7,359
1929	585	511	560	584	636	547	710	676	722	810	724	710	7,775
1930	665	604	625	643	663	609	676	610	621	608	524	541	7,389
1931	551	525	688	515	477	486	478	461	555	591	615	514	6,456
1932	524	468	518	473	547	535	550	579	648	502	490	453	6,287

Production of crude petroleum in Louisiana, 1922-32, by districts

[Thousands of barrels of 42 gallons]

District	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	
<i>Gulf coast</i>												
Anse la Butte		36	18	12	17	17	17	16	14	9	12	11
Bayou Bouillon								205	72	78	15	
Black Bayou									(1)	177		353
Choctaw											104	146
Egderly		125	157	166	185	207	467	358	245	161	109	63
Gueydan												195
Hackberry							42	1,149	1,783	1,213	1,399	2,149
Iowa												489
Jennings		191	204	213	278	342	299	250	515	495	169	352
Lake Barre									46	388	1,021	2,722
Lake Washington											39	152
Leesville											154	273
Lockport				128	471	1,343	2,038	1,445	1,369	1,131	1,906	989
Port Barre									33	970	450	577
Sorrento								289	110	30	53	13
Starks							262	186	170	206	260	289
Sulphur						(1)	(1)	890	1,374	1,362	567	822
Sweet Lake						(1)	77	661	93	193	459	271
Vinton	1,395	2,071	1,968	2,274	2,215	1,786	1,569	1,484	(1)	1,768	1,940	1,514
White Castle						16	62			300	329	200
Other				2	16	62	35	146		129	97	56
Total Gulf coast	1,747	2,450	2,487	3,227	4,140	5,050	7,053	7,454	8,610	9,560	11,616	
<i>Northern</i>												
Bellevue	1,050	2,351	1,749	1,129	788	472	323	255	233		93	
Caddo	4,498	4,178	4,319	4,067	4,749	5,789	4,798	4,589	4,120	3,054	2,486	
Cotton Valley			1,211	3,348	2,914	1,968	1,731	1,040	880	509	353	
De Soto		531	429	353	305	321	541	463	276	247	192	469
Elm Grove		160	220	217	212	222	222	185	178	172	149	109
Haynesville	19,939	10,496	6,720	4,604	3,328	2,600	2,150	1,806	1,743	1,902	1,534	
Holly										308	189	99
Homr	5,673	3,581	2,837	2,286	2,033	1,785	1,548	1,405	1,278	1,083	1,021	
Pleasant Hill								(3)	178	115	85	
Red River (Bull Bayou, Crichton)	1,778	1,207	1,231	1,074	1,037	1,070	1,109	987	838	713	257	
Sarepta								(2)	4,888	4,259	4,119	
Urania					10	3,669	3,321	2,487	2,155	1,976	1,448	1,208
Zwolle									409	1,801	2,538	2,451
Other			7									
Total northern	33,629	22,469	18,637	17,045	19,061	17,768	14,794	13,100	14,662	12,244	10,191	
	35,376	24,919	21,124	20,272	23,201	22,818	21,847	20,554	23,272	21,804	21,807	

1 Included under "Other."

2 Caddo includes Carterville and Sarepta.

3 Zwolle includes Pleasant Hill.

4 Includes Carterville.

Production of crude petroleum in Louisiana in 1932, by districts and months

[Thousands of barrels of 42 gallons]

District	Petroleum transported from producing properties												Oil consumed on leases plus net change in producers' stocks, Jan. 1-Dec. 31	Production			
	January	February	March	April	May	June	July	August	September	October	November	December			Total		
<i>Gulf coast</i>																	
Black Bayou	41	36	43	33	32	25	28	24	25	24	21	21	353		353		
Choctaw	14	14	15	13	13	12	12	11	10	11	11	10	146		146		
Edgerly	9	6	6	5	6	7	6	5	4	4	3	3	63		63		
Gueydan					2	17	16	22	45	40	27	19	188		195		
Hackberry	122	115	154	249	272	174	178	142	131	168	186	225	2,116	33	2,149		
Iowa	15	15	14	17	37	47	46	46	43	59	67	81	457		459		
Jennings	14	11	9	8	8	16	38	30	40	33	19	16	242	90	332		
Lake Barre	119	128	167	247	263	215	227	246	299	273	270	261	2,715	7	2,722		
Lake Washington	6	10	9	17	16	16	17	16	12	10	11	10	150		152		
Leesville	33	23	27	30	27	24	25	23	25	12	10	15	273		278		
Lockport	140	86	85	84	81	63	66	60	62	95	72	54	948	41	989		
Port Barre	21	20	29	32	34	37	37	62	86	73	75	65	571		577		
Sorrento	2	2	4	3			6						17		13		
Starks	16	17	18	18	19	18	15	19	15	13	60	57	285		289		
Sulphur	124	115	76	74	78	62	60	67	52	48	41	30	827	-5	822		
Sweet Lake	31	25	26	24	21	22	20	21	21	22	14	18	265		271		
Vinton	125	132	135	128	128	127	127	131	120	121	118	118	1,510	4	1,514		
White Castle	22	12	16	20	13	23	13	19	16	12	18	17	201	-1	200		
Other	10	10	3	1	4	1		4			3		45	22	67		
Total Gulf coast:	863	776	836	1,003	1,054	906	940	948	1,008	1,019	1,026	1,023	11,402	214	11,616		
1931	858	815	795	823	863	672	638	690	677	975	857	907	9,570	-10	9,560		
<i>Northern</i>																	
Caddo	197	206	204	212	212	200	202	216	209	217	204	193	2,472	14	2,486		
Cotton Valley	25	29	29	27	35	33	32	33	30	31	26	26	356	-3	353		
De Soto	41	38	42	41	41	40	39	39	37	37	38	36	469		469		
Elm Grove	10	7	7	6	9	6	11	12	11	11	10	9	109		109		
Haynesville	128	132	137	133	140	129	129	139	122	107	125	116	1,537	-3	1,534		
Holly	10	10	9	9	9	9	7	7	9	7	6	7	99		99		
Homer	84	82	86	88	90	88	86	90	83	79	31	86	1,023	-2	1,021		
Pleasant Hill	9	8	6	9	7	7	8	7	7	6	5	6	85		85		
Red River (Bull Bayou, Crichton)	24	22	23	22	22	21	21	21	19	22	19	19	255	2	257		
Sarepta	11	10	11	10	11	11	10	10	8	9	10	8	119		119		
Urania	91	83	105	101	107	110	104	114	100	103	99	91	1,208		1,208		
Zwolle	186	161	158	181	193	201	212	207	226	227	236	235	2,423	28	2,451		
Total northern:	816	788	817	839	876	855	861	895	861	856	859	832	10,155	36	10,191		
1931	1,237	1,204	1,208	1,142	1,161	1,039	916	886	887	894	839	836	12,249	-5	12,244		
Total Louisiana:	1,679	1,564	1,653	1,842	1,930	1,761	1,801	1,843	1,869	1,875	1,885	1,855	21,557	250	21,807		
1931	2,095	2,019	2,003	1,965	2,024	1,711	1,554	1,576	1,564	1,869	1,696	1,743	21,819	-15	21,804		

1 Includes Carterville.

Production of crude petroleum in Michigan, 1925-32, by districts

[Thousands of barrels of 42 gallons]

Year	Mount Pleasant	Muskegon	Saginaw	Vernon	Other	Total
1925			4			4
1926			94			94
1927		(1)	1 439			439
1928	(9)	338	256			594
1929	1,394	3,019	115			4,528
1930	2,599	1,223	89			3,911
1931	2,608	577	59	244	301	3,789
1932	5,796	479	64	322	249	6,910

1 Muskegon included with Saginaw.

2 Department of Conservation, Michigan.

3 Mount Pleasant included with Saginaw.

316 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Production of crude petroleum in Michigan in 1932, by districts and months

[Thousands of barrels of 42 gallons]

District	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Mount Pleasant ¹	404	351	392	465	529	453	504	551	649	574	470	454	5,796
Muskegon ¹	36	29	34	29	35	31	30	38	44	86	44	43	479
Saginaw ¹	6	7	6	6	5	6	5	4	4	6	4	5	64
Other.....	37	36	43	34	23	41	62	51	45	79	76	44	571
Total: 1932.....	483	423	475	534	592	531	601	644	742	745	594	546	6,910
1931.....	267	231	291	263	260	240	287	281	357	405	430	477	3,789

¹ Department of Conservation, Michigan.

Production of crude petroleum in Montana, 1922-32, by districts

[Thousands of barrels of 42 gallons]

Year	Border	Cat Creek	Dry Creek	Elk Basin	Kevin-Sunburst	Lake Basin	Pondera	Other	Total
1922.....		2,333		46	36			34	2,449
1923.....		2,227		28	523			4	2,782
1924.....		1,572		24	1,217			2	2,815
1925.....		1,255		21	2,780	31		4	4,091
1926.....		1,015		19	6,630	63			7,727
1927.....		¹ 779		17	4,214	48			5,058
1928.....		¹ 613		20	3,189	43	150		4,015
1929.....		¹ 497		19	2,378	29	1,057		3,980
1930.....	120	418	15	16	1,998	23	739	20	3,349
1931.....	178	359	164	16	1,557	25	525	6	2,830
1932.....	113	311	195	11	1,337	18	436	36	2,457

¹ Includes small amounts from Bannatyne and Devils Basin.

Production of crude petroleum in Montana in 1932, by districts and months

[Thousands of barrels of 42 gallons]

District	Petroleum transported from producing properties												Oil consumed on leases plus net change in producers' stocks, Jan. 1-Dec. 31	Production
	January	February	March	April	May	June	July	August	September	October	November	December			Total
Border.....	12	17	17	13	10	9	6	6	7	5	6	5	113	113
Cat Creek.....	28	26	27	26	27	25	27	26	24	25	24	24	306	311
Dry Creek.....		12	12	24	31	21	24	25	19	16	3	5	192	195
Kevin-Sunburst.....	104	103	107	126	130	127	130	126	100	100	94	95	1,342	1,337
Pondera.....	23	52	50	42	28	38	35	33	33	32	27	35	428	436
Other.....	3	3	3	2	2	1	4	9	4	3	6	9	49	65
Total: 1932.....	170	213	216	233	228	221	226	225	187	181	160	173	2,433	2,457
1931.....	243	251	255	249	257	243	242	222	244	244	181	207	2,838	2,830

CRUDE PETROLEUM AND PETROLEUM PRODUCTS

317

Production of crude petroleum in New Mexico, 1924-32, by districts

[Thousands of barrels of 42 gallons]

Year	Artesia	Hobbs	Hogback	Lea	Rattlesnake ¹	Total
1924			86		12	98
1925	748		187		125	1,060
1926	1,016		221		427	1,666
1927	682		223	2	382	1,286
1928	410		169	139	295	943
1929	323	(C)	120	899	488	1,830
1930	261	6,525	159	2,782	462	10,189
1931	426	12,788	176	1,490	347	15,227
1932	490	10,287	133	1,345	260	12,455

¹ Includes Bloomfield in 1925; Bloomfield and Table Mesa in 1926; Hospah and Table Mesa in 1929; and Table Mesa in 1930-32.

² Maljamar only.

³ Included with Lea.

⁴ Includes Hobbs, Jal, Maljamar, and other pools in Lea County.

⁵ Includes Jal, Maljamar, and other pools in Lea and Eddy Counties.

Production of crude petroleum in New Mexico in 1932, by districts and months

[Thousands of barrels of 42 gallons]

District	Petroleum transported from producing properties												Oil consumed on leases plus net change in producers' stocks, Jan. 1-Dec. 31	Production	
	January	February	March	April	May	June	July	August	September	October	November	December			Total
Artesia	36	35	39	48	54	43	42	41	35	35	37	37	482	-2	480
Hobbs	994	911	959	926	943	883	913	777	746	775	752	658	10,237		10,237
Hogback	10	6	8	12	12	11	13	13	12	13	12	11	133		133
Lea ¹	104	101	121	105	105	106	108	122	115	115	115	121	1,338	7	1,345
Rattlesnake ²	20	23	19	27	10	18	22	21	23	23	20	22	248	12	260
Total: 1932	1,164	1,076	1,146	1,118	1,124	1,061	1,098	974	931	961	936	849	12,438	17	12,455
1931	1,179	1,072	1,233	1,218	1,370	1,286	1,300	1,326	1,282	1,338	1,308	1,302	15,214	13	15,227

¹ Includes Jal, Maljamar, and other pools in Lea and Eddy Counties.

² Includes Table Mesa.

Production of crude petroleum in New York, 1922-32, by months

[Thousands of barrels of 42 gallons]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1922	77	73	80	78	95	85	85	83	94	85	85	80	1,000
1923	88	76	90	99	106	104	110	105	140	115	105	112	1,250
1924	106	106	117	119	128	118	130	118	133	129	114	122	1,440
1925	125	122	139	134	138	146	150	148	147	152	144	150	1,695
1926	147	141	158	165	156	162	174	167	171	176	158	181	1,956
1927	169	169	195	185	191	189	184	200	192	189	187	192	2,242
1928	185	181	195	192	211	225	200	230	219	249	251	265	2,603
1929	262	240	267	277	295	284	301	285	282	288	281	315	3,377
1930	314	327	369	373	392	326	275	213	263	285	248	262	3,647
1931	251	241	264	269	268	286	275	257	299	324	291	338	3,363
1932	323	294	303	301	313	307	278	304	277	266	259	263	3,508

318 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Production of crude petroleum in Ohio, 1922-32, by months

[Thousands of barrels of 42 gallons]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Central and eastern Ohio:													
1922	365	364	410	375	422	408	389	418	396	415	393	396	4,751
1923	413	349	424	414	434	411	422	421	404	436	403	400	4,931
1924	368	358	393	409	408	391	419	401	411	440	386	409	4,793
1925	409	393	438	447	428	453	458	447	450	460	423	466	5,272
1926	410	406	471	447	438	472	463	464	452	449	449	471	5,392
1927	454	453	536	502	527	512	487	518	492	482	473	448	5,884
1928	445	441	480	455	492	471	462	473	416	466	418	415	5,434
1929	431	388	442	441	456	431	489	430	422	468	423	438	5,259
1930	446	423	436	464	463	450	457	402	417	441	367	408	5,174
1931	391	356	389	375	368	364	313	290	345	355	322	344	4,212
1932	296	281	304	316	321	324	289	304	294	288	280	282	3,579
Northwestern Ohio:													
1922	146	154	177	165	182	182	176	181	170	178	161	158	2,030
1923	173	141	187	177	193	195	188	188	182	190	171	169	2,164
1924	144	159	178	182	183	185	181	169	172	180	141	144	2,018
1925	151	150	165	172	166	181	176	166	165	161	141	146	1,940
1926	147	145	165	158	163	181	169	160	156	154	137	145	1,880
1927	131	144	158	144	149	158	145	149	143	144	123	121	1,709
1928	117	123	138	129	154	149	152	137	122	133	110	117	1,581
1929	104	95	122	119	128	145	159	148	120	129	110	105	1,484
1930	101	112	109	120	123	120	121	107	109	108	86	96	1,312
1931	105	91	93	93	93	100	98	82	95	98	78	89	1,115
1932	83	81	91	98	99	103	91	94	89	85	72	79	1,065
Total Ohio:													
1922	511	518	587	540	604	590	565	599	566	593	554	554	6,781
1923	586	490	611	591	627	606	610	609	586	626	574	569	7,085
1924	512	517	571	591	591	576	600	570	583	620	527	553	6,811
1925	560	543	603	619	594	634	634	613	615	621	564	612	7,212
1926	557	551	636	605	601	653	632	624	608	603	586	616	7,272
1927	585	597	694	646	676	670	632	667	635	626	596	569	7,593
1928	562	564	618	584	646	620	614	610	538	599	528	532	7,015
1929	535	483	564	560	584	576	648	578	542	597	533	543	6,743
1930	547	535	545	584	586	570	578	509	526	549	453	504	6,486
1931	496	447	482	468	461	464	411	372	440	453	400	433	5,327
1932	379	362	395	414	420	427	380	398	383	373	352	361	4,644

Production of crude petroleum in Oklahoma, 1922-32, by months

[Thousands of barrels of 42 gallons]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1922	10,241	10,252	12,208	12,265	13,218	13,171	13,585	13,118	12,527	12,897	12,724	13,365	149,571
1923	12,716	11,988	13,639	14,843	15,818	15,888	14,586	13,058	11,711	11,989	12,508	12,235	160,929
1924	12,109	12,448	13,262	13,850	14,181	14,262	15,041	16,032	16,109	15,713	15,258	15,273	173,538
1925	15,002	13,989	14,776	14,818	14,775	14,684	14,777	14,797	15,228	15,020	14,789	14,113	176,786
1926	13,787	12,706	14,345	14,466	14,924	14,424	14,793	14,844	14,335	15,891	16,829	17,851	179,195
1927	18,596	19,951	22,341	21,407	23,400	23,516	26,810	26,377	24,424	24,704	23,767	22,482	277,775
1928	21,040	19,166	19,980	18,921	19,745	19,009	19,175	21,363	22,796	23,862	22,040	22,760	249,857
1929	22,856	20,235	21,213	20,689	21,803	20,802	22,874	22,805	21,505	20,739	19,249	20,234	255,004
1930	20,276	17,643	19,361	19,919	21,204	19,570	17,967	17,010	16,553	16,882	15,095	15,006	216,486
1931	15,044	14,160	17,088	17,437	18,026	17,683	16,233	9,117	8,414	13,724	16,649	16,999	180,574
1932	13,758	12,458	13,361	13,408	13,839	12,936	13,051	12,619	12,051	12,006	11,912	11,850	153,244

CRUDE PETROLEUM AND PETROLEUM PRODUCTS

319

Production of crude petroleum in Oklahoma in 1932, by districts and months ¹

[Thousands of barrels of 42 gallons]

District	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Allan.....	266	274	280	272	275	268	272	278	266	278	259	267	3,255
Asher.....	132	109	150	143	136	130	129	134	136	149	114	114	1,576
Bowlegs.....	366	364	368	350	363	364	367	368	341	337	304	308	4,200
Bristow, Depew, etc.	265	239	257	249	258	250	258	264	261	270	262	262	3,095
Burbank.....	354	330	336	323	344	337	335	332	321	332	311	319	3,974
Carr City.....	555	525	492	383	361	300	303	296	272	270	243	252	4,252
Chandler.....	130	114	124	117	121	117	120	117	112	115	111	114	1,412
Cromwell.....	153	142	146	142	150	148	162	159	153	160	155	158	1,828
Cushing-Shamrock	370	345	348	352	363	358	370	370	358	379	362	374	4,349
Earlsboro.....	401	251	411	409	420	404	416	410	387	397	363	379	4,648
East Earlsboro.....	374	361	380	366	376	384	410	402	422	473	455	509	4,912
Glenn.....	119	107	134	119	122	117	121	121	116	120	115	117	1,428
Headton.....	329	306	329	316	330	320	332	332	320	330	314	323	3,881
Hewitt.....	165	164	167	166	177	172	176	174	168	175	168	173	2,045
Konawa.....	170	147	158	153	153	152	141	141	137	131	117	114	1,714
Little River.....	549	527	573	514	562	510	548	562	531	529	487	499	6,391
Mission.....	215	201	210	204	216	214	214	204	197	210	188	184	2,457
Nowata County.....	156	146	156	149	153	146	148	147	144	146	142	147	1,780
Oklahoma City.....	3,437	2,436	3,015	3,079	3,165	3,055	3,083	2,988	2,315	2,222	2,256	2,347	33,398
Osage (outside Burbank)	543	480	539	544	587	613	608	584	555	573	549	550	6,725
St. Louis-Pearson.....	581	520	541	560	596	566	604	563	521	547	527	548	6,674
Seminole City.....	350	316	341	337	345	329	338	337	329	332	297	309	3,960
Sholem-Alechem.....	392	360	377	370	383	379	391	368	355	356	297	303	4,331
Tonkawa.....	155	142	152	146	158	157	174	162	150	154	143	144	1,837
Washington County.....	125	117	125	120	121	117	118	118	116	119	114	118	1,428
Wewoka.....	214	203	200	162	172	174	164	154	138	137	128	131	1,977
Other.....	2,798	2,580	2,690	2,673	2,762	2,676	2,729	2,659	2,584	2,675	2,560	2,574	31,960
	13,664	11,806	12,999	12,718	13,169	12,757	13,031	12,744	11,705	11,916	11,341	11,637	149,487

¹ Monthly estimates by districts from Oil and Gas Journal.

Production of crude petroleum in Pennsylvania, 1922-32, by months

[Thousands of barrels of 42 gallons]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1922.....	540	558	629	597	660	638	620	667	628	662	629	597	7,425
1923.....	644	523	667	650	700	655	643	652	608	673	594	605	7,609
1924.....	660	562	626	659	689	638	665	628	639	692	566	583	7,486
1925.....	613	598	684	697	689	700	708	704	701	710	661	667	8,097
1926.....	654	650	726	748	748	777	784	783	772	802	760	757	8,961
1927.....	718	728	842	799	812	824	789	830	805	820	793	766	9,526
1928.....	768	770	842	792	884	836	838	860	795	893	828	850	9,956
1929.....	861	805	913	943	1,020	953	1,037	1,045	972	1,120	1,053	1,110	11,820
1930.....	1,162	1,127	1,217	1,298	1,312	1,109	939	862	911	1,008	946	912	12,808
1931.....	936	850	924	935	942	937	935	941	1,087	1,204	1,072	1,129	11,892
1932.....	1,053	972	1,042	1,109	1,136	1,122	1,028	1,056	970	977	964	984	12,412

Production of crude petroleum and number of producing oil wells in Pennsylvania in 1932, by counties ¹

County	Production (thousands of barrels)	Total number of producing oil wells	County	Production (thousands of barrels)	Total number of producing oil wells
Allegheny.....	250	1,580	McKean.....	8,991	29,518
Armstrong.....	23	249	Mercer.....	14	380
Beaver.....	48	783	Potter.....	8	276
Butler.....	527	5,589	Venango.....	1,027	25,510
Clarion.....	162	2,495	Warren.....	308	6,382
Crawford.....	98	1,232	Washington.....	380	1,768
Elk.....	81	1,259	Westmoreland.....	(?)	-----
Forest.....	94	1,516			
Greene.....	172	760			
Jefferson.....	5	149	Bureau of Mines.....	12,209	80,189
Lawrence.....	21	753		12,412	80,380

¹ Department of Internal Affairs, Pennsylvania.

² Less than 500 barrels from gas wells.

320 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Production of crude petroleum in Tennessee, 1922-32, by months

[Thousands of barrels of 42 gallons]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1922	1	0.6	1.2	0.8	1	0.9	0.3	0.6	1	0.8	0.6	1	9.8
1923	.7	.7	.6	.6	1	.7	.3	1	.3	.7	.7	1.7	8
1924	.6	.7	.6	.6	.3	.6	.6	.4	.8	.4	1.7	2.7	10
1925	.3	.6	.6	1.5	1.4	1.8	1.4	2	1.4	2.2	4.8	6	24
1926	3	4	3	5	4	4	3	2	5	3	4	3	43
1927	5	4	3	4	5	4	5	9	5	6	6	4	68
1928	2	4	5	4	5	2	5	8	4	2	3	2	46
1929	2	2	1	3	2	1	2	2	1	2	1		19
1930	2	1	1	1	2	1	3	3	1	1	3	2	21
1931		2		1	1		1				1		6
1932	1			1	1		1		1				5

Production of crude petroleum in Texas, 1922-32, by districts

[Thousands of barrels of 42 gallons]

District and field	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932
Gulf coast:											
Barbers Hill	(1)	(1)	(1)	(1)	(1)	(1)	(1)	4,552	7,441	7,651	7,320
Batson	434	403	464	432	456	462	550	444	418	330	268
Big Creek	(1)	(1)	293	310	520	1,243	811	1,496	1,390	858	425
Blue Ridge	349	287	278	313	486	1,210	2,205	1,194	644	378	328
Bolling				40	1,176	753	814	580	378	269	188
Buckeye											105
Clay Creek										553	356
Conroe											2,630
Corpus Christi									(1)	152	486
Damon Mound	754	628	520	416	341	312	291	224	224	282	219
Dayton	29	35	36	20	(1)	(1)	(1)	214	406	202	100
Esperson								(1)	519	712	509
Fannette								292	350	180	151
Goose Creek	1,476	1,626	1,397	1,346	1,350	1,102	1,276	2,154	1,690	1,490	1,232
Hankamer								(1)	546	798	691
High Island				121	60	96	163	449	331	255	1,547
Hull	6,546	7,300	7,074	6,944	7,058	5,682	4,055	3,376	3,128	2,264	1,891
Humble	2,284	2,275	2,224	1,864	1,568	1,465	1,242	2,990	5,859	3,022	2,144
Kingsville						146	153	120	41	29	28
Lost Lake								99	209	96	127
Manvel											160
Markham	35	21	66	41	51	109	112	133	(1)	218	516
Moss Bluff										154	38
Nash						207	395	193	110	187	65
Orange	5,345	4,649	3,968	4,816	3,459	1,869	1,415	1,006	790	618	451
Orchard						75	22	44	44	536	495
Pierce Junction	1,020	313	154	265	948	2,954	3,899	5,160	3,847	2,831	1,763
Fort Neches								242	672	503	553
Rabb Ridge										808	4,201
Raccoon Bend						1	98	2,084	3,893	2,704	1,814
Refugio							(1)	1,990	11,485	9,274	3,424
Saratoga	713	626	543	514	482	413	343	333	380	360	326
Sourlake	1,675	1,906	1,588	1,444	2,004	1,593	1,185	946	806	675	570
South Liberty				4,416	1,992	1,084	1,398	2,137	1,503	694	369
Spindletop	289	326	359	412	13,441	20,751	14,150	10,037	6,176	3,301	1,387
Sugarland								390	3,948	4,274	3,487
West Columbia	11,126	5,994	4,536	4,031	3,197	3,291	2,800	2,298	1,827	1,310	1,295
Other	5	32	22	22	115	94	301	617	685	193	200
Total Gulf coast.	35,370	30,821	26,082	29,885	41,135	47,004	39,636	49,652	61,066	48,032	41,850
East Texas:											
East Texas proper										109,561	121,449
Boggy Creek						15	331	1,120	1,133	618	373
Van								144	7,330	15,538	17,201
Other	35	38	59	58	36	(1)	(1)	101	109	69	56
Total east Texas.	35	38	59	58	36	15	331	1,365	8,572	125,846	139,084
Central Texas:											
Darst Creek								243	11,552	8,196	6,094
Luling		2,248	11,134	8,979	7,699	6,169	5,443	4,048	3,692	2,964	2,625
Lytton Springs				2,603	1,783	784	846	600	489	378	323
Mexia	34,790	50,827	49,272	42,353	20,494	12,417	8,353	5,969	4,621	3,201	2,359
Pettus									1,730	2,360	1,715
Rockdale-Chapman	37	247	235	255	635	508	337	251	1,906	1,305	565

See footnotes at end of table.

Production of crude petroleum in Texas, 1922-32, by districts—Continued

[Thousands of barrels of 42 gallons]

District and field	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932
Central Texas—Contd.											
Salt Flat (Bruner)							(⁶)	13,286	7,305	4,372	2,944
Somerset-Medina	672	1,030	1,109	873	781	767	738	659	566	576	518
Other			187	98	52	72	475	447	12	19	17
Total central Texas	35,499	54,352	61,937	55,161	31,354	20,717	15,792	26,003	31,873	23,371	17,050
North Texas ⁷	47,037	43,896	42,487	46,013	49,932	54,806	49,459	52,046	44,301	29,811	26,475
Panhandle ⁸			272	1,132	25,551	40,233	25,286	30,632	31,777	21,851	18,263
Southwest Texas ⁹	733	1,786	2,215	2,688	4,150	3,056	3,276	3,850	4,138	5,002	6,421
West Texas:											
Big Lake		12	1,056	8,900	10,937	8,986	6,753	6,460	7,050	9,444	8,265
Chalk-Roberts ¹⁰	10	118	414	811	1,372	2,437	5,736	15,633	11,999	10,413	7,264
Crane-Upton					2,204	30,607	25,529	16,852	14,451	8,524	7,444
Ector											
Fisher							(¹¹)	418	3,168	2,597	1,657
Hendricks						3,641	62,045	50,179	26,404	15,510	10,998
Loving									663	1,237	1,134
Taylor-Link									461	1,389	502
Ward									453	931	1,761
World					237	516	706	673	693	550	459
Yates					(¹²)	5,329	22,429	41,905	41,338	28,226	23,717
Other					8	22	252	294	112	99	139
Total west Texas	10	130	1,470	9,711	14,758	51,538	123,640	133,328	108,730	78,524	63,335
Total Texas	118,684	131,023	134,522	144,648	166,916	217,389	257,320	296,876	290,457	332,437	312,478

¹ Barbers Hill included with Goose Creek.
² Included under "Other."
³ Joiner, Kilgore, Lathrop, and other pools in Cherokee, Gregg, Rusk, Smith, and Upshur Counties.
⁴ "Other" in East Texas included under "Other" in central Texas.
⁵ Salt Flat included with Luling.
⁶ Includes Corsicana, Nigger Creek, Powell, Richland, Wortham, and smaller fields in Falls, Freestone, Limestone, and Navarro Counties.
⁷ Includes the districts in and between Wilbarger, Wichita, Clay, Montague, and Cooke Counties on the north and Runnels, Coleman, Brown, and Comanche Counties on the south.
⁸ Carson, Gray, Hutchinson, Moore, Potter, and Wheeler Counties.
⁹ Includes fields in Jim Hogg, Webb, and Zapata Counties and Duval County, except salt-dome field at Piedras Pintas.
¹⁰ Includes Westbrook and other small fields in Howard and Mitchell Counties.

Production of crude petroleum in Texas in 1932, by districts and months

[Thousands of barrels of 42 gallons]

District and field	Petroleum transported from producing properties												Total	Oil consumed on leases plus net change in producers' stocks, Jan. 1-Dec. 31	Production
	January	February	March	April	May	June	July	August	September	October	November	December			
Gulf coast:															
Barbers Hill.....	626	566	547	564	625	606	615	620	650	686	568	584	7,257	63	7,320
Batson.....	24	23	18	26	24	23	24	22	20	22	22	20	268		268
Big Creek.....	38	37	39	36	32	33	32	30	39	38	36	35	425		425
Blue Ridge.....	27	27	34	28	27	32	28	22	24	29	26	24	328		328
Boling.....	19	20	19	20	18	19	16	9	12	12	12	12	188		188
Clay Creek.....	18	15	22	28	31	30	43	55	35	36	20	25	358	-2	356
Conroe.....					1	1	14	187	409	477	811	708	2,608	22	2,630
Corpus Christi.....	26	34	38	39	35	29	39	48	50	52	44	49	483	3	486
Damon Mound.....	32	30	26	22	13	15	16	16	5	12	11	16	214	5	219
Dayton.....	9	9	7	13	9	9	9	6	5	5	5	5	91	9	100
Esperson.....	41	37	45	39	39	43	39	52	46	41	34	36	492	17	509
Fannette.....	13	11	13	13	12	12	13	15	15	12	12	9	150	1	151
Goose Creek.....	104	102	105	100	101	106	102	98	110	108	101	100	1,237	-5	1,232
Hankamer.....	56	60	61	56	69	58	54	53	56	56	56	58	691		691
High Island.....	66	44	51	87	137	137	163	186	177	175	156	173	1,552	-5	1,547
Hull.....	142	143	154	161	158	170	140	157	172	160	152	163	1,872	19	1,891
Humble.....	167	165	169	182	197	182	186	179	174	177	182	176	2,136	8	2,144
Kingsville.....	2	2	2	2	2	2	1	3	2	2	3	3	26	2	28
Lost Lake.....	7		14	7	13	17	14	8	15	6	10	11	122	5	127
Manvel.....	12	10	8	11	11	11	12	13	20	16	17	19	160		160
Markham.....	47	41	42	29	41	46	53	45	45	40	43	44	516		516
Moss Bluff.....	5	4	2	3	4	4	3	3	3	1	3	2	37	1	38
Orange.....	40	37	35	43	40	34	39	37	39	35	34	36	449	2	451
Orchard.....	33	34	41	41	36	27	36	53	47	51	48	49	496		496
Pierce Junction.....	150	151	177	156	147	127	132	130	149	142	126	139	1,726	37	1,763
Port Neches.....	31	24	27	41	36	35	50	73	63	48	60	48	536	17	553
Rabb Ridge.....	286	244	248	279	316	379	465	505	536	292	318	328	4,196	5	4,201
Raccoon Bend.....	156	149	155	150	149	147	157	164	151	151	128	157	1,814		1,814
Refugio.....	380	323	302	284	303	280	298	301	272	242	216	228	3,429	-5	3,424
Saratoga.....	29	29	28	30	28	28	26	26	17	34	25	24	324	2	326
Sourlake.....	45	44	46	50	47	48	49	50	56	43	43	44	565	5	570
South Liberty.....	36	34	33	35	33	31	29	31	27	25	24	28	366	3	369
Spindletop.....	154	136	129	125	122	106	115	100	81	112	105	102	1,387		1,387
Sugarland.....	300	298	322	297	310	307	305	310	296	252	239	258	3,494	-7	3,487
West Columbia.....	108	110	115	122	123	118	121	88	109	105	107	104	1,330	20	1,350

Other.....	13	10	9	13	10	6	5	9	20	84	43	30	252	53	305
Total Gulf coast.....	3,242	3,003	3,083	3,132	3,299	3,258	3,443	3,705	3,944	3,779	3,940	3,847	41,575	275	41,850
East Texas:															
East Texas proper.....	9,818	9,090	10,633	10,604	10,628	10,472	10,571	10,267	11,091	11,246	10,688	5,341	120,449	1,000	121,449
Boggy Creek.....	24	28	33	34	32	35	32	35	33	33	31	32	333	-5	378
Van.....	1,324	1,405	1,528	1,467	1,538	1,492	1,552	1,522	1,409	1,349	1,270	1,350	17,206	-5	17,201
Other.....	6	5	5	5	5	6	5	5	4	4	4	3	57	-1	56
Total east Texas.....	11,172	10,528	12,199	12,110	12,203	12,005	12,160	11,829	12,538	12,632	11,993	6,726	138,095	989	139,084
Central Texas:															
Darst Creek.....	473	437	487	571	567	551	574	557	538	492	419	435	6,101	-17	6,084
Luling.....	230	214	229	229	208	206	207	223	208	218	202	225	2,599	26	2,625
Lytton Springs.....	27	27	28	27	28	28	27	28	27	26	27	24	324	-1	323
Mexia ¹	175	169	184	195	199	200	193	198	193	191	194	180	2,271	-12	2,259
Pettus.....	175	206	166	138	136	122	131	130	134	132	127	118	1,715	-----	1,715
Rockdale-Chapman.....	60	54	54	51	49	45	48	44	41	41	37	38	562	3	565
Salt Flat (Bruner).....	244	236	282	282	284	256	247	246	232	222	201	201	2,933	11	2,944
Somerset-Medina.....	51	44	45	49	39	38	41	44	44	41	41	41	518	-----	518
Other.....	-----	1	1	1	-----	1	-----	1	1	1	1	1	9	8	17
Total central Texas.....	1,435	1,388	1,476	1,543	1,510	1,447	1,468	1,471	1,418	1,364	1,249	1,263	17,032	18	17,050
North Texas.....	2,221	2,177	2,253	2,271	2,307	2,182	2,244	2,285	2,146	2,189	2,100	2,100	26,475	-----	26,475
Panhandle.....	1,621	1,443	1,512	1,598	1,581	1,552	1,532	1,647	1,433	1,517	1,471	1,361	18,268	-5	18,263
Southwest Texas.....	522	490	492	483	460	479	512	564	609	625	612	559	6,407	14	6,421
West Texas:															
Big Lake.....	722	842	853	647	654	635	694	727	631	630	631	599	8,265	-----	8,265
Chalk-Roberts ¹	736	741	736	761	665	531	556	532	479	547	460	512	7,256	8	7,264
Crane-Upton.....	615	608	659	676	714	677	708	587	574	512	546	604	7,480	-36	7,444
Ector.....	183	167	201	134	119	119	125	125	120	121	125	126	1,665	-8	1,657
Fisher.....	21	19	20	21	21	12	13	14	13	13	14	17	198	-----	198
Hendricks.....	967	897	985	967	990	942	918	932	858	877	817	838	11,008	-10	10,998
Loving.....	96	88	87	95	99	94	105	100	92	96	92	93	1,137	-3	1,134
Taylor-Link.....	30	26	27	27	28	26	26	25	23	22	19	20	299	-----	299
Ward.....	109	113	119	129	137	142	158	160	158	165	178	190	1,758	3	1,761
World.....	33	32	41	40	42	40	41	42	38	39	33	34	455	4	459
Yates.....	1,788	1,698	1,881	2,026	2,090	2,015	2,082	2,085	1,969	2,069	2,024	2,017	23,744	-27	23,717
Other.....	7	9	6	14	13	13	9	13	12	17	13	13	139	-----	139
Total west Texas.....	5,327	5,240	5,615	5,537	5,572	5,246	5,435	5,342	4,967	5,108	4,952	5,063	63,404	-69	63,335
Total Texas: 1932.....	25,540	24,269	26,630	26,674	26,932	26,169	26,794	26,843	27,055	27,214	26,217	20,919	311,256	1,222	312,478
1931.....	21,024	19,061	22,849	26,750	29,350	29,519	34,203	31,305	28,206	30,964	29,326	28,211	330,798	1,639	332,437

¹ Includes Nash.

² Includes Corsicana, Nigger Creek, Powell, Richland, Wortham, and smaller fields in Falls, Freestone, Limestone, and Navarro Counties.

³ Includes Scurry and Westbrook.

324 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Production of crude petroleum in West Virginia, 1922-32, by months

[Thousands of barrels of 42 gallons]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1922.....	549	565	648	593	548	702	565	606	557	566	542	580	7,021
1923.....	515	472	571	528	582	544	538	559	503	575	477	494	6,358
1924.....	479	481	495	512	508	495	524	488	490	541	441	466	5,920
1925.....	475	446	488	491	477	511	501	476	485	503	486	474	5,763
1926.....	449	440	497	493	490	510	518	504	518	519	489	519	5,946
1927.....	475	474	550	509	518	517	496	523	505	507	484	465	6,023
1928.....	460	460	502	451	519	471	481	489	444	506	444	434	5,661
1929.....	458	403	466	465	492	452	482	477	453	511	454	461	5,574
1930.....	462	443	449	471	475	451	444	355	372	417	350	382	5,071
1931.....	379	346	376	376	373	380	365	347	381	415	352	382	4,472
1932.....	333	304	325	347	345	356	318	336	306	323	287	296	3,876

Production of crude petroleum in Wyoming, 1922-32, by districts

[Thousands of barrels of 42 gallons]

Year	Big Muddy	Byron-Grey-bull-Torch-light	Elk Basin	Fran-nie	Gar-land	Grass Creek	Hamil- ton Dome-Warm Springs	La Barge	Lance Creek	Lander-Dallas-Derby Dome	Lost Sol-dier ¹	Mule Creek
1922....	1,506	70	652	-----	-----	1,784	111	-----	282	149	751	168
1923....	1,527	57	634	-----	-----	1,589	216	-----	363	137	1,551	-----
1924....	1,272	33	409	-----	-----	1,113	239	-----	786	133	1,775	178
1925....	1,223	30	314	-----	-----	1,240	264	-----	360	152	1,746	129
1926....	1,215	(²)	273	-----	-----	1,025	319	70	540	165	2,059	-----
1927....	1,072	28	337	-----	-----	974	313	341	269	246	1,341	188
1928....	962	25	360	-----	-----	871	298	490	217	247	1,442	142
1929....	802	26	285	-----	-----	778	355	805	87	209	1,311	141
1930....	711	49	284	(³)	-----	729	300	747	60	252	1,271	29
1931....	649	3	250	214	-----	746	87	466	94	358	1,349	-----
1932....	610	7	190	161	379	787	308	381	38	375	1,003	2

Year	Notches	Oregon Basin	Osage	Pilot Butte	Poison Spider-South Casper	Rex Lake	Rock Creek	Salt Creek	Teapot	Other	Total
1922.....	-----	-----	182	38	-----	-----	1,728	19,248	37	9	26,715
1923.....	61	-----	178	29	(²)	-----	1,429	35,770	1,156	88	44,785
1924.....	39	-----	146	29	229	41	1,181	30,874	1,004	17	39,498
1925.....	35	-----	109	25	297	20	1,087	21,445	632	65	29,173
1926.....	34	-----	113	20	³ 376	53	1,029	18,010	426	49	25,776
1927.....	24	-----	107	17	247	44	982	14,399	314	64	21,307
1928.....	-----	882	133	19	327	18	928	14,023	-----	77	21,461
1929.....	-----	1,540	166	18	⁴ 446	36	842	11,377	-----	110	19,314
1930.....	-----	1,285	385	16	⁴ 323	6	770	10,520	11	140	17,868
1931.....	-----	393	419	14	⁴ 199	-----	682	8,834	-----	77	14,834
1932.....	-----	130	394	12	-----	-----	477	8,006	-----	67	13,418

¹ Includes Ferris.
² Included under "Other".
³ Includes Iron Creek and Simpson Ridge.
⁴ Includes Simpson Ridge.

Production of crude petroleum in Wyoming in 1932, by districts and months

[Thousands of barrels of 42 gallons]

District	Petroleum transported from producing properties												Total	Oil consumed on leases plus net change in producers' stocks, Jan. 1-Dec. 31	Production
	January	February	March	April	May	June	July	August	September	October	November	December			
Big Muddy	51	43	50	49	53	50	47	50	50	58	53	51	610	-----	610
Elk Basin	20	18	19	21	20	19	16	17	6	-----	16	16	188	-----	190
Frannie	10	-----	34	60	37	2	1	1	1	1	6	8	161	-----	161
Garland ¹	32	35	32	41	41	36	35	34	34	35	28	-----	383	-----	383
Grass Creek	59	59	62	60	63	46	131	120	77	37	45	28	787	-----	787
Hamilton Dome	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Warm Springs	22	18	23	28	29	30	32	39	30	24	20	13	308	-----	308
La Barge	33	29	26	36	34	29	29	26	39	32	34	31	378	-----	381
Lance Creek	3	3	3	4	3	3	3	3	1	3	2	2	33	-----	38
Lander-Dallas	31	28	31	31	35	29	32	33	30	30	31	31	372	-----	375
Lost Soldier-Ferris	91	85	91	79	82	74	69	76	94	88	83	99	1,011	-----	1,003
Oregon Basin	18	18	29	-----	-----	3	2	9	25	22	9	-----	135	-----	130
Osage	32	46	38	32	30	33	33	32	34	31	29	29	399	-----	394
Poison Spider	1	1	3	1	6	8	16	26	12	5	6	6	91	-----	91
Rock Creek	49	47	51	50	51	38	35	33	30	31	30	33	478	-----	477
Salt Creek	681	677	701	733	699	668	681	683	643	625	651	596	8,038	-----	8,006
Other	2	2	1	-----	-----	2	-----	7	32	6	6	6	66	-----	84
Total: 1932	1,135	1,114	1,194	1,225	1,185	1,068	1,169	1,214	1,112	1,028	1,049	945	13,438	-20	13,418
1931	1,346	1,256	1,279	1,340	1,314	1,292	1,241	1,245	1,120	1,102	1,128	1,179	14,842	-8	14,834

¹ Includes Byron.

WORLD PRODUCTION

World production of petroleum in 1932 compared with 1931 and total 1857-1932, by countries

[Compiled by L. M. Jones, of the Bureau of Mines]

Country	1932			1931			1857-1932 ¹	
	Thousands of barrels of 42 gallons ²	Thousands of metric tons	Percentage of total by volume	Thousands of barrels of 42 gallons ²	Thousands of metric tons	Percentage of total by volume	Thousands of barrels of 42 gallons ²	Percentage of total by volume
United States.....	785,159	107,645	59.9	851,081	116,683	62.0	14,784,723	65.1
Russia (U.S.S.R.) ³	155,998	21,396	11.9	162,842	22,335	11.9	2,875,607	12.7
Venezuela.....	116,541	17,085	8.9	116,613	17,192	8.5	750,988	3.3
Rumania.....	54,113	7,350	4.1	49,741	6,756	3.6	486,384	2.2
Persia.....	49,471	6,549	3.8	44,376	5,843	3.2	483,376	2.1
Netherland India.....	39,000	5,093	3.0	35,539	4,698	2.6	551,818	2.4
Mexico.....	32,805	4,842	2.5	33,039	4,941	2.4	1,665,261	7.3
Colombia.....	16,414	2,288	1.2	18,237	2,542	1.3	119,004	.5
Argentina.....	13,013	1,869	1.0	11,709	1,689	.9	95,393	.4
Trinidad.....	10,126	1,425	.8	9,744	1,371	.7	83,691	.4
Peru.....	9,899	1,313	.8	10,989	1,340	.7	140,874	.6
India, British.....	8,566	1,184	.7	8,715	1,204	.6	225,519	1.0
Poland.....	4,116	557	.3	4,662	630	.3	231,941	1.0
British Borneo (Sarawak and Brunei).....	3,796	527	.3	3,854	535	.3	53,717	
Sakhalin, Russian ⁴	2,800	415	.2	2,734	405	.2	9,956	
Egypt.....	1,915	271	.1	2,038	289	.2	25,098	
Japan (including Taiwan).....	1,630	231	.1	1,966	279	.1	64,593	
Germany.....	1,613	230	.1	1,608	229	.1	24,373	
Ecuador.....	1,597	227		1,762	250		8,832	
Canada.....	1,049	133		1,543	195		32,589	1.0
Iraq.....	783	105		900	120		4,441	
France.....	533	75	.3	527	74	.4	7,000	
Italy.....	208	27		124	16		1,811	
Czechoslovakia.....	126	18		134	20		1,505	
Bolivia.....	44	5		25	3		125	
Other countries ⁵	62	9		54	8		1,006	
	1,311,377	180,869	100.0	1,373,656	189,647	100.0	22,729,625	100.0

¹ For detailed statement of petroleum production 1857 to 1930, inclusive, by years and by countries, see Mineral Resources of the United States, 1930, pt. 2, pp. 824-25.

² 1 cubic meter equals 6.29 barrels of 42 gallons.

³ Exclusive of Sakhalin, which is shown separately.

⁴ Production distributed as follows in 1931—Japanese concession 1,836,000 barrels; Russian operators 898,000 barrels. Similar data not available for 1932.

⁵ Partly estimated.

CONSUMPTION AND DISTRIBUTION OF CRUDE PETROLEUM

Summary of demand for crude petroleum, 1925, 1927, and 1929-32

[Thousands of barrels of 42 gallons]

	1925	1927	1929	1930	1931	1932
Production.....	763,743	901,129	1,007,323	898,011	851,081	785,159
Imports.....	61,824	58,333	78,933	62,129	47,250	44,682
Changes in stocks east of California and in stocks of light crude in California.....	-17,835	+64,631	+35,816	-19,636	-40,963	-30,479
Total demand.....	843,402	894,881	1,050,440	979,776	939,294	860,320
Runs to stills.....	739,920	828,835	987,708	927,447	894,608	819,997
Exports ¹	13,337	15,844	26,401	23,705	25,535	27,393
Consumed as fuel on producing properties.....	4,286	2,824	2,021	1,643	1,628	1,701
Consumed as fuel in operation of pipe lines east of California.....	1,825	2,097	1,840	1,621	1,866	1,454
Consumed as fuel, losses, etc.....	84,034	45,281	32,470	25,360	15,657	9,775
Total demand.....	843,402	894,881	1,050,440	979,776	939,294	860,320

¹ Includes shipments to Alaska, Hawaii, and Puerto Rico.

Runs to stills of crude petroleum in 1932, by districts and months

[Thousands of barrels of 42 gallons]

	January	February	March	April	May	June	July	August	September	October	November	December	Total
East coast:													
Domestic.....	10,261	9,807	10,337	9,445	10,106	10,466	10,299	10,061	9,796	10,114	10,740	10,948	122,380
Foreign.....	3,203	3,114	3,047	3,919	4,088	4,110	3,858	3,333	3,061	3,161	2,664	2,506	40,154
Total East coast.....	13,464	12,921	13,384	13,364	14,194	14,576	14,157	13,394	12,857	13,275	13,404	13,544	162,534
Appalachian.....	2,650	2,720	2,899	3,057	3,242	2,955	2,957	2,824	2,618	2,879	2,784	2,571	34,136
Indiana, Illinois, Kentucky, etc.....	8,182	7,986	8,988	9,726	9,507	8,863	9,410	8,829	8,682	9,211	8,933	8,441	106,758
Oklahoma, Kansas, and Missouri.....	7,538	6,718	7,380	7,730	8,009	7,636	7,516	7,458	7,017	6,086	6,449	6,733	87,170
Texas inland.....	3,992	3,884	3,901	4,231	4,477	4,435	4,209	4,163	3,956	4,096	4,166	3,925	49,435
Texas Gulf coast:													
Domestic.....	12,488	10,744	11,899	12,614	14,534	13,044	12,868	11,175	10,824	11,736	11,931	12,304	146,161
Foreign.....	57	25	50	58	54	404	118	47	54	54	7	54	982
Total Texas Gulf coast.....	12,545	10,769	11,949	12,672	14,588	13,448	12,986	11,222	10,878	11,790	11,938	12,358	147,143
Louisiana Gulf coast:													
Domestic.....	3,148	3,118	3,165	3,281	3,433	3,111	3,111	2,831	2,343	2,145	2,525	2,477	34,688
Foreign.....	84	40	139	172	68	109	105	92	99	116	50	91	1,165
Total Louisiana Gulf coast.....	3,232	3,158	3,304	3,453	3,501	3,220	3,216	2,923	2,442	2,261	2,575	2,568	35,853
Arkansas and Louisiana inland	1,623	1,278	1,432	1,524	1,721	1,668	1,422	1,477	1,512	1,612	1,569	1,459	18,297
Rocky Mountain	1,258	1,113	1,073	1,238	1,281	1,050	1,365	1,454	1,071	1,076	1,043	912	13,934
California.....	14,231	13,287	14,192	14,136	14,149	14,476	14,217	13,527	12,880	13,512	12,639	13,487	164,737
Total domestic.....	65,371	60,635	65,266	66,982	70,459	67,704	67,374	63,799	60,699	63,367	62,783	63,257	777,696
Total foreign.....	3,344	3,179	3,236	4,149	4,210	4,623	4,081	3,472	3,214	3,331	2,721	2,741	42,301
Total United States: 1932.....	68,715	63,814	68,502	71,131	74,669	72,327	71,455	67,271	63,913	66,698	65,504	65,998	819,997
1931.....	70,207	65,814	73,651	74,761	78,521	76,187	79,758	80,672	75,094	76,083	71,639	72,721	894,608
Daily average, 1932.....	2,217	2,200	2,210	2,371	2,409	2,411	2,305	2,170	2,130	2,152	2,183	2,129	2,240

Indicated deliveries of crude petroleum to domestic consumers in 1932, by months

[Thousands of barrels of 42 gallons]

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Domestic petroleum, by fields of origin:													
Appalachian:													
Pennsylvania grade.....	1,672	1,575	1,951	1,857	1,824	1,905	1,756	1,810	1,655	1,741	1,684	1,748	21,178
Other (including Kentucky).....	848	550	683	713	712	715	675	844	799	728	618	567	8,452
Lima-northeastern Indiana-Michigan.....	567	467	649	678	869	665	750	763	712	942	731	751	8,544
Illinois-southwestern Indiana.....	316	292	343	356	393	289	216	374	513	331	441	183	4,047
Mid-Continent:													
Northern Louisiana and Arkansas.....	3,319	1,768	1,992	1,956	2,090	2,425	2,593	1,927	2,050	1,972	2,408	2,569	27,069
West Texas-southeastern New Mexico.....	7,216	6,511	6,672	7,826	7,085	7,818	5,981	6,307	4,480	5,410	6,447	6,511	78,264
Other (Oklahoma, Kansas, north Texas, etc.).....	34,233	32,069	34,660	36,414	39,025	36,293	36,562	34,733	34,365	34,408	33,252	33,218	419,227
Gulf coast.....	3,744	4,052	4,226	3,621	4,482	4,423	4,697	4,792	4,786	5,350	5,600	5,511	55,284
Rocky Mountain ¹	1,330	1,135	1,145	1,396	1,229	1,044	1,562	1,463	1,173	1,256	1,167	881	14,781
California.....	15,000	14,269	15,320	15,030	15,066	15,402	14,851	14,341	13,571	14,561	13,133	14,767	175,311
Total demand.....	68,245	62,688	67,641	69,847	72,775	70,979	69,643	67,354	64,104	66,694	65,481	66,706	812,157
Exports ²	1,592	1,897	2,090	2,867	2,942	2,791	2,249	2,839	2,113	2,541	1,318	2,154	27,393
Domestic demand.....	66,653	60,791	65,551	66,980	69,833	68,188	67,394	64,515	61,991	64,153	64,163	64,552	784,764
Foreign petroleum.....	2,493	4,012	1,650	5,621	2,757	6,890	3,615	3,783	3,487	3,132	2,832	2,300	42,572
	69,146	64,803	67,201	72,601	72,590	75,078	71,009	68,298	65,478	67,285	66,995	66,852	827,336

¹ Includes Alaska.

² Includes shipments to Alaska, Hawaii, and Puerto Rico.

STOCKS OF CRUDE PETROLEUM

Stocks of crude petroleum in 1932, by districts and months

[Thousands of barrels of 42 gallons]

	Jan. 1	Jan. 31	Feb. 29	Mar. 31	Apr. 30	May 31	June 30	July 31	Aug. 31	Sept. 30	Oct. 31	Nov. 30	Dec. 31
East of California:													
At refineries, by location of storage:													
East coast:													
Domestic.....	7,709	8,073	8,296	7,694	8,771	8,824	8,817	9,655	9,822	9,269	9,049	8,112	7,604
Foreign.....	3,694	3,157	3,660	6,402	7,613	9,613	11,016	9,149	7,644	6,287	5,788	4,906	5,405
Appalachian.....	1,956	2,001	2,010	2,157	2,274	2,292	2,178	2,216	2,174	2,220	2,220	2,220	2,250
Indiana, Illinois, Kentucky, etc.....	2,828	3,187	3,082	3,051	3,134	3,415	3,449	3,408	3,556	3,529	3,456	3,389	3,443
Oklahoma, Kansas, and Missouri.....	5,537	5,523	5,776	5,558	5,198	5,285	5,461	5,074	4,842	4,520	4,460	4,652	4,580
Texas inland.....	1,954	1,711	1,415	1,328	1,233	1,372	1,640	1,459	1,306	1,345	1,271	1,421	1,490
Texas Gulf coast:													
Domestic.....	6,453	6,438	7,012	6,900	6,663	7,045	7,296	6,846	7,238	6,819	6,163	6,096	5,882
Foreign.....	137	142	237	187	194	567	302	175	128	74	81	136	83
Louisiana Gulf coast:													
Domestic.....	2,427	2,427	2,488	2,530	2,290	2,181	2,590	2,061	2,259	2,307	2,832	2,712	3,298
Foreign.....	663	749	846	1,344	2,195	2,154	1,991	1,895	1,526	1,343	1,168	1,116	1,116
Arkansas and Louisiana inland.....	540	481	464	485	472	403	473	529	667	706	661	561	445
Rocky Mountain.....	1,923	1,952	1,946	1,983	1,719	1,709	1,658	1,586	1,620	1,727	1,783	11,981	12,211
Total at refineries.....	35,821	35,841	37,232	39,619	41,756	44,860	46,871	44,113	42,782	40,146	38,922	47,302	47,816
At refineries, by fields of origin:													
Appalachian:													
Pennsylvania grade.....	1,689	1,776	1,911	1,963	2,021	2,056	2,062	2,121	2,143	2,132	2,153	2,106	2,107
Other Appalachian (including Kentucky).....	690	664	736	778	763	797	829	770	687	642	613	654	623
Lima-northeastern Indiana-Michigan.....	261	215	239	189	256	185	204	212	278	369	241	242	209
Illinois-southwestern Indiana.....	121	147	142	138	131	116	106	116	90	66	63	65	104
North Louisiana and Arkansas.....	1,734	1,497	1,479	1,464	1,171	1,196	1,561	1,289	1,517	1,824	1,923	2,073	2,240
West Texas and southeastern New Mexico.....	3,257	3,567	3,561	3,575	3,119	3,249	3,756	4,086	4,516	4,534	4,241	4,107	3,873
Oklahoma, Kansas, north Texas, etc.....	16,829	16,877	17,711	17,315	17,932	18,611	18,770	18,254	17,629	15,827	15,889	15,280	15,482
Gulf coast.....	5,005	5,292	4,939	4,433	4,764	4,693	4,681	4,522	5,064	5,376	5,039	4,684	4,410
Rocky Mountain.....	1,741	1,758	1,771	1,831	1,597	1,623	1,593	1,524	1,560	1,672	1,733	11,933	12,164
Foreign.....	4,494	4,048	4,743	7,933	10,002	12,334	13,309	11,219	9,298	7,704	7,027	6,158	6,604
Total at refineries.....	35,821	35,841	37,232	39,619	41,756	44,860	46,871	44,113	42,782	40,146	38,922	47,302	47,816

CRUDE PETROLEUM AND PETROLEUM PRODUCTS

Stocks of crude petroleum in 1932, by districts and months—Continued

(Thousands of barrels of 42 gallons)

	Jan. 1	Jan. 31	Feb. 29	Mar. 31	Apr. 30	May 31	June 30	July 31	Aug. 31	Sept. 30	Oct. 31	Nov. 30	Dec. 31
East of California—Continued.													
Pipe-line and tank-farm stocks—by fields of origin:													
Appalachian:													
Pennsylvania grade.....	4,927	5,017	5,010	4,814	4,819	4,917	4,957	4,929	4,936	4,982	4,924	4,932	4,859
Other Appalachian (including Kentucky).....	1,188	1,044	1,036	992	918	874	817	895	869	917	867	840	903
Lima-northeastern Indiana-Michigan.....	1,560	1,608	1,623	1,591	1,480	1,378	1,328	1,265	1,176	1,207	1,224	1,159	1,069
Illinois-southwestern Indiana.....	9,790	9,950	10,147	10,375	10,489	10,634	10,859	11,103	11,233	11,182	11,188	11,094	11,210
North Louisiana and Arkansas.....	16,980	15,737	15,744	15,606	15,787	15,620	14,703	14,279	14,031	13,537	13,345	12,630	11,662
West Texas and southeastern New Mexico.....	35,460	34,400	34,186	34,239	38,490	32,954	30,912	31,105	30,656	32,026	32,947	32,494	32,101
Oklahoma, Kansas, north Texas, etc.....	179,536	179,004	177,604	177,779	175,254	170,459	167,370	165,335	164,716	165,406	164,185	163,763	156,849
Gulf coast.....	13,316	13,433	13,555	13,798	14,024	14,010	13,807	13,697	13,061	12,958	12,787	12,452	12,130
Rocky Mountain.....	23,300	23,402	23,719	24,071	24,515	24,803	25,209	25,245	25,311	25,457	25,478	15,445	15,573
Total pipe line and tank farm.....	286,057	283,595	282,624	283,265	280,776	275,658	269,962	267,853	265,989	267,672	266,945	254,809	246,356
Producers' stocks.....	6,202	6,435	6,186	5,907	5,902	5,817	5,925	5,937	5,926	5,919	6,030	6,057	6,203
Total crude stocks east of California.....	328,080	325,871	326,042	328,791	328,434	326,335	322,758	317,903	314,697	313,737	311,897	308,168	300,375
California: Light.....	42,114	42,431	42,311	42,259	42,547	42,737	40,938	40,405	40,149	40,367	39,996	40,264	39,340
Total United States: 1932.....	370,194	368,302	368,353	371,050	370,981	369,072	363,696	358,308	354,846	354,104	351,893	348,432	339,715
1931.....	411,882	409,227	405,199	401,515	400,439	398,972	397,304	395,195	381,356	370,822	367,171	368,585	370,919
													1 370,194

1 For comparison with 1932.

Distribution of crude petroleum in 1932, by States

[Thousands of barrels of 42 gallons]

State	Production	Im-ports	Receipts from other States		Runs to stills	Ex-ports	Deliveries to other States		Fuel and losses	Change in stocks
			Quantity	State			Quantity	State		
Arkansas.....	12,051	-----	643	Tex.	7,244	-----	5,578	La., Tex.	70	-198
California.....	178,128	-----	-----	-----	164,737	-----	14	Utah.....	6,318	-2,774
Colorado.....	1,136	-----	¹ 1,466	Wyo	1,234	9,833	230	do	115	+10
Georgia.....	-----	285	² 11,456	Tex.	² 14,869	-----	-----	-----	232	+1,108
Illinois.....	4,673	-----	26,574	Ind., Kans., Ky., Okla., Tex.	28,531	-----	802	N.J., Ohio	125	+430
Indiana.....	806	-----	52,969	Kans., La., Okla., Tex.	52,336	-----	800	Ill., Ky., Ohio	200	+400
Kansas.....	34,848	-----	³ 11,765	Okla.	³ 35,905	400	8,754	Ill., Ind., Mo., Ohio, Okla.	³ 300	+1,264
Kentucky and Tennessee.....	6,292	-----	2,016	Ind., Okla.	6,332	18	1,825	Ill., Ohio, W.Va.	40	+93
Louisiana.....	21,807	2,179	33,396	Ark., Okla., Tex.	46,906	234	12,454	Ind., Md., N.J., Pa., Tex.	578	-2,790
Maryland.....	-----	2,410	(²)	La., Okla., Tex.	(²)	-----	-----	-----	(²)	(²)
Massachusetts.....	-----	370	⁴ 13,371	Tex.	⁴ 14,654	-----	-----	-----	⁴ 7	+326
Michigan.....	6,910	-----	2,333	Okla.	4,292	104	3,354	Ohio	1,150	+343
Missouri.....	10	-----	(²)	Kans., Okla.	(²)	-----	-----	-----	(²)	(²)
Montana.....	2,457	14	133	Wyo.	1,569	761	36	Utah	76	-162
New Jersey.....	-----	26,998	41,571	Ill., La., Okla., Pa., Tex., W.Va.	67,626	-----	-----	-----	-----	+943
New Mexico.....	12,455	-----	-----	-----	808	-----	11,703	Pa., Tex., Utah	65	-121
New York.....	3,508	43	6,795	Okla., Pa., Tex.	9,685	3	662	Pa.	40	-44
Ohio.....	4,644	-----	22,915	Ill., Ind., Kans., Ky., Mich., Okla., Pa., W.Va.	25,552	-----	970	Pa., W.Va.	100	+937
Oklahoma.....	153,244	-----	1,437	Kans., Tex.	51,265	7,269	114,980	Ill., Ind., Kans., Ky., La., Md., Mich., Mo., N.J., N.Y., Ohio, Pa., Tex., W.Va.	775	-19,608
Pennsylvania.....	12,412	9,834	57,346	La., N.Mex., N.Y., Ohio, Okla., Tex., W.Va.	75,143	-----	3,984	N.J., N.Y., Ohio	369	+96
Rhode Island.....	-----	556	(⁴)	Tex.	(⁴)	-----	-----	-----	(⁴)	(⁴)
South Carolina.....	-----	858	(²)	-----	(²)	-----	-----	-----	(²)	(²)
Texas.....	312,478	945	23,353	Ark., La., N.Mex., Okla.	196,578	7,680	143,170	Ark., Ga., Ill., Ind., La., Md., Mass., N.J., N.Y., Okla., Pa., R.I., Utah, Va.	2,165	-12,817
Utah and Alaska.....	6	-----	(¹)	Calif., Colo., Mont., N.Mex., Tex., Wyo.	(¹)	-----	-----	-----	(¹)	(¹)
Virginia.....	-----	190	(⁴)	Tex.	(⁴)	-----	-----	-----	(⁴)	(⁴)
West Virginia.....	3,876	-----	3,268	Ky., Ohio, Okla.	4,408	-----	2,923	N.J., Ohio, Pa.	25	-212
Wyoming and Nebraska.....	13,418	-----	-----	-----	9,213	289	1,077	Colo., Mont., Utah	480	+2,359
	785,159	44,682	313,307		819,997	27,393	313,307		12,930	-30,479

¹ Colorado includes Alaska and Utah.

² Georgia includes Maryland and South Carolina.

³ Kansas includes Missouri.

⁴ Massachusetts includes Rhode Island and Virginia.

IMPORTS AND EXPORTS OF CRUDE PETROLEUM

Crude petroleum imported into and exported from continental United States¹ in 1932, by months

[Thousands of barrels of 42 gallons]

	January	February	March	April	May	June	July	August	September	October	November	December	Total		
													Thousands of barrels	Value (thousands of dollars)	
Imports:															
By countries:															
Colombia.....	85	1,670	935	1,929	669	2,180	145	315	578	818	431	795	10,550	11,081	
Mexico.....	572	647	1,084	1,684	730	1,065	61	132	74	327	260	511	7,147	4,618	
Venezuela.....	1,268	2,326	2,755	3,756	3,460	4,541	1,240	1,340	1,164	1,233	1,136	1,409	25,628	13,646	
Other countries.....	122	64	66	321	230	79	79	75	77	77	136	31	1,357	1,068	
	2,047	4,707	4,840	7,690	5,089	7,865	1,525	1,862	1,893	2,455	1,963	2,746	44,682	30,413	
By ports of entry:															
Atlantic coast.....	1,755	4,501	4,250	6,485	4,876	7,426	1,523	1,862	1,893	2,393	1,890	2,681	41,544	28,417	
Gulf coast.....	292	204	587	1,203	210	437	2	2	2	62	64	65	3,124	1,982	
Northern border.....			3	2	3	2							14	14	
	2,047	4,707	4,840	7,690	5,089	7,865	1,525	1,862	1,893	2,455	1,963	2,746	44,682	30,413	
Exports:															
By countries:															
Domestic crude oil:															
Argentina.....			75	68									143	153	
Canada.....	1,127	1,168	1,403	2,151	2,218	1,738	1,593	1,876	1,540	1,405	965	948	18,132	17,182	
Canary Islands.....										74		80	154	160	
Cuba.....		90	73		70								233	289	
France.....	128		67	208	228	680	98	812	265	437	135	346	3,404	3,928	
Japan.....	299	486	477	472	425	295	410	151	307	612	215	728	4,877	4,895	
Spain.....	34			35			71			12		51	203	213	
Other countries.....	1	78	2	1	1	78	77		1		3	1	244	282	
	1,589	1,897	2,090	2,867	2,942	2,791	2,249	2,839	2,113	2,541	1,318	2,154	27,390	27,102	
By ports:															
Atlantic coast.....													3	3	
Gulf coast.....	162	90	209	854	1,009	1,105	620	1,206	819	837	459	323	7,693	8,645	
Mexican border.....	1	78	1	1	1	1	1	67	1	70	1	1	224	252	
Northern border.....	775	809	935	1,082	1,085	944	892	921	664	544	499	492	9,642	9,079	
Pacific coast.....	651	920	945	930	847	741	736	645	629	1,090	359	1,335	9,828	9,116	
	1,589	1,897	2,090	2,867	2,942	2,791	2,249	2,839	2,113	2,541	1,318	2,154	27,390	27,102	
Excess of imports over exports.....	458	2,810	2,750	4,823	2,147	5,074	-724	-977	-220	-86	645	592	17,292	3,311	

¹ Exclusive of Alaska, Hawaii, and Puerto Rico.

PRICES AND VALUES OF CRUDE PETROLEUM

Value of crude petroleum at the wells, 1928-32, by States

[Totals in thousands of dollars; averages in dollars per barrel]

	1928		1929		1930		1931		1932	
	Total	Average	Total	Average	Total	Average	Total	Average	Total	Average
Arkansas.....	27,450	0.86	21,890	0.88	17,390	0.88	7,200	0.49	7,690	0.64
California.....	250,000	.99	321,367	1.10	271,699	1.20	135,960	.72	144,600	.81
Colorado.....	2,750	.99	2,380	1.01	1,480	.89	825	.53	880	.77
Illinois.....	9,980	1.54	10,430	1.65	9,100	1.59	4,500	.89	4,720	1.01
Indiana:										
Southwestern.....	1,470	1.53	1,520	1.66	1,540	1.64	730	.91	810	1.04
Northeastern.....	110	1.24	90	1.43	70	1.32	20	.54	18	.62
Total Indiana.....	1,580	1.50	1,610	1.64	1,610	1.62	750	.89	828	1.03

¹ Division of Mines, Department of Natural Resources, California.

Value of crude petroleum at the wells, 1928-32, by States—Continued

[Totals in thousands of dollars; averages in dollars per barrel]

	1928		1929		1930		1931		1932	
	Total	Average	Total	Average	Total	Average	Total	Average	Total	Average
Kansas.....	52,500	1.36	62,510	1.46	54,880	1.32	25,500	0.69	31,720	0.91
Kentucky.....	11,850	1.61	13,220	1.70	11,080	1.50	5,295	.82	5,906	.94
Louisiana:										
Gulf coast.....	8,150	1.16	9,150	1.23	9,200	1.07	6,370	.67	9,380	.81
Northern.....	17,700	1.20	16,550	1.26	16,910	1.15	7,850	.64	9,170	.90
Total Louisiana.....	25,850	1.18	25,700	1.25	26,110	1.12	14,220	.65	18,550	.85
Michigan.....	920	1.55	6,140	1.36	5,160	1.32	2,840	.75	5,260	.76
Montana.....	6,400	1.59	7,260	1.82	5,420	1.62	2,730	.96	2,560	1.04
New Mexico:										
Northwestern.....	1,280	1.36	2,170	1.19	900	1.45	450	.86	365	.93
Southeastern.....					8,280	.87	6,040	.41	7,285	.60
Total New Mexico.....	1,280	1.36	2,170	1.19	9,180	.90	6,490	.43	7,650	.61
New York.....	8,750	3.36	13,170	3.90	9,850	2.70	6,800	2.02	6,630	1.89
Ohio:										
Central and eastern.....	11,950	2.20	13,200	2.51	10,020	1.94	4,600	1.09	4,230	1.18
Northwestern.....	2,520	1.59	2,570	1.73	1,940	1.48	1,010	.91	1,200	1.13
Total Ohio.....	14,470	2.06	15,770	2.34	11,960	1.84	5,610	1.05	5,430	1.17
Oklahoma.....	347,600	1.39	364,650	1.43	279,250	1.29	119,200	.66	137,920	.90
Pennsylvania.....	32,550	3.27	44,800	3.79	33,410	2.61	23,550	1.98	23,400	1.89
Tennessee.....	70	1.52	30	1.58	26	1.24	5	.83	4	.80
Texas:										
Gulf coast.....	47,120	1.19	59,930	1.21	63,650	1.04	31,620	.66	34,100	.81
East Texas proper.....	(²)		(³)		(³)		50,430	.46	114,200	.94
West Texas.....	80,520	.65	110,780	.83	87,040	.80	37,270	.47	40,860	.65
Rest of State.....	108,660	1.15	151,810	1.33	137,720	1.14	51,630	.54	70,540	.82
Total Texas.....	236,300	.92	322,520	1.09	288,410	.99	170,950	.51	259,700	.83
West Virginia.....	17,150	3.03	20,070	3.60	11,820	2.33	7,070	1.58	6,050	1.56
Wyoming.....	27,400	1.28	24,700	1.28	22,350	1.25	11,120	.75	10,942	.82
Other ³	30	5.00	30	4.29	15	2.14	15	2.14	20	1.25
United States.....	1,054,880	1.17	1,280,417	1.27	1,070,200	1.19	550,630	.65	680,460	.87

² Included with "Rest of State." ³ Alaska and Utah, 1928-31; Alaska, Missouri, and Utah, 1932.

Average monthly prices per barrel for selected grades of crude petroleum at wells in 1932

	Pennsylvania grade		Oklahoma-Kansas, 36°-36.9°	Gulf-coast grade B	Illinois	Lima, Ohio	Panhandle, Texas (Carson and Hutchinson Counties, 35°-35.9°)	West Texas (Crane-Upton, etc.)	California (Long Beach, 27°-27.9°)
	Bradford	South-west Pennsylvania							
January.....	\$1.85	\$1.55	\$0.77	\$0.70	\$0.95	\$1.00	\$0.58	\$0.50	\$0.75
February.....	1.85	1.55	.77	.70	.95	1.00	.58	.50	.75
March.....	1.83	1.55	.77	.70	.95	1.00	.58	.50	.75
April.....	1.86	1.59	.92	.77	1.05	1.10	.65	.60	.75
May.....	2.02	1.75	.92	.80	1.10	1.15	.68	.65	.75
June.....	2.02	1.75	.92	.80	1.10	1.15	.68	.65	.79
July.....	2.02	1.75	.92	.80	1.10	1.15	.68	.65	1.00
August.....	2.02	1.73	.92	.80	1.10	1.15	.68	.65	1.00
September.....	1.93	1.63	.92	.80	1.10	1.15	.68	.65	1.00
October.....	1.73	1.43	.99	.85	1.10	1.15	.68	.65	1.00
November.....	1.72	1.42	1.04	.90	1.10	1.15	.68	.65	1.00
December.....	1.72	1.42	.88	.81	.98	1.07	.60	.57	1.00
	1.88	1.59	.89	.79	1.05	1.10	.65	.60	.88

334 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Posted price per barrel of petroleum at wells in 1932, by grades, with dates of change

Date	Pennsylvania grade		Corning grade in Buckeye Pipe Line Co. lines ²	Western Kentucky ³	Lima, Ohio ³	Illinois and Princeton, Ind. ³	Midland, Mich. ⁴	Kansas-Oklahoma, north and north-central Texas ⁵	
	Bradford and Allegheny districts ¹	In South-west Pennsylvania Pipe Line Co. lines ²						34°-34.9°	36°-36.9°
Jan. 1.....	\$1.85	\$1.55	\$0.85	\$0.90	\$1.00	\$0.95	\$0.55	\$0.73	\$0.77
Mar. 12.....	1.82							.88	.92
Apr. 1.....				1.05	1.15	1.10			
Apr. 11.....		1.75	.95						
Apr. 25.....	2.02								
May 17.....							.65		
June 30.....							.75		
July 13.....							.85		
Aug. 11.....		1.72	1.05						
Sept. 13.....	1.87	1.57							
Oct. 3.....	1.72	1.42	.85						
Oct. 15.....								1.00	1.04
Dec. 15.....								.82	.88
Dec. 16.....				.82	1.00	.87			
Dec. 20.....								.65	.69
Dec. 31.....							.95		
Average for year..	1.88	1.59	.96	1.00	1.10	1.05	.71	.85	.89

Date	Pan-handle, Texas (Carson and Hutchinson Counties 35°-35.9°) ⁸	West Texas ⁸	Hobbs, N.Mex. ⁸	Darst, Tex. ⁸	South-west Texas, Mirando ⁸	Van, Tex. 34°-34.9° ⁴	East Texas ⁷	Gulf coast	
								Conroe, 38°-38.9° ⁶	Grade B, below 25° ⁹
Jan. 1.....	\$0.58	\$0.50	\$0.50	\$0.60	\$0.75	\$0.73	\$0.83		\$0.70
Apr. 1.....		.65	.65	.75	.80	.88	.98		.80
Apr. 11.....	.68							\$0.96	
July 18.....									
Oct. 14.....							1.10		
Oct. 15.....						1.00			.90
Nov. 21.....					.70				
Dec. 15.....	.53	.50	.50	.60	.55	.65		.86	
Dec. 16.....							.75		
Dec. 19.....									10.68
Average for year..	.65	.60	.60	.70	.77	.85	.95	.95	.79

Date	North Louisiana, 34°-34.9° ¹¹	Smack-over, Ark. ¹¹	Salt Creek, Wyo., 36°-36.9° ¹²	Sun-burst, Mont. ³	California ¹³				
					Kettle-man Hills, 38°-38.9°	Long Beach, 27°-27.9°	Midway-Sunset, 19°-19.9°	Playa del Rey, 22°-22.9°	Santa Fe Springs, 33°-33.9°
Jan. 1.....	\$0.73	\$0.55	\$0.77	\$1.00		\$0.75	\$0.55	\$0.67	\$0.83
Apr. 11.....	.88	.65	.92	1.05					
June 26.....					\$1.01	1.00		.78	1.14
Oct. 15.....			1.04						
Nov. 7.....				.75					
Dec. 15.....			.88						
Dec. 16.....	1.59	.30							
Dec. 20.....			.69						
Average for year..	.83	.61	.89	.99	1.01	.88	.55	.73	.99

¹ The Tide-Water Pipe Co., Ltd.
² The Joseph Seep Purchasing Agency.
³ The Ohio Oil Co.
⁴ The Pure Oil Co.
⁵ The Texas Co.
⁶ Humble Oil & Refining Co.
⁷ Magnolia Petroleum Co.
⁸ Gulf Pipe Line Co.

⁹ First posting.
¹⁰ 24°-24.9°
¹¹ Standard Oil Co. of Louisiana.
¹² The Midwest Refining Co.; Stanolind Oil & Gas Co., after Nov. 12.
¹³ Standard Oil Co. of California.
¹⁴ Caddo, 34°-34.9°.

WELLS

Oil and gas wells in 1932

State	Producing oil wells		Wells drilled ¹				
	Approximate number, Dec. 31, 1932	Average production per well per day (barrels)	Oil	Gas	Dry	Total	Estimated average daily initial production per well (barrels)
Arkansas.....	2,880	10.7	4	1	45	50	178
California.....	8,900	54.7	184	(²)	191	375	852
Colorado.....	190	15.9	4	3	18	25	29
Illinois.....	15,170	.8	12	6	29	47	7
Indiana:							
Southwestern.....	1,140	1.9	54	43	72	169	47
Northeastern.....	365	.2		12	9	21	
Total Indiana.....	1,505	1.4	54	55	81	190	47
Kansas.....	18,300	5.1	363	21	188	572	532
Kentucky.....	13,510	1.3	279	58	158	495	57
Louisiana:							
Gulf coast.....	390	83.5	94	1	94	189	963
Northern.....	2,660	10.2	112	38	177	327	334
Total Louisiana.....	3,050	19.1	206	39	271	516	621
Michigan.....	645	29.6	113	11	50	174	647
Montana.....	1,420	4.7	30	6	26	62	302
New Mexico.....	490	74.0	44	4	15	63	3,898
New York.....	17,680	.5	(³)	(³)	(³)	(³)	(³)
Ohio:							
Central and eastern.....	20,640	.5	230	216	200	646	19
Northwestern.....	13,890	.2	49	51	24	124	34
Total Ohio.....	34,530	.4	279	267	224	770	21
Oklahoma.....	57,100	7.4	643	106	381	1,130	1,120
Pennsylvania.....	80,380	.4	3,908	376	382	3,106	33
Texas:							
Gulf coast.....	2,740	42.9	420	28	278	726	780
East Texas proper.....	9,400	51.3	5,641	6	113	5,760	2,500
West Texas.....	3,090	57.0	144	4	61	209	235
Rest of State.....	28,400	8.2	1,037	129	1,272	2,438	198
Total Texas.....	43,630	21.0	7,242	167	1,724	9,133	2,028
West Virginia.....	18,850	.6	46	163	45	254	14
Wyoming.....	3,200	11.1	31	6	24	61	109
Other.....	70		62	38	17	57	268
	321,500	6.7	10,444	2,027	3,569	15,040	1,540

¹ For States east of California, Oil and Gas Journal; for California, American Petroleum Institute.
² California gas wells not reported.
³ New York included with Pennsylvania.
⁴ Based on short gages averaging 30 minutes.
⁵ Alaska, Missouri, Tennessee, and Utah.
⁶ Alabama, Mississippi, and Utah.

Wells drilled for oil and gas in the United States in 1932, by months

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Percentage
Oil.....	642	575	664	792	964	993	1,279	1,145	915	827	855	793	10,444	55
Gas ¹	125	99	94	81	77	66	71	69	71	97	89	88	1,027	16
Dry.....	197	239	245	297	271	325	362	291	368	351	304	319	3,569	29
Total: 1932.....	964	913	1,003	1,170	1,312	1,384	1,712	1,505	1,354	1,275	1,243	1,200	15,040	100
1931.....	1,130	1,065	946	1,064	1,031	1,116	1,014	794	825	1,046	1,288	1,113	12,432	

¹ California dry gas wells not reported.

PRODUCTION AND ROYALTIES FROM WELLS ON FEDERAL AND INDIAN LANDS

Crude petroleum produced on Government lands in 1932, under operation of the Leasing Act of Feb. 25, 1920

[From U.S. Geological Survey]

State and land office	Production (barrels)	Royalty	
		Barrels	Value
California:			
Los Angeles.....	1,991,803.94	162,868.66	\$100,738.71
Sacramento (including Visalia), outside naval reserves.....	12,032,500.78	1,476,623.66	1,354,529.94
Sacramento (including Visalia), inside naval reserves.....	3,878,944.86	955,427.08	642,331.34
	17,903,309.58	2,594,919.40	2,097,599.99
Colorado: Denver.....	422,037.88	29,833.63	20,220.59
Louisiana: Baton Rouge.....	2,951.84	369.01	360.82
Montana:			
Billings.....	279,236.49	16,174.13	27,086.72
Great Falls.....	105,600.67	6,166.77	6,204.61
	384,837.16	22,340.90	33,291.33
New Mexico:			
Las Cruces.....	1,494,912.47	77,679.65	65,660.60
Santa Fe.....	2,509.23	324.02	607.41
	1,497,421.70	78,003.67	66,268.01
Oklahoma: Guthrie.....	211,402.82	24,322.98	23,691.14
Utah: Salt Lake City.....	6,015.83	351.93	441.74
Wyoming:			
Buffalo.....	188,661.14	11,970.32	12,005.80
Cheyenne, outside naval reserves.....	8,436,901.86	1,127,235.24	1,196,139.60
Evanston.....	403,226.94	29,671.14	22,063.65
	9,028,789.94	1,168,876.70	1,230,209.05
	29,456,766.75	3,919,018.22	3,472,082.67

Royalty receipts from production of oil and gas and bonuses paid for sale of leases on Indian reservations, fiscal year ended June 30, 1932

[From Office of Indian Affairs]

Reservation	Oil and gas land leased during year (acres)	Receipts	
		Bonus from sale of leases	Royalty from production
Five Civilized Tribes:			
Oil.....	11,633	\$21,282	\$1,063,064
Gas.....			
Blackfeet.....	340	275	107,048
Cheyenne and Arapahoe: Oil.....	999	1,758	
Isabella.....	40	80	1,029
Kiowa:			
Oil.....			3,116
Gas.....			3,913
Navajo (northern): Oil.....			48,780
Osage:			
Oil.....	7,520	128,314	1,121,350
Gas.....			
Pawnee:			
Oil.....	3,096	14,621	44,940
Gas.....			
Shawnee:			
Oil.....	1,417	10,187	23,016
Gas.....			
Shoshone: Oil.....			1,631
			9,123
	25,045	76,517	2,807,031

¹ Includes deferred payments.

REFINED PRODUCTS

DETAILED STATISTICS, BY PRODUCTS

Comparative analyses of motor fuel in 1932, by months

[Thousands of barrels of 42 gallons]

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Production.....	33,516	32,310	33,487	34,387	35,782	34,227	33,851	33,371	31,199	33,528	32,296	31,758	399,712
Daily average.....	1,081	1,114	1,080	1,146	1,154	1,141	1,092	1,076	1,040	1,082	1,077	1,024	1,092
Imports.....	1,223	1,195	1,126	1,709	1,168	1,209	64	111	62	161	121	56	8,205
Daily average.....	39	41	36	57	38	40	2	4	2	5	4	2	22
Exports.....	3,424	2,848	3,038	3,811	4,610	3,524	2,363	2,365	2,736	2,379	2,387	1,953	35,438
Daily average.....	110	98	98	127	149	117	76	76	91	77	80	63	97
Stocks, end of period.....	60,503	65,782	67,760	68,811	69,135	61,558	62,181	57,592	52,289	50,919	51,054	53,805	53,805
Days' supply.....	64	68	64	59	59	43	58	47	43	45	47	57	48
Domestic demand.....	26,038	25,378	29,597	31,234	32,016	30,489	30,929	35,706	33,828	32,680	29,895	27,110	373,900
Daily average:													
1932.....	840	875	955	1,041	1,033	1,316	998	1,152	1,128	1,054	997	875	1,022
1931.....	852	930	993	1,132	1,165	1,288	1,266	1,273	1,222	1,132	1,018	985	1,105

Production of motor fuel in 1932, by months

[Thousands of barrels of 42 gallons]

	January	February	March	April	May	June
Refinery gasoline:						
Straight run.....	16,250	15,548	16,993	17,922	17,699	17,109
Cracked.....	14,179	13,808	13,479	13,631	15,310	14,682
Natural gasoline:						
Production.....	3,386	3,190	3,240	3,143	3,119	2,855
Deduct losses.....	403	337	330	404	432	492
Benzol.....	104	101	105	95	86	73
Total motor fuel, 1932.....	33,516	32,310	33,487	34,387	35,782	34,227
Daily average, 1932.....	1,081	1,114	1,080	1,146	1,154	1,141
Total motor fuel, 1931.....	32,850	31,355	35,646	36,909	39,021	37,008

	July	August	September	October	November	December	Total
Refinery gasoline:							
Straight run.....	15,988	16,301	14,906	15,915	15,443	15,312	195,386
Cracked.....	15,205	14,442	13,540	14,703	14,240	13,686	170,905
Natural gasoline:							
Production.....	2,855	2,862	2,836	2,966	2,898	2,931	36,281
Deduct losses.....	289	303	156	138	370	257	3,891
Benzol.....	72	69	73	82	85	86	1,031
Total motor fuel, 1932.....	33,851	33,371	31,199	33,528	32,296	31,758	399,712
Daily average, 1932.....	1,092	1,076	1,040	1,082	1,077	1,024	1,092
Total motor fuel, 1931.....	38,123	38,778	37,335	38,113	36,039	36,276	437,453

† Revised figures.

Production and stocks of motor fuel in 1932, by districts

[Thousands of barrels of 42 gallons]

	Production	Stocks †			Production	Stocks †	
		Jan. 1	Dec. 31			Jan. 1	Dec. 31
East coast.....	67,848	13,544	13,643	Louisiana Gulf coast.....	15,039	1,429	1,416
Appalachian	18,343	2,385	2,188	Arkansas and inland Louisiana	8,972	613	360
Indiana, Illinois, Kentucky, etc.	60,390	6,816	6,869	Rocky Mountain.....	8,265	1,549	1,218
Oklahoma, Kansas, and Missouri	55,283	4,870	4,996	California.....	68,336	15,493	15,070
Texas inland.....	32,551	2,366	1,904				
Texas Gulf coast.....	64,685	6,171	6,141		399,712	55,226	53,805

† Includes gasoline stocks at refineries and bulk terminals and in pipe lines; also stocks of natural gasoline wherever held.

Production and stocks of gasoline in 1932, by districts and months

[Thousands of barrels of 42 gallons]

	Janu- ary	Febru- ary	March	April	May	June	July	August	Sept- ember	Octo- ber	No- vember	De- cember	Total
Production:													
East coast.....	5,928	5,781	5,736	5,354	5,743	5,792	5,711	5,650	5,169	5,334	5,893	6,170	68,261
Appalachian.....	1,359	1,406	1,484	1,501	1,586	1,414	1,461	1,359	1,273	1,504	1,388	1,287	17,022
Indiana, Illinois, Kentucky, etc.....	4,613	4,667	5,148	5,506	5,558	5,221	5,389	5,465	5,195	5,422	5,230	4,483	61,897
Oklahoma, Kansas, and Missouri.....	4,184	3,870	4,199	4,544	4,659	4,649	4,432	4,447	4,331	4,464	3,924	3,822	51,525
Texas inland.....	2,248	2,085	2,148	2,211	2,352	2,470	2,282	2,443	2,443	2,491	2,505	2,210	27,888
Texas Gulf coast.....	5,980	5,519	5,215	5,461	6,424	5,834	5,872	5,276	5,110	6,033	5,452	5,869	68,045
Louisiana Gulf coast.....	1,232	1,535	1,526	1,539	1,633	1,560	1,414	1,308	999	1,070	1,093	924	15,833
Arkansas and Louisiana inland.....	665	598	701	731	775	702	649	734	709	750	744	651	8,409
Rocky Mountain.....	895	660	686	699	660	531	789	730	604	624	566	549	7,993
California.....	5,722	5,122	5,549	6,005	5,743	5,711	5,266	5,471	5,075	5,520	5,277	5,289	65,750
Total, 1932.....	32,826	31,243	32,392	33,551	35,133	33,884	33,265	32,883	30,908	33,212	32,072	31,254	392,623
Daily average, 1932.....	1,059	1,077	1,045	1,118	1,133	1,129	1,073	1,061	1,030	1,071	1,069	1,008	1,073
Total, 1931.....	32,161	30,818	34,688	36,151	38,419	36,624	37,873	38,425	37,016	38,080	35,692	35,563	431,510
Stocks,¹ end of period:													
East coast.....	5,255	6,628	7,066	6,872	6,614	6,129	6,325	5,664	4,497	3,885	3,727	4,856	² 4,411
Appalachian.....	1,735	1,936	2,036	1,946	1,890	1,530	1,562	1,326	1,056	1,044	1,153	1,261	1,426
Indiana, Illinois, Kentucky, etc.....	4,494	5,617	6,516	6,490	6,549	5,445	5,377	4,517	3,582	3,045	3,115	3,420	² 3,655
Oklahoma, Kansas, and Missouri.....	3,684	4,182	4,154	4,035	4,248	2,963	3,428	3,162	2,912	3,088	3,273	3,522	² 3,406
Texas inland.....	2,199	2,277	2,062	1,981	2,157	1,915	1,779	1,622	1,528	1,320	1,543	1,603	² 2,058
Texas Gulf coast.....	6,664	7,243	6,744	6,386	5,640	4,411	3,987	4,189	4,236	4,795	5,022	5,585	5,778
Louisiana Gulf coast.....	1,212	1,533	1,905	2,020	1,786	1,501	1,607	1,579	1,353	1,313	1,250	1,064	² 1,225
Arkansas and Louisiana inland.....	169	181	178	187	234	168	157	155	143	160	239	245	149
Rocky Mountain.....	1,944	2,078	2,089	2,039	2,070	1,818	1,873	1,673	1,445	1,293	1,239	1,192	² 1,532
California.....	9,554	10,257	9,904	10,098	9,423	8,520	8,254	8,211	7,694	7,999	7,849	8,581	² 8,712
Total, 1932.....	36,910	41,932	42,654	42,054	40,611	34,400	34,349	32,098	28,446	27,942	28,406	31,329	² 32,352
1931.....	42,375	44,924	47,888	47,601	46,413	42,066	38,174	34,869	33,401	34,615	36,786	40,202	-----

¹ At refineries only—for other motor-fuel stock figures see pp. 301, 339, and 341.

² For comparison with 1932.

Stocks of gasoline at bulk terminals in 1932, by districts and months

[Thousands of barrels of 42 gallons]

	Jan. 1	Jan. 31	Feb. 29	Mar. 31	Apr. 30	May 31	June 30	July 31	Aug. 31	Sept. 30	Oct. 31	Nov. 30	Dec. 31
East coast.....	8,755	9,651	9,421	10,505	11,417	12,572	12,177	12,654	10,888	9,852	8,879	8,351	8,405
Appalachian.....	740	690	613	630	666	786	920	922	864	801	789	827	731
Indiana, Illinois, Kentucky, etc.	3,043	2,856	2,559	2,128	2,318	2,460	2,349	2,467	2,430	2,620	2,918	3,398	3,333
Oklahoma, Kansas, and Missouri.....	796	991	1,112	1,010	1,083	1,184	1,165	1,123	1,061	988	897	748	825
Texas inland.....	120	80	73	80	92	119	79	78	61	43	72	53	44
Texas Gulf coast.....	120	251	189	251	263	333	452	254	315	181	160	210	221
Louisiana Gulf coast.....	202	204	322	379	358	410	443	471	252	287	252	255	352
Arkansas and Louisiana inland.....	424	187	165	222	170	191	132	106	89	68	76	85	89
California.....	4,887	4,523	4,706	4,581	4,768	4,938	4,458	4,753	4,652	4,360	4,265	4,314	4,075
	19,087	19,433	19,160	19,786	21,135	22,993	22,175	22,828	20,612	19,170	18,308	18,241	18,075

Percentage yields of gasoline in 1932, by districts and months

	January	February	March	April	May	June	July	August	September	October	November	December	Average
Based on total gasoline production:													
East coast.....	44	45	43	40	40	40	40	42	40	40	44	46	42.0
Appalachian.....	51	52	51	49	49	48	49	48	49	52	50	50	49.9
Indiana, Illinois, Kentucky, etc.	56	58	57	57	58	59	57	62	60	59	59	53	58.0
Oklahoma, Kansas, and Missouri.....	56	58	57	59	58	61	59	60	62	64	61	57	59.1
Texas inland.....	56	54	55	52	53	56	54	59	62	61	60	56	56.4
Texas Gulf coast.....	48	51	44	43	44	43	45	47	47	51	46	47	46.2
Louisiana Gulf coast.....	38	49	46	45	47	48	44	45	41	47	42	36	44.2
Arkansas and Louisiana inland.....	41	47	49	48	45	42	46	50	47	47	47	45	46.0
Rocky Mountain.....	71	59	64	56	52	51	58	50	56	58	54	60	57.4
California.....	40	39	39	42	41	39	37	40	39	41	42	39	39.9
United States: 1932.....	47.8	49.0	47.3	47.2	47.1	46.8	46.6	48.9	48.4	49.8	49.0	47.4	47.9
1931.....	45.8	47.2	47.1	48.4	48.9	48.1	47.5	47.6	49.3	50.1	49.8	48.9	48.2
Based on total gasoline production less natural gasoline used:													
East coast.....	43	44	43	40	40	40	40	42	40	40	43	45	41.6
Appalachian.....	50	51	50	48	48	47	48	47	48	50	49	49	48.8
Indiana, Illinois, Kentucky, etc.	54	56	56	56	57	58	56	60	58	57	56	51	56.2
Oklahoma, Kansas, and Missouri.....	50	53	52	54	54	56	54	54	55	57	54	50	53.5
Texas inland.....	49	47	49	48	49	51	50	50	50	52	52	50	49.8
Texas Gulf coast.....	46	50	42	41	41	41	43	45	45	49	44	45	44.1
Louisiana Gulf coast.....	36	47	42	43	43	45	40	42	40	45	41	35	41.8
Arkansas and Louisiana inland.....	36	41	44	42	41	38	41	45	42	43	44	42	41.6
Rocky Mountain.....	64	53	57	51	46	42	52	45	47	48	46	52	50.3
California.....	34	34	34	37	35	34	31	35	33	34	35	33	34.1
United States: 1932.....	44.3	46.0	44.5	44.4	44.2	44.0	43.7	45.7	44.5	45.9	45.3	43.9	44.7
1931.....	41.2	42.5	42.9	44.5	45.0	44.3	44.1	44.5	45.6	45.9	45.7	45.2	44.3

*Production of gasoline in 1932, by methods of manufacture, districts, and months*¹

[Thousands of barrels of 42 gallons]

	January	February	March	April	May	June	July	August	September	October	November	December	Total	
													Quantity	Percent
Straight distillation:														
East coast.....	2,668	2,792	2,658	2,625	2,533	2,640	2,403	2,545	2,265	2,166	2,512	2,751	30,558	44.8
Appalachian.....	693	691	747	778	839	729	730	714	542	641	650	658	8,412	49.4
Indiana, Illinois, Kentucky, etc.....	1,987	1,902	2,356	2,672	2,683	2,532	2,503	2,550	2,491	2,560	2,430	1,955	28,621	46.2
Oklahoma, Kansas, and Missouri.....	2,173	2,078	2,301	2,564	2,448	2,615	2,370	2,394	2,211	2,244	1,897	1,890	27,185	52.8
Texas inland.....	1,292	1,176	1,285	1,286	1,350	1,508	1,380	1,415	1,334	1,386	1,429	1,340	16,181	58.0
Texas Gulf coast.....	2,485	2,530	2,634	2,595	2,895	2,432	2,357	2,186	2,048	2,671	2,292	2,467	29,592	43.5
Louisiana Gulf coast.....	613	770	758	781	825	666	549	575	513	486	586	496	7,618	48.1
Arkansas and Louisiana inland.....	362	279	369	372	406	305	295	349	339	350	355	301	4,082	48.5
Rocky Mountain.....	458	315	302	313	234	186	393	356	302	294	291	278	3,722	46.6
California.....	3,519	3,015	3,583	3,936	3,486	3,496	3,008	3,217	2,861	3,117	3,001	3,176	39,415	59.9
Total straight run.....	16,250	15,548	16,993	17,922	17,699	17,109	15,988	16,301	14,906	15,915	15,443	15,312	195,386	49.8
Percent of total production.....	49.5	49.8	52.4	53.4	50.4	50.5	48.1	49.6	48.2	47.9	48.2	49.0	49.8	-----
Cracking:														
East coast.....	3,131	2,919	3,046	2,691	3,164	3,125	3,292	3,084	2,883	3,127	3,282	3,318	37,062	54.3
Appalachian.....	635	683	712	695	724	659	701	619	708	798	698	601	8,233	48.4
Indiana, Illinois, Kentucky, etc.....	2,400	2,577	2,672	2,735	2,776	2,580	2,790	2,768	2,528	2,663	2,574	2,354	31,417	50.8
Oklahoma, Kansas, and Missouri.....	1,603	1,467	1,548	1,610	1,870	1,664	1,696	1,637	1,648	1,717	1,556	1,477	19,493	37.8
Texas inland.....	681	658	635	735	835	748	724	681	645	732	758	627	8,459	30.4
Texas Gulf coast.....	3,224	2,801	2,368	2,567	3,149	3,087	3,186	2,865	2,815	3,074	2,989	3,127	35,252	51.8
Louisiana Gulf coast.....	545	713	637	704	697	784	747	666	462	540	482	404	7,381	46.6
Arkansas and Louisiana inland.....	229	249	260	275	300	326	294	309	295	336	340	310	3,523	41.9
Rocky Mountain.....	347	275	313	319	350	259	314	294	203	222	188	196	3,280	41.0
California.....	1,384	1,466	1,288	1,300	1,446	1,450	1,461	1,519	1,353	1,494	1,373	1,272	16,805	25.6
Total cracked.....	14,179	13,808	13,479	13,631	15,310	14,682	15,205	14,442	13,540	14,703	14,240	13,686	170,905	43.5
Percent of total production.....	43.2	44.2	41.6	40.6	43.6	43.3	45.7	43.9	43.8	44.3	44.4	43.8	43.5	-----

¹ For production of gasoline from the use of natural gasoline see p. 369.

Production of gasoline in 1932, by States

[Thousands of barrels of 42 gallons]

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Arkansas.....	239	193	213	207	250	242	226	220	211	224	221	178	2,624
California.....	5,722	5,122	5,549	6,005	5,743	5,711	5,266	5,471	5,075	5,520	5,277	5,289	65,750
Colorado.....	53	74	45	58	58	62	58	62	43	51	58	49	671
Georgia, Rhode Island, and South Carolina.....	121	115	122	144	133	126	139	111	107	116	104	107	1,445
Illinois.....	1,151	1,217	1,376	1,414	1,441	1,315	1,367	1,413	1,285	1,358	1,433	1,207	15,977
Indiana.....	2,280	2,427	2,566	2,857	2,972	2,735	2,729	2,846	2,656	2,700	2,443	2,146	31,357
Kansas, Missouri, and Iowa.....	1,653	1,671	1,761	1,915	1,647	1,913	1,814	1,865	1,930	1,923	1,567	1,434	21,093
Kentucky, Michigan, and Tennessee.....	468	436	450	501	501	468	458	526	487	538	469	422	5,724
Louisiana.....	1,658	1,940	2,014	2,063	2,158	2,020	1,837	1,822	1,497	1,596	1,616	1,397	21,613
Maryland.....	424	545	521	414	463	406	380	473	349	397	455	480	5,307
Massachusetts.....	464	406	454	424	448	465	443	430	458	427	413	436	5,268
Montana.....	39	60	62	70	62	71	51	72	66	57	75	54	739
New Jersey.....	2,312	2,110	1,930	1,748	2,042	2,122	2,303	2,216	1,889	1,931	2,290	2,240	25,133
New Mexico and Utah.....	123	114	71	76	112	113	127	118	115	122	30	104	1,225
New York.....	418	372	403	397	412	440	378	392	410	440	393	380	4,835
Ohio.....	1,148	1,030	1,249	1,217	1,134	1,179	1,303	1,133	1,207	1,288	1,343	1,116	14,347
Oklahoma.....	2,531	2,199	2,438	2,629	3,012	2,736	2,618	2,582	2,401	2,541	2,357	2,388	30,432
Pennsylvania.....	2,953	3,019	3,108	3,055	3,141	2,954	2,839	2,737	2,602	2,857	3,006	3,243	35,514
Texas.....	8,228	7,604	7,363	7,672	8,776	8,304	8,154	7,719	7,553	8,524	7,957	8,079	95,933
West Virginia.....	161	177	189	190	200	217	222	197	187	208	162	163	2,273
Wyoming.....	680	412	508	495	428	285	553	478	380	394	403	342	5,358
	32,826	31,243	32,392	33,551	35,133	33,884	33,265	32,883	30,908	33,212	32,072	31,254	392,623

Shipments of motor fuel by pipe lines in 1932, by months

[Thousands of barrels of 42 gallons]

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Motor fuel turned into lines.....	2,123	1,978	2,274	2,349	2,656	2,713	2,254	2,722	2,637	3,141	2,723	2,331	29,901
Motor fuel delivered from lines.....	1,885	1,987	2,162	2,357	2,671	2,879	2,226	2,632	2,642	3,089	2,564	2,479	29,573
Shortage.....	7	7	4	4	1	9	5	12	16	12	12	7	92
Stocks in lines and working tanks, end of month.....	1,193	1,177	1,285	1,277	1,261	1,086	1,109	1,187	1,166	1,206	1,353	1,198	1,198

Consumption of gasoline in 1932, by States and months¹

Thousands of gallons)

	January	February	March	April	May	June	July	August	September	October	November	December	Total	
													Thousands of gallons	Thousands of barrels
Alabama.....	11,232	10,683	11,729	12,265	11,353	11,934	11,505	12,007	11,738	11,956	10,406	9,627	136,435	3,248
Arizona.....	5,509	5,400	6,332	6,121	5,970	6,596	5,222	5,681	5,739	5,647	5,715	5,660	69,592	1,657
Arkansas.....	11,319	7,825	8,177	9,053	7,292	10,125	9,389	10,247	11,163	10,957	9,562	8,922	114,031	2,715
California.....	102,210	100,581	115,761	117,074	113,958	152,103	104,174	114,747	116,085	111,126	101,053	103,678	1,352,570	32,204
Colorado.....	10,910	10,615	13,330	14,510	13,562	16,499	12,836	16,244	14,568	13,625	12,259	9,940	158,898	3,783
Connecticut.....	15,849	15,212	17,491	19,430	21,089	23,191	23,566	24,534	23,089	22,386	20,804	18,543	245,184	5,838
Delaware.....	2,851	2,325	2,975	2,992	3,486	2,842	4,572	3,309	3,829	3,256	3,069	2,753	38,259	911
District of Columbia.....	7,318	7,376	7,661	8,919	9,493	9,442	9,178	9,029	8,732	9,064	8,298	8,185	102,695	2,445
Florida.....	20,697	21,124	20,191	18,697	16,415	16,378	15,028	15,110	15,014	15,813	15,768	18,678	208,913	4,974
Georgia.....	16,726	16,352	17,031	16,643	15,943	16,674	16,682	17,643	16,836	17,225	15,620	15,656	199,031	4,739
Idaho.....	2,619	2,353	2,845	4,116	4,798	5,577	5,026	6,080	5,655	4,995	4,168	4,160	52,392	1,247
Illinois.....	69,091	67,403	69,881	82,129	76,984	89,352	88,568	91,773	86,851	86,265	73,402	69,123	950,822	22,639
Indiana.....	32,398	28,911	36,784	39,604	36,783	44,712	37,115	41,822	40,773	37,765	32,384	28,985	438,036	10,429
Iowa.....	24,227	20,865	26,428	37,041	29,630	39,406	29,548	34,295	34,304	31,813	25,068	23,730	356,445	8,487
Kansas.....	22,399	21,980	25,366	31,234	30,359	41,683	36,701	36,208	31,022	27,877	24,050	21,675	350,554	8,347
Kentucky.....	12,075	11,199	11,856	13,148	13,910	14,874	15,025	16,025	15,120	15,275	13,025	12,526	164,058	3,906
Louisiana.....	13,542	13,238	13,662	13,795	13,383	14,380	13,078	14,295	14,647	15,402	13,788	12,804	166,014	3,953
Maine.....	5,381	4,928	5,486	6,851	10,309	11,745	12,869	14,491	12,111	10,851	8,675	7,085	110,732	2,636
Maryland.....	13,557	13,604	14,542	16,444	17,242	17,736	17,273	18,802	18,037	16,924	15,520	14,269	193,950	4,618
Massachusetts.....	36,138	33,959	40,562	45,658	50,936	54,169	54,652	59,316	52,022	51,627	46,098	43,736	568,773	13,542
Michigan.....	56,036	50,937	52,682	64,371	66,902	77,627	69,224	77,087	70,255	65,064	58,873	55,005	765,063	18,216
Minnesota.....	26,031	19,376	28,154	34,946	32,422	40,011	36,613	45,037	40,071	37,105	29,778	25,596	401,080	9,550
Mississippi.....	8,291	6,887	9,030	9,264	7,829	9,560	8,075	10,575	10,053	11,012	9,155	7,555	107,286	2,554
Missouri.....	34,608	30,978	36,407	38,356	37,101	46,422	36,765	43,005	41,838	42,710	36,762	33,720	458,672	10,921
Montana.....	3,336	2,839	4,203	7,433	7,350	7,106	6,163	8,482	7,312	5,777	3,098	67,860	1,616	
Nebraska.....	12,932	11,142	16,087	19,839	17,456	21,948	16,151	17,717	17,720	16,824	15,541	15,557	198,914	4,736
Nevada.....	1,425	1,340	1,742	1,904	2,111	2,479	2,110	2,536	2,183	2,076	1,778	1,585	23,320	555
New Hampshire.....	3,688	3,153	3,714	4,416	5,933	6,373	7,151	8,453	7,170	6,192	5,015	4,358	65,746	1,665
New Jersey.....	47,799	50,446	52,052	57,204	61,486	68,887	63,867	67,728	62,585	61,530	54,674	50,532	698,700	16,638
New Mexico.....	3,161	3,323	3,625	3,798	3,931	4,448	4,128	4,572	4,262	4,174	3,998	3,340	46,760	1,113
New York.....	105,664	116,244	101,846	123,769	142,795	153,114	152,775	159,351	148,753	141,867	125,194	116,234	1,587,606	37,800
North Carolina.....	20,542	17,435	17,265	18,654	18,883	19,110	20,424	19,407	21,168	19,669	20,578	18,936	232,071	5,526
North Dakota.....	3,722	2,343	7,563	13,100	10,048	10,746	8,999	14,802	10,866	7,441	4,200	3,998	97,918	2,331
Ohio.....	64,476	61,333	72,227	80,630	80,090	90,013	75,809	83,583	75,967	85,248	68,997	64,718	903,091	21,502
Oklahoma.....	21,287	19,825	22,395	22,392	20,807	26,869	22,870	24,806	23,944	24,047	21,084	17,802	268,128	6,384
Oregon.....	10,412	9,981	15,254	11,977	15,736	15,954	13,913	15,239	14,273	13,400	11,604	10,456	158,199	3,767
Pennsylvania.....	71,689	72,123	78,136	83,327	93,586	97,214	93,376	98,707	94,862	93,672	85,344	79,025	1,041,061	24,787
Rhode Island.....	7,044	5,850	7,384	8,064	8,402	10,126	9,490	10,550	8,729	9,340	8,271	7,789	101,039	2,406

South Carolina.....	8,282	7,730	8,649	8,968	8,840	8,710	8,815	9,491	8,751	9,070	8,504	8,551	104,361	2,485
South Dakota.....	5,832	4,716	7,982	13,161	10,214	11,303	10,256	12,997	10,513	9,552	7,524	6,659	110,709	2,636
Tennessee.....	15,236	14,452	14,831	15,099	15,422	15,323	15,403	16,024	16,497	15,792	14,147	12,496	180,722	4,303
Texas.....	55,402	53,331	61,679	62,526	63,173	70,350	67,420	67,555	61,018	68,451	62,528	57,651	751,084	17,883
Utah.....	3,397	3,437	3,424	3,654	4,458	4,980	6,283	4,651	5,452	5,403	4,749	4,319	54,207	1,291
Vermont.....	2,215	2,065	2,414	2,864	4,254	4,987	5,087	6,111	5,310	4,608	3,765	3,180	46,860	1,116
Virginia.....	16,464	15,810	17,093	18,822	20,003	21,767	19,983	22,001	20,689	20,136	19,180	17,562	229,480	5,464
Washington.....	15,289	15,605	21,949	20,332	24,208	24,302	20,587	24,955	22,805	20,579	18,187	17,528	246,326	5,865
West Virginia.....	8,298	8,167	8,595	10,682	11,567	12,237	11,415	13,100	12,366	12,372	11,104	9,718	129,621	3,086
Wisconsin.....	26,119	25,390	26,510	34,032	37,077	41,127	41,772	43,165	39,172	35,948	31,479	26,876	408,667	9,730
Wyoming.....	1,792	1,826	2,286	2,768	3,159	3,966	3,738	4,263	3,549	3,132	2,739	2,167	35,375	842
	1,096,417	1,054,017	1,173,238	1,312,226	1,338,138	1,532,677	1,380,699	1,497,628	1,405,558	1,372,340	1,208,247	1,126,224	15,497,409	368,986

¹ Compiled from reports of the American Petroleum Institute which cover "quantities of gasoline sold or offered for sale, as reported by wholesalers and dealers in the various States under provisions of the gasoline tax or inspection laws."

344 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Refinery price of United States motor gasoline (below 57 octane number) in Oklahoma in 1932, in cents per gallon ¹

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
Average monthly prices.....	2.91	2.94	3.47	4.70	4.68	4.90	4.70	4.54	4.10	4.04	4.36	3.42	4.06

PRICE CHANGES BY WEEKS

Jan. 1 ²	2.625	Apr. 4.....	4.375	June 27.....	5.00	Oct. 24.....	4.75
Jan. 11.....	2.875	Apr. 11.....	4.75	July 5.....	4.75	Nov. 7.....	4.625
Jan. 18.....	3.00	Apr. 18.....	5.00	July 11.....	4.625	Nov. 14.....	4.375
Jan. 25.....	3.25	May 2.....	4.875	Aug. 22.....	4.375	Nov. 21.....	4.00
Feb. 1.....	3.125	May 9.....	4.75	Sept. 6.....	4.125	Nov. 28.....	3.75
Feb. 8.....	2.875	May 16.....	4.625	Sept. 19.....	4.00	Dec. 5.....	3.625
Feb. 29.....	3.00	May 23.....	4.50	Sept. 26.....	3.875	Dec. 12.....	3.50
Mar. 7.....	3.25	May 31.....	4.375	Oct. 3.....	3.75	Dec. 19.....	3.25
Mar. 14.....	3.625	June 6.....	4.75	Oct. 10.....	3.50	Dec. 27.....	3.00
Mar. 28.....	4.00	June 13.....	5.125	Oct. 17.....	4.125		

¹ From National Petroleum News.
² Price in effect on this date.

Tank-wagon prices, including tax, of gasoline and kerosene at 6 cities, 1932, in cents per gallon ¹

	New York		Washington		Chicago		New Orleans		San Francisco		Denver	
	Gas-oline	Ker-osene	Gas-oline	Ker-osene	Gas-oline	Ker-osene	Gas-oline	Ker-osene	Gas-oline	Ker-osene	Gas-oline	Ker-osene
Average monthly prices:												
January.....	12.3	9.0	13.9	10.4	15.0	9.0	15.3	10.0	12.5	12.5	12.0	12.5
February.....	12.3	9.0	13.9	10.0	15.0	9.0	15.9	10.0	12.5	12.5	12.0	12.5
March.....	13.5	9.0	14.0	10.0	15.0	9.0	16.2	10.0	12.5	12.5	14.0	12.5
April.....	14.3	9.0	14.6	10.0	15.5	9.0	18.6	10.5	12.5	12.5	15.4	13.1
May.....	13.9	9.5	14.9	10.0	16.0	10.0	19.2	12.0	12.5	12.5	16.7	13.5
June.....	13.3	9.5	15.4	10.0	16.4	10.0	19.8	12.0	13.2	13.5	17.3	13.5
July.....	14.5	9.5	16.4	10.0	17.1	10.0	19.1	11.9	16.0	12.5	18.0	12.5
August.....	14.9	9.5	16.4	10.0	17.1	10.0	18.2	11.0	16.0	12.5	17.2	12.5
September.....	15.9	9.5	15.5	10.0	16.4	10.0	17.9	11.0	16.0	12.5	16.0	12.5
October.....	15.4	8.7	13.6	10.0	15.1	10.0	16.5	11.1	16.0	12.5	16.0	12.5
November.....	16.3	8.5	13.4	10.0	15.1	10.0	16.5	11.7	16.0	12.5	16.0	12.5
December.....	15.8	9.4	12.2	10.0	15.1	10.0	16.5	11.0	16.0	12.5	15.3	12.5
	14.4	9.2	14.5	10.0	15.7	9.7	17.5	11.0	14.3	12.5	15.5	12.7
Dates of price changes:												
Jan. 1 ²	12.3	9.0	13.9	10.7	15.0	9.0	14.5	10.0	12.5	12.5	12.0	12.0
Jan. 6.....							15.5					
Jan. 20.....				10.0								
Feb. 5.....							16.0					
Mar. 1.....	13.3										14.0	
Mar. 21.....	13.5											
Mar. 23.....			14.4									
Mar. 24.....							16.5					
Mar. 25.....	14.0											
Mar. 29.....							17.5					
Apr. 4.....											15.0	
Apr. 7.....							18.5					
Apr. 14.....							19.0				16.0	13.5
Apr. 15.....					16.0							
Apr. 16.....	14.5											
Apr. 18.....			14.9									
Apr. 23.....								12.0				
Apr. 30.....												
May 2.....		9.5					10.0					
May 9.....							19.5					
May 11.....											17.0	
May 23.....		12.5					19.0					
June 13.....			14.4									
June 17.....		13.5										
June 18.....			15.4				20.0					
June 21.....		14.5	16.4		17.1		21.0		13.5		18.0	
June 27.....									16.0			

¹ From National Petroleum News.

² Prices in effect on this date.

Tank-wagon prices, including tax, of gasoline and kerosene at 6 cities, 1932, in cents per gallon—Continued

	New York		Washington		Chicago		New Orleans		San Francisco		Denver	
	Gas-oline	Ker-osene	Gas-oline	Ker-osene	Gas-oline	Ker-osene	Gas-oline	Ker-osene	Gas-oline	Ker-osene	Gas-oline	Ker-osene
Dates of price changes—Con.												
July 1												12.5
July 2							19.0					
July 29							11.0					
Aug. 6							18.0					
Aug. 20											16.0	
Aug. 24	16.0				15.1							
Sept. 21												
Sept. 23			13.2									
Sept. 24							17.5					
Sept. 28	15.0											
Oct. 6		8.5										
Oct. 15							15.5					
Oct. 21	16.0		14.2									
Oct. 29							16.5	12.0				
Nov. 16	16.5											
Nov. 19			12.2									
Nov. 23								11.0				
Dec. 3		9.5										
Dec. 10											15.0	
Dec. 21	14.5											
Dec. 31							16.0					

Comparative analyses of kerosene in 1932, by months

[Thousands of barrels of 42 gallons]

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Production	3,798	3,200	3,525	3,762	4,092	3,523	3,629	3,497	3,449	3,463	3,801	4,097	43,836
Daily average	123	110	114	125	132	117	117	113	115	112	127	132	120
Imports	4				5	1				61			71
Exports	1,215	823	891	592	888	1,076	876	1,005	1,097	962	973	646	11,044
Daily average	39	28	29	20	29	36	28	32	37	31	32	21	30
Stocks, end of period	5,304	4,971	4,539	4,417	4,812	5,134	6,033	6,247	6,018	5,465	4,672	4,974	4,974
Domestic demand	2,611	2,714	3,066	3,292	2,814	2,126	1,854	2,278	2,581	3,115	3,621	3,149	33,221
Daily average	84	94	99	110	91	71	60	73	86	100	121	102	91

Production and stocks of kerosene in 1932, by districts and months

[Thousands of barrels of 42 gallons]

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Production:													
East coast	558	550	502	517	514	515	507	612	602	586	779	908	7,150
Appalachian	258	256	309	289	313	270	277	264	268	285	254	246	3,289
Indiana, Illinois, Kentucky, etc.	222	259	297	378	409	323	327	345	234	265	264	194	3,517
Oklahoma, Kansas, and Missouri	607	482	550	691	679	550	552	542	506	501	438	466	6,564
Texas inland	235	218	211	210	189	201	176	161	162	165	185	198	2,311
Texas Gulf coast	972	735	957	935	1,066	696	737	522	644	701	911	1,006	9,882
Louisiana Gulf coast	306	283	258	314	315	264	314	337	334	335	460	389	3,909
Arkansas and Louisiana inland	61	55	68	77	80	52	52	47	52	52	61	61	718
Rocky Mountain	42	27	40	60	64	29	46	41	36	42	40	39	506
California	537	335	333	291	463	623	641	626	611	531	409	590	5,990
Total, 1932	3,798	3,200	3,525	3,762	4,092	3,523	3,629	3,497	3,449	3,463	3,801	4,097	43,836
Daily average, 1932	123	110	114	125	132	117	117	113	115	112	127	132	120
Total, 1931	3,560	3,171	3,676	3,397	3,389	3,404	3,696	3,685	3,239	3,701	3,815	3,713	42,446

346 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Production and stocks of kerosene in 1932, by districts and months—Continued

[Thousands of barrels of 42 gallons]

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Stocks, end of period:													Dec. 31, 1931
East coast.....	858	956	896	878	942	1,020	1,254	1,449	1,542	1,390	1,007	973	899
Appalachian.....	235	201	170	163	187	232	253	251	236	245	254	219	231
Indiana, Illinois, Kentucky, etc.....	598	565	519	437	481	543	588	609	559	519	528	451	638
Oklahoma, Kansas, and Missouri.....	445	451	330	241	326	364	324	313	319	320	310	334	438
Texas inland.....	112	126	92	107	133	148	151	118	89	61	66	77	103
Texas Gulf coast.....	943	706	870	984	1,127	1,185	1,406	1,406	1,225	1,086	739	811	844
Louisiana Gulf coast.....	158	149	131	197	196	207	328	308	321	257	173	334	322
Arkansas and Louisiana inland.....	23	21	20	17	29	17	21	15	17	18	22	14	23
Rocky Mountain.....	356	335	307	260	250	233	220	204	194	196	183	197	352
California.....	1,576	1,461	1,204	1,133	1,141	1,185	1,488	1,574	1,516	1,373	1,390	1,564	1,482
Total: 1932.....	5,304	4,971	4,539	4,417	4,812	5,134	6,033	6,247	6,018	5,465	4,672	4,974	5,332
1931.....	6,600	6,529	6,357	6,184	6,013	6,570	6,929	6,718	6,566	5,924	5,618	5,332	.....

Percentage yields of kerosene in 1932, by districts and months

By districts:		By months:	
East coast.....	4.4	January.....	5.5
Appalachian.....	9.6	February.....	5.0
Indiana, Illinois, Kentucky, etc.....	3.3	March.....	5.1
Oklahoma, Kansas, and Missouri.....	7.5	April.....	5.3
Texas inland.....	4.7	May.....	5.5
Texas Gulf coast.....	6.7	June.....	4.9
Louisiana Gulf coast.....	10.9	July.....	5.1
Arkansas and Louisiana inland.....	3.9	August.....	5.2
Rocky Mountain.....	3.6	September.....	5.4
California.....	3.6	October.....	5.2
		November.....	5.8
		December.....	6.2
United States: 1932.....	5.3	Year.....	5.3
1931.....	4.7		

Consumption of kerosene in 1932, by States and months ¹

[Thousands of barrels of 42 gallons]

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Alabama.....	26	27	26	29	26	22	20	23	21	24	27	29	300
Arkansas.....	33	25	37	31	26	26	21	25	27	29	30	31	341
Colorado.....	9	9	12	14	13	11	10	12	10	9	10	10	129
Florida.....	54	50	63	49	43	37	35	38	46	49	59	58	581
Georgia.....	40	39	40	37	32	31	29	32	35	42	39	42	438
Kansas.....	54	66	97	96	81	73	69	81	54	60	42	52	825
Michigan.....	54	59	56	78	56	69	66	73	72	82	75	66	806
Minnesota.....	250	265	231	185	131	69	105	169	192	231	258	322	2,408
Missouri.....	78	82	104	131	113	108	90	91	99	99	80	71	1,146
Nebraska.....	30	33	44	62	167	105	54	133	88	65	59	57	897
North Dakota.....	11	12	18	43	36	24	21	41	33	26	14	14	293
Oklahoma.....	58	62	66	56	48	58	62	60	56	56	50	46	678
South Carolina.....	27	20	25	25	22	26	19	28	24	25	24	20	285
South Dakota.....	12	19	25	31	22	19	21	19	14	15	16	19	232
	736	768	844	867	816	678	622	825	771	812	783	837	9,359

¹ From American Petroleum Institute.

Tank-wagon prices of kerosene at 6 representative cities in 1932, in cents per gallon ¹

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
Average monthly prices:													
New York.....	9.0	9.0	9.0	9.0	9.5	9.5	9.5	9.5	9.5	8.8	8.5	9.4	9.2
Washington.....	10.5	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Chicago.....	9.0	9.0	9.0	9.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	9.7
New Orleans.....	10.0	10.0	10.0	10.5	12.0	12.0	12.0	11.1	11.0	11.1	11.7	11.0	11.0
San Francisco.....	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
Denver.....	12.5	12.5	12.5	13.1	13.5	13.5	12.5	12.5	12.5	12.5	12.5	12.5	12.7
Average.....	10.6	10.5	10.5	10.7	11.3	11.3	11.1	10.9	10.9	10.8	10.9	10.9	10.9

	New York	Washington	Chicago	New Orleans	San Francisco	Denver
Dates of price changes:						
Jan. 1 ²		9.0	10.7	9.0	12.5	12.5
Jan. 25.....			10.0			
Apr. 14.....						13.5
Apr. 23.....					12.0	
Apr. 30.....				10.0		
May 2.....		9.5				
May 18.....						
July 1.....						12.5
Aug. 3.....					11.0	
Oct. 10.....		8.5				
Oct. 29.....					12.0	
Nov. 23.....					11.0	
Dec. 5.....		9.5				

¹ From National Petroleum News.

² Prices in effect on this date.

Comparative analyses of gas oil and distillate fuel oils and residual fuel oils in 1932, by months

[Thousands of barrels of 42 gallons]

	January	February	March	April	May	June	July
Production:							
Gas oil and distillate fuel oils.....	6,361	5,599	6,353	5,738	5,890	5,207	5,191
Residual fuel oils.....	20,080	17,810	19,558	19,698	19,933	19,090	19,599
Total.....	26,441	23,409	25,911	25,436	25,823	24,297	24,790
Daily average.....	853	807	836	848	833	810	800
Transfers ¹	445	695	423	481	394	372	213
Imports.....	2,302	2,301	2,871	2,965	1,678	2,601	789
Daily average.....	74	79	93	99	54	83	25
Exports.....	1,586	1,512	2,277	2,594	2,403	1,454	1,217
Daily average.....	51	52	73	86	78	48	39
Stocks, end of period:							
Gas oil and distillate fuel oils.....	16,059	13,623	12,078	11,607	12,396	13,477	15,408
Residual fuel oils ²	116,901	115,817	114,173	115,169	117,177	118,694	120,609
Total.....	132,960	129,440	126,251	126,776	129,573	132,071	136,017
Domestic demand.....	30,498	28,413	30,117	25,763	22,695	23,218	20,629
Daily average.....	984	980	972	859	732	774	665

	August	September	October	November	December	Total
Production:						
Gas oil and distillate fuel oils.....	5,519	5,665	6,382	5,582	5,980	69,467
Residual fuel oils.....	17,943	17,544	17,196	18,127	18,705	225,283
Total.....	23,462	23,209	23,578	23,709	24,685	294,750
Daily average.....	757	774	761	790	796	805
Transfers ¹	787	610	522	835	826	6,603
Imports.....	1,382	1,173	1,162	1,074	1,088	21,286
Daily average.....	45	39	37	36	35	53
Exports.....	1,409	1,293	1,475	1,472	1,302	19,994
Daily average.....	45	43	48	49	42	55
Stocks, end of period:						
Gas oil and distillate fuel oils.....	16,971	17,905	18,495	16,775	14,110	14,110
Residual fuel oils ²	122,024	120,805 120,342	118,951	117,196	115,771	115,771
Total.....	138,995	138,710 138,247	137,446	133,971	129,881	129,881
Domestic demand.....	21,244	23,984	24,588	27,621	29,387	308,157
Daily average.....	685	799	793	921	948	842

¹ Includes crude used as fuel and net transfers to fuel-oil stocks in California.

² Includes heavy crude in California.

³ 463,000 barrels transferred to unfinished oil stocks.

Production and stocks of gas oil and distillate fuel oils in 1932, by districts and months

[Thousands of barrels of 42 gallons]

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Production:													
East coast.....	1,001	872	1,122	816	894	781	995	1,000	1,537	1,631	1,157	1,186	12,992
Appalachian.....	38	91	124	139	103	106	82	100	99	135	159	140	1,316
Indiana, Illinois, Kentucky, etc.....	867	788	753	647	575	495	475	496	609	633	840	830	8,008
Oklahoma, Kansas, and Missouri.....	742	562	725	711	663	518	461	411	474	520	500	707	6,994
Texas inland.....	181	136	197	190	222	173	152	211	151	226	237	272	2,348
Texas Gulf coast.....	1,365	1,372	1,580	1,315	1,582	1,176	1,303	1,650	1,313	1,526	1,019	1,018	16,219
Louisiana Gulf coast.....	349	223	289	270	334	302	186	205	19	122	127	100	2,526
Arkansas and Louisiana inland.....	139	110	152	150	156	159	138	151	160	192	172	170	1,849
Rocky Mountain.....	54	38	62	97	90	61	66	73	69	44	-54	50	650
California.....	1,625	1,407	1,349	1,403	1,271	1,436	1,333	1,222	1,234	1,353	1,425	1,507	16,565
Total, 1932.....	6,361	5,599	6,353	5,738	5,890	5,207	5,191	5,519	5,665	6,332	5,582	5,980	69,467
Daily average, 1932.....	205	193	205	191	190	174	167	178	189	206	186	193	190
Total, 1931.....	7,372	6,327	8,112	7,683	7,226	6,764	7,070	7,139	6,713	6,669	6,346	6,461	83,882
													<i>Dec. 31,</i>
													<i>1931</i>
Stocks, end of period:													
East coast.....	3,387	2,554	1,854	1,826	2,021	2,129	2,585	3,143	3,885	4,542	4,200	3,377	4,009
Appalachian.....	625	514	513	566	511	550	663	605	522	428	479	616	887
Indiana, Illinois, Kentucky, etc.....	1,974	1,583	1,085	991	1,127	1,417	1,748	1,996	2,239	2,293	2,180	1,750	2,272
Oklahoma, Kansas, and Missouri.....	2,055	1,591	1,452	1,391	1,399	1,374	1,326	1,440	1,392	1,282	1,211	1,113	2,421
Texas inland.....	637	594	607	576	514	510	442	501	600	480	360	342	2,703
Texas Gulf coast.....	2,254	1,695	1,483	1,247	1,447	1,775	2,426	2,972	2,926	3,065	2,718	2,070	2,919
Louisiana Gulf coast.....	504	482	570	503	616	748	688	847	895	815	827	809	613
Arkansas and Louisiana inland.....	134	101	103	135	166	155	136	110	115	109	107	112	167
Rocky Mountain.....	327	299	270	239	237	241	242	241	261	242	125	118	358
California.....	4,162	4,210	4,141	4,133	4,358	4,578	5,152	5,116	5,170	5,239	4,568	3,803	4,177
Total: 1932.....	16,059	13,623	12,078	11,607	12,396	13,477	15,408	16,971	17,905	18,495	16,775	14,110	18,526
1931.....	14,450	13,695	14,064	14,912	16,820	17,985	19,304	20,757	21,752	20,887	20,469	18,526	-----

Production and stocks of residual fuel oils in 1932, by districts and months

[Thousands of barrels of 42 gallons]

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Production:													
East coast.....	4,319	4,007	4,424	4,183	4,086	4,171	4,496	4,113	3,926	3,791	4,160	4,162	49,838
Appalachian.....	235	282	310	361	292	242	244	202	217	283	331	338	3,857
Indiana, Illinois, Kentucky, etc.....	1,829	1,289	1,437	1,201	1,046	815	880	1,040	962	1,094	1,265	1,602	14,500
Oklahoma, Kansas, and Missouri.....	1,329	1,322	1,191	1,543	1,416	1,332	1,361	1,302	1,338	1,343	1,391	1,438	16,706
Texas inland.....	1,390	1,243	1,192	1,327	1,519	1,381	1,368	1,307	1,222	1,210	1,284	1,068	15,461
Texas Gulf coast.....	3,344	2,793	2,658	3,152	3,617	2,988	3,238	2,826	2,722	2,317	2,783	2,738	35,176
Louisiana Gulf coast.....	905	764	1,082	971	1,006	887	1,013	747	811	605	704	811	10,306
Arkansas and Louisiana inland.....	583	427	482	485	491	641	481	485	502	548	515	507	6,147
Rocky Mountain.....	143	136	250	361	344	330	257	262	203	156	189	129	2,760
California.....	6,063	5,527	6,132	6,114	6,116	6,303	6,261	5,659	5,611	5,839	5,495	5,912	71,032
Total, 1932.....	20,080	17,810	19,558	19,698	19,933	19,090	19,599	17,943	17,544	17,196	18,127	18,705	225,283
Daily average, 1932.....	648	614	631	657	643	636	632	579	585	555	604	603	616
Total, 1931.....	21,026	19,447	21,183	21,880	21,566	21,472	21,541	21,780	20,736	21,346	20,632	20,476	253,085
Stocks, end of period:													<i>Dec. 31, 1931</i>
East coast.....	4,622	4,510	4,233	4,275	4,585	5,016	5,602	6,048	5,657	5,255	5,297	4,986	4,373
Appalachian.....	646	625	595	557	501	455	470	466	387	319	269	272	699
Indiana, Illinois, Kentucky, etc.....	3,013	2,930	2,895	3,010	3,098	2,900	2,827	2,723	2,503	2,379	2,029	1,775	2,838
Oklahoma, Kansas, and Missouri.....	2,302	2,097	2,201	2,505	2,563	2,654	2,712	2,726	2,518	2,324	2,223	2,059	2,572
Texas inland.....	3,083	3,078	2,972	3,102	3,324	3,393	3,084	2,755	2,249	2,265	2,451	2,539	3,230
Texas Gulf coast.....	6,289	5,908	4,901	4,978	5,730	5,775	6,610	7,368	3,920	6,890	6,280	5,638	6,291
Louisiana Gulf coast.....	2,783	2,899	3,308	3,562	3,475	3,774	4,088	4,108	1,346	3,326	2,609	1,863	2,995
Arkansas and Louisiana inland.....	713	582	563	568	581	616	564	556	512	463	426	417	630
Rocky Mountain.....	417	384	350	373	380	406	396	379	304	273	290	289	428
California ¹	93,033	92,809	92,155	92,249	92,940	93,605	94,256	94,895	95,048	95,457	95,322	95,933	93,274
Total: 1932.....	116,901	115,817	114,173	115,169	117,177	118,594	120,609	122,024	120,805	118,951	117,196	115,771	117,330
1931.....	118,763	116,369	114,676	115,914	116,100	115,968	116,622	118,221	112,342	117,489	118,638	117,330	-----

¹ 463,000 barrels transferred to unfinished oil stocks.

² Includes heavy crude.

350 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Percentage yields of gas oil and distillate fuel oils in 1932, by districts and months

By districts:		By months:	
East coast.....	8.0	January.....	9.3
Appalachian.....	3.9	February.....	8.8
Indiana, Illinois, Kentucky, etc.....	7.5	March.....	9.3
Oklahoma, Kansas, and Missouri.....	8.0	April.....	8.1
Texas inland.....	4.7	May.....	7.9
Texas Gulf coast.....	11.0	June.....	7.2
Louisiana Gulf coast.....	7.0	July.....	7.3
Arkansas and Louisiana inland.....	10.1	August.....	8.2
Rocky Mountain.....	4.7	September.....	8.9
California.....	10.1	October.....	9.6
		November.....	8.5
		December.....	9.1
United States:		Year.....	8.5
1932.....	8.5		
1931.....	9.4		

Percentage yields of residual fuel oils in 1932, by districts and months

By districts:		By months:	
East coast.....	30.7	January.....	29.2
Appalachian.....	9.8	February.....	27.9
Indiana, Illinois, Kentucky, etc.....	13.6	March.....	28.6
Oklahoma, Kansas, and Missouri.....	19.2	April.....	27.7
Texas inland.....	31.3	May.....	26.7
Texas Gulf coast.....	23.9	June.....	26.4
Louisiana Gulf coast.....	23.7	July.....	27.4
Arkansas and Louisiana in- land.....	33.6	August.....	26.7
Rocky Mountain.....	19.8	September.....	27.4
California.....	43.1	October.....	25.8
		November.....	27.7
		December.....	28.3
United States:		Year.....	27.5
1932.....	27.5		
1931.....	28.3		

Prices of fuel oil at 4 selected points in 1932, in dollars per barrel of 42 gallons, and refinery prices of 2 grades of distillate fuel oil in 1932, in cents per gallon¹

	January	February	March	April	May	June	July	August	September	October	November	December	Average
Average monthly prices:													
24°-26° gravity fuel oil at refineries in Oklahoma dollars per barrel.....	0.33	0.33	0.35	0.43	0.44	0.42	0.40	0.41	0.43	0.46	0.55	0.56	0.43
Grade C bunker oil in cargoes, Gulf coast, dollars per barrel.....	.38	.38	.41	.45	.48	.52	.55	.55	.55	.46	.45	.41	.47
14°-18° gravity grade C bunker oil in cargoes, New York dollars per barrel.....	.60	.60	.61	.65	.70	.76	.85	.85	.79	.75	.75	.75	.72
14°-18° gravity bunker oil in cargoes, California dollars per barrel.....	.55	.55	.55	.56	.56	.55	.59	.60	.60	.60	.60	.60	.58
38°-40° straw distillate in Oklahoma..... cents per gallon.....	2.056	2.056	1.919	2.054	2.181	2.021	2.004	2.565	2.875	3.004	3.375	3.375	2.457
32°-36° straw gas oil in Oklahoma..... cents per gallon.....	1.25	1.185	1.125	1.35	1.375	1.45	1.50	1.552	1.80	1.968	2.167	2.25	1.582

¹ National Petroleum News.

Prices of fuel oil at 4 selected points in 1932, in dollars per barrel of 42 gallons, and refinery prices of 2 grades of distillate fuel oil in 1932, in cents per gallon—Con.

	24°-26° gravity fuel oil at refineries, Oklahoma (dollars)	Grade C bunker oil in cargoes, Gulf coast (dollars)	14°-18° gravity grade C bunker oil in cargoes, New York (dollars)	14°-18° gravity bunker oil in cargoes, California (dollars)	38°-40° straw distillate, Oklahoma (cents)	32°-36° straw gas oil, Oklahoma (cents)
Price changes by weeks:						
Jan. 1 ²	0.325	0.40	0.60	0.55	2.00	1.25
Jan. 4		.38				
Jan. 18					2.125	
Feb. 15					2.00	1.125
Feb. 22	.35					
Feb. 29		.40			1.875	
Mar. 21		.42			2.00	
Mar. 28		.43	.65			
Apr. 4	.425	.45				1.375
Apr. 11				.56		
Apr. 18	.45				2.125	
May 2					2.25	
May 9		.48				
May 16	.425	.50	.75		2.125	
June 6				.54	2.00	1.50
June 13						
June 20		.55				
June 27	.40		.85			
July 5				.60	1.875	
July 18					2.00	
July 25					2.25	
Aug. 1					2.375	
Aug. 15	.425				2.025	
Aug. 22					2.75	1.625
Aug. 29			.75		2.875	1.75
Sept. 12						
Sept. 19						1.875
Oct. 3		.45				
Oct. 10	.45					
Oct. 17	.475				3.00	2.00
Oct. 24	.50				3.25	2.125
Oct. 31					3.375	
Nov. 7	.65					
Nov. 21	.575					2.25
Dec. 5		.40				
Dec. 12	.55					

² Prices in effect on this date.

Fuel used at refineries in the United States in 1932, by districts

	Oil (thous- ands of bar- rels)	Acid sludge (thous- ands of bar- rels)	Coal (thous- ands of short tons)	Gas (mil- lions of cubic feet)		Coke (thous- ands of short tons)	Pur- chased elec- tricity (thous- ands of kilo- watt- hours)	Total B.t.u. (bil- lions, ap- proximate)	Crude run to still (thous- ands of bar- rels)	B.t.u. per barrel of crude oil run
				Nat- ural	Refin- ery					
East coast.....	11,607	1,946	75	27,669		68	134,298	121,126	162,534	745,000
Appalachian.....	1,799		556	1,990	9,088	10	73,942	40,362	34,136	1,182,000
Indiana, Illinois, Ken- tucky, etc.....	4,889	662	315	136	29,568	62	113,823	83,902	106,758	786,000
Oklahoma, Kansas, and Missouri.....	5,715	703	1	7,214	17,777	11	115,034	70,273	87,170	806,000
Texas inland.....	2,732	74		7,820	6,076	7	83,959	33,652	49,435	681,000
Texas Gulf coast.....	3,818	1,690		17,744	41,454	166	64,745	112,160	147,143	762,000
Louisiana Gulf coast.....	327			4,748	6,235	3	64,369	15,766	35,853	440,000
Arkansas-Louisiana inland.....	435	50		4,726	3,146		9,514	12,202	18,297	667,000
Rocky Mountain.....	532	72	11	6,479	3,235	6	11,530	15,314	13,934	1,086,000
California.....	2,947	727		16,610	17,386		174,602	62,733	164,737	381,000
Total	34,801	5,924	958	67,467	161,634	333	845,816	567,490	819,997	692,000
Total B.t.u. (billions, ap- proximate).....	208,806	24,658	24,908	70,840	226,288	9,990		567,490		

Comparative analyses of lubricants in 1932, by months

[Thousands of barrels of 42 gallons]

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Production-----	2,092	1,984	1,946	1,910	2,036	2,290	1,958	1,587	1,648	1,713	1,644	1,625	22,433
Daily average-----	67	68	63	64	66	76	63	51	55	55	55	52	61
Imports-----	4	1	2	1	1	3	(1)	(1)	(1)	(9)	(1)	(1)	12
Exports-----	616	599	608	541	832	726	279	662	499	463	573	453	6,851
Daily average-----	20	21	20	18	27	24	9	21	17	15	19	15	19
Stocks, end of period.	9,551	9,747	9,355	9,139	8,809	7,323	7,991	7,965	8,182	8,289	8,245	8,465	8,465
Domestic demand-----	1,414	1,190	1,732	1,586	1,535	3,053	1,011	951	932	1,143	1,115	952	16,614
Daily average-----	46	41	56	53	50	102	33	31	31	37	37	31	45

1 Less than 500 barrels.

Production and stocks of lubricants in 1932, by districts and months

[Thousands of barrels of 42 gallons]

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Production:													
East coast.....	662	632	527	571	568	662	578	478	477	525	509	523	6,712
Appalachian.....	343	325	352	355	390	407	366	366	280	317	301	299	4,101
Indiana, Illinois, Kentucky, etc.....	236	172	209	165	181	225	135	143	109	155	128	144	2,002
Oklahoma, Kansas, and Missouri.....	204	214	242	199	213	233	211	172	173	206	198	211	2,476
Texas inland.....	6	21	20	21	31	27	21	19	15	15	21	18	235
Texas Gulf coast.....	469	408	408	387	459	452	472	224	461	345	332	314	4,761
Louisiana Gulf coast.....	15	27	29	6	27	26	23	21	27	36	30	31	298
Arkansas and Louisiana inland.....	18	17	14	14	14	14	16	17	14	16	7	7	168
Rocky Mountain.....	25	15	24	28	27	28	15	16	6	6	5	5	178
California.....	114	153	121	164	126	186	121	131	86	92	113	95	1,502
Total, 1932.....	2,092	1,984	1,946	1,910	2,036	2,290	1,958	1,587	1,648	1,713	1,644	1,625	22,433
Daily average, 1932.....	67	68	63	64	66	76	63	51	55	55	55	52	61
Total, 1931.....	2,441	2,036	2,293	2,316	2,264	2,088	2,337	2,306	2,143	2,267	2,164	2,049	26,704
Stocks, end of period:													
East coast.....	3,099	3,269	3,148	3,076	2,943	2,390	2,585	2,596	2,586	2,607	2,585	2,695	Dec. 31, 1931 3,073
Appalachian.....	1,136	1,116	1,115	1,067	1,097	821	903	932	1,031	1,032	1,075	1,075	1,145
Indiana, Illinois, Kentucky, etc.....	1,009	984	937	896	896	737	771	810	825	873	896	1,004	1,018
Oklahoma, Kansas, and Missouri.....	771	810	705	659	658	511	509	531	572	560	561	580	753
Texas inland.....	77	79	72	74	78	70	74	78	75	80	84	86	80
Texas Gulf coast.....	2,099	2,123	2,078	2,076	1,867	1,662	1,978	1,782	1,933	1,994	1,867	1,897	2,075
Louisiana Gulf coast.....	108	102	94	87	76	58	62	57	51	67	65	70	112
Arkansas and Louisiana inland.....	39	40	34	27	22	17	15	15	13	15	11	10	20
Rocky Mountain.....	253	243	224	219	224	206	213	222	221	217	209	185	250
California.....	960	981	948	958	948	851	881	892	870	844	892	863	959
Total: 1932.....	9,551	9,747	9,355	9,139	8,809	7,323	7,991	7,965	8,182	8,289	8,245	8,465	9,485
1931.....	10,935	10,824	10,621	10,393	10,020	9,663	9,510	9,243	9,162	9,113	9,422	9,511	-----

¹ For comparison with 1932.

Percentage yields of lubricants in 1932, by districts and months

By districts:		By months:	
East coast.....	4.1	January.....	3.0
Appalachian.....	12.0	February.....	3.1
Indiana, Illinois, Kentucky, etc.....	1.9	March.....	2.8
Oklahoma, Kansas, and Missouri.....	2.8	April.....	2.7
Texas inland.....	.5	May.....	2.7
Texas Gulf coast.....	3.2	June.....	3.2
Louisiana Gulf coast.....	.8	July.....	2.7
Arkansas and Louisiana in- land.....	.9	August.....	2.4
Rocky Mountain.....	1.3	September.....	2.6
California.....	.9	October.....	2.6
		November.....	2.5
		December.....	2.5
United States: 1932.....	2.7	Year.....	2.7
1931.....	3.0		

Refinery prices of 5 selected grades of lubricating oil in 1932, in cents per gallon¹

	January	February	March	April	May	June	July	August	September	October	November	December	Average
Average monthly prices:													
Oklahoma:													
200 viscosity, no. 4 color, neutral.....	8.3	8.3	7.9	8.2	8.3	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
150-160 viscosity at 210°, bright stock, 10-25 cold test.....	17.2	15.2	15.2	18.8	20.5	21.1	21.5	20.9	17.2	16.5	15.3	15.0	17.9
Pennsylvania:													
200 viscosity, no. 3 color, filtered, neutral, 420-425 flash.....	18.3	18.4	18.3	17.3	17.4	17.0	16.9	16.6	15.9	15.0	13.5	13.1	16.5
600 steam refined, filterable.....	10.8	12.2	13.5	12.4	13.8	14.1	14.0	13.8	12.3	11.0	9.4	9.3	12.2
Gulf coast: 500 viscosity, no. 3½ color, un- filtered, neutral.....													
	8.9	6.8	6.8	7.1	7.5	7.6	7.7	7.5	7.5	7.5	7.5	7.3	7.5

	Oklahoma		Pennsylvania		Gulf coast
	200 viscosity, no. 4 color, neutral	150-160 vis- cosity at 210°, bright stock, 10-25 cold test	200 viscosity, no. 3 color, filtered, neu- tral, 420-425 flash	600 steam re- fined, filter- able	500 viscosity, no. 3½ color, unfiltered, neutral
Price changes by weeks:					
Jan. 1 ¹	9.0	17.5	18.5	10.75	9.25
Jan. 4.....	8.25				
Jan. 18.....			18.0		9.0
Jan. 25.....		16.0		11.0	8.0
Feb. 1.....		15.5			6.75
Feb. 8.....			18.5		
Feb. 15.....		15.0		12.25	
Feb. 22.....				12.5	
Feb. 29.....				13.0	
Mar. 7.....		14.75		13.5	
Mar. 14.....	7.5			13.75	
Mar. 21.....			18.0		7.0
Mar. 28.....	8.0	17.5	17.5	13.25	
Apr. 4.....	8.25			12.75	
Apr. 11.....		19.5	17.25	12.25	
Apr. 18.....				12.0	
Apr. 25.....				12.5	7.5
May 2.....		20.5	17.5	12.75	
May 9.....				13.5	
May 23.....			17.25	14.0	
May 31.....			17.0		
June 13.....		21.5			
June 20.....				14.25	
June 27.....	8.0			14.0	8.0

¹ From National Petroleum News.

² Prices in effect on this date.

Refinery prices of 5 selected grades of lubricating oil in 1932, in cents per gallon—
Continued

	Oklahoma		Pennsylvania		Gulf coast
	200 viscosity, no. 4 color, neutral	150-160 viscosity at 210°, bright stock, 10-25 cold test	200 viscosity, no. 3 color, filtered, neutral, 420-425 flash	600 steam refined, filterable	
Price changes by weeks—Contd.					
July 5.....	8.25				
July 11.....					7.5
July 18.....			16.75		
Aug. 22.....		19.5	16.5	13.5	
Aug. 29.....			16.0	13.0	
Sept. 6.....		17.5		12.75	
Sept. 12.....		16.5		12.25	
Sept. 19.....				12.0	
Sept. 26.....			15.5	11.5	
Oct. 3.....				11.25	
Oct. 10.....			14.75		
Oct. 17.....				11.0	
Oct. 24.....				10.5	
Oct. 31.....			14.5	10.0	
Nov. 7.....		15.0	13.5	9.5	
Nov. 14.....			13.0	9.0	
Nov. 21.....			13.25	9.25	
Nov. 28.....				9.5	
Dec. 12.....			13.0	9.25	7.25

Comparative analyses of wax in 1932, by months

[Thousands of pounds]

	January	February	March	April	May	June
Production.....	43,680	48,440	47,040	36,680	39,760	36,400
Daily average.....	1,409	1,670	1,517	1,223	1,283	1,213
Imports.....	4,586	8,294	3,696	1,954	1,669	2,151
Daily average.....	148	286	119	65	54	72
Exports.....	22,969	17,507	15,888	18,876	17,034	12,439
Daily average.....	741	604	513	629	549	415
Stocks, end of period	178,062	176,674	182,974	184,486	194,973	198,526
Domestic demand.....	18,435	40,635	28,548	18,246	13,908	22,559
Daily average.....	595	1,401	921	608	449	752

	July	August	September	October	November	December	Total
Production.....	31,640	38,920	36,680	31,360	33,320	35,000	458,920
Daily average.....	1,021	1,255	1,223	1,012	1,111	1,129	1,254
Imports.....	2,184	1,815	4	530	2,201	4,171	33,255
Daily average.....	70	59		17	73	135	91
Exports.....	13,962	19,103	21,794	28,606	25,525	21,601	235,304
Daily average.....	450	616	726	923	851	687	643
Stocks, end of period	202,023	206,461	201,930	188,637	180,441	163,628	163,628
Domestic demand.....	16,365	17,194	19,421	16,577	18,192	34,383	264,463
Daily average.....	528	555	647	535	606	1,109	723

Production and stocks of wax in 1932, by districts and months

[Thousands of pounds]

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Production:													
East coast.....	21,280	22,400	20,440	17,080	16,800	14,280	14,280	15,120	15,120	16,520	19,320	16,800	209,440
Appalachian.....	7,280	7,280	7,560	7,560	6,720	6,440	5,320	6,720	8,400	8,960	6,160	6,720	85,120
Indiana, Illinois, Kentucky, etc.....	2,240	5,320	5,320	3,360	3,640	4,200	5,040	5,040	4,200	1,680	1,680	840	42,560
Oklahoma, Kansas, and Missouri.....	1,960	2,520	2,800	2,240	2,240	2,240	2,520	2,240	2,520	2,240	2,240	3,080	28,840
Texas inland.....	280	280	280	280	280	280	280	280	280	280	280	280	3,080
Texas Gulf coast.....	1,680	3,080	3,920	3,360	3,360	3,360	1,120	1,960	1,400	1,120	2,240	2,520	29,120
Louisiana Gulf coast.....	6,720	5,880	6,440	2,240	4,760	7,000	3,920	6,160	3,640	840	1,960	1,400	50,960
Rocky Mountain.....	2,240	1,680	280	560	1,960	-1,120	-840	1,400	1,120	-280	-560	3,360	9,800
Total.....	43,680	48,440	47,040	36,680	39,760	36,400	31,640	38,920	36,680	31,360	33,320	35,000	458,920
Daily average.....	1,409	1,670	1,517	1,223	1,283	1,213	1,021	1,255	1,223	1,012	1,111	1,129	1,254
Stocks, end of period:													
Crude scale:													
East coast.....	24,780	25,402	24,618	24,603	27,216	28,940	29,079	29,163	26,650	25,655	22,561	20,041	^{Dec. 31, 1931} 22,874
Appalachian.....	19,439	16,845	16,490	16,849	16,506	17,206	16,632	18,413	18,276	18,518	20,075	19,673	19,641
Indiana, Illinois, Kentucky, etc.....	20,873	21,232	22,301	21,310	22,566	23,098	25,239	26,933	28,685	25,976	24,530	22,993	18,869
Oklahoma, Kansas, and Missouri.....	2,234	3,009	3,339	3,753	3,936	3,766	3,648	3,062	2,690	1,954	1,914	1,675	2,273
Texas Gulf coast.....	1,418	369	1,412	1,682	1,931	3,321	3,180	2,953	2,772	2,834	2,885	2,514	1,618
Louisiana Gulf coast.....	34,057	31,121	32,872	31,476	34,535	36,054	37,912	41,911	43,153	41,540	40,851	30,343	35,846
Rocky Mountain.....	31,673	32,952	32,762	33,039	34,327	32,104	30,463	31,152	31,183	29,708	27,727	29,190	30,266
Total.....	134,474	130,930	133,794	132,612	141,017	144,489	146,153	153,587	153,309	146,185	140,543	126,429	¹ 131,377
Refined:													
East coast.....	22,533	24,534	26,681	27,626	28,717	29,280	31,222	28,819	25,345	21,851	20,713	17,751	¹ 17,643
Appalachian.....	2,399	3,144	3,362	4,168	4,399	3,811	4,782	5,229	4,813	4,136	2,635	2,443	2,181
Indiana, Illinois, Kentucky, etc.....	1,388	1,350	1,881	2,079	2,238	2,145	1,757	1,859	1,662	1,489	1,945	2,076	1,653
Oklahoma, Kansas, and Missouri.....	2,127	1,467	1,654	1,692	1,985	2,286	1,708	1,847	1,899	1,626	1,597	1,303	2,386
Texas inland.....	213	205	338	100	282	307	280	282	177	263	178	284	80
Texas Gulf coast.....	11,139	11,753	12,903	13,669	13,873	13,400	13,109	12,473	11,902	10,002	9,498	8,904	13,285
Louisiana Gulf coast.....	2,181	1,868	1,044	1,305	1,304	1,447	1,620	1,014	1,449	1,442	1,747	1,612	1,228
Rocky Mountain.....	1,628	1,423	1,317	1,235	1,158	1,361	1,392	1,351	1,474	1,643	1,585	2,826	1,437
Total.....	43,608	45,744	49,180	51,874	53,956	54,037	55,870	52,874	48,621	42,452	39,898	37,199	¹ 39,843
Total:													
East coast.....	47,313	49,936	51,299	52,229	55,933	58,220	60,301	57,982	51,995	47,506	43,274	37,792	¹ 40,517
Appalachian.....	21,838	19,989	19,852	21,017	20,905	21,017	21,414	23,642	23,089	22,654	22,710	22,116	21,822
Indiana, Illinois, Kentucky, etc.....	22,261	22,582	24,182	23,389	24,804	25,243	26,996	28,792	30,247	27,465	26,475	25,069	20,522

Oklahoma, Kansas, and Missouri.....	4,361	4,476	4,993	5,445	5,921	6,052	5,356	4,909	4,489	3,580	3,511	2,978	4,659
Texas inland.....	213	205	338	100	282	307	280	282	177	263	178	284	80
Texas Gulf coast.....	12,557	12,122	14,315	15,251	15,804	16,721	16,289	15,426	14,674	12,836	12,383	11,418	14,853
Louisiana Gulf coast.....	36,238	32,989	33,916	32,781	35,839	37,501	39,532	42,925	44,602	42,982	42,598	31,955	37,074
Rocky Mountain.....	33,301	34,375	34,079	34,274	35,485	33,465	31,855	32,503	32,657	31,351	29,312	32,016	31,693
Total.....	178,082	176,674	182,974	184,486	194,973	198,526	202,023	206,461	201,930	188,637	180,441	163,628	171,220

¹ For comparison with 1932.

358 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

*Refinery price of 122 to 124 white crude scale wax at Pennsylvania refineries in 1932, in cents per pound*¹

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
Average monthly prices.....	2.13	2.08	2.04	2.02	1.94	1.86	1.77	1.80	1.88	1.96	2.13	2.11	1.98

PRICE CHANGES BY WEEKS

Jan. 1 ²	2.125	May 9.....	1.95	Aug. 15.....	1.80	Oct. 31.....	2.125
Feb. 15.....	2.10	May 23.....	1.875	Aug. 22.....	1.85	Dec. 19.....	2.10
Feb. 22.....	2.0	June 20.....	1.85	Aug. 29.....	1.875		
Mar. 7.....	2.05	June 27.....	1.80	Oct. 10.....	1.95		
Apr. 11.....	2.00	July 11.....	1.75	Oct. 17.....	2.00		

¹ From National Petroleum News.

² Price in effect on this date.

Comparative analyses of petroleum coke in 1932, by months

[Thousands of short tons]

	January	February	March	April	May	June	July
Production.....	144.9	141.4	145.7	148.6	159.4	145.1	152.5
Daily average.....	4.7	4.9	4.7	5.0	5.1	4.8	4.9
Exports.....	3.8	3.7	4.1	1.2	11.8	9.8	6.3
Stocks, end of period.....	1,460.0	1,440.3	1,436.1	1,519.8	1,554.2	1,536.7	1,544.2
Domestic demand.....	192.7	167.4	145.8	63.7	113.2	152.8	138.7
Daily average.....	6.2	5.4	4.7	2.1	3.7	5.1	4.5

	August	September	October	November	December	Total
Production.....	150.2	150.2	154.5	146.7	149.6	1,788.8
Daily average.....	4.8	5.0	5.0	4.9	4.8	4.9
Exports.....	12.4	9	3.8	18.1	13.5	59.4
Stocks, end of period.....	1,514.5	1,483.6	1,434.4	1,393.9	1,330.2	1,330.2
Domestic demand.....	167.5	180.2	199.9	169.1	199.8	1,880.8
Daily average.....	5.4	6.0	6.4	5.6	6.4	5.1

Production and stocks of petroleum coke in 1932 by districts and months

[Thousands of short tons]

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Production:													
East coast.....	12.9	15.3	16.3	12.3	11.6	15.9	16.3	15.7	16.3	16.5	17.7	15.3	182.1
Appalachian.....	3.1	2.7	3.1	3.3	2.4	3.1	5.3	4.7	3.5	3.9	2.9	2.8	40.8
Indiana, Illinois, Kentucky, etc.....	57.3	56.3	62.0	65.7	66.1	56.5	58.0	66.5	58.1	62.2	61.2	59.0	728.9
Oklahoma, Kansas, and Missouri.....	24.9	22.9	19.4	20.6	24.9	22.7	22.9	22.1	21.5	22.5	17.9	18.8	261.1
Texas inland.....	7.4	5.5	4.5	8.0	7.6	6.7	6.3	3.9	2.2	3.5	4.1	3.7	63.4
Texas Gulf coast.....	21.4	21.0	26.1	25.3	33.5	27.6	29.8	21.4	35.7	32.9	28.2	33.7	337.2
Louisiana Gulf coast.....	4.9	5.7	5.3	6.3	5.1	6.5	5.7	6.7	6.3	3.1	3.7	5.1	64.4
Arkansas and Louisiana inland.....	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	2.4
Rocky Mountain.....	10.6	8.6	6.3	6.3	7.6	5.7	7.8	8.8	6.1	7.3	7.3	7.1	89.5
California.....	2.2	2.6	2.5	.6	.4	.2	.2	.2	.3	2.4	3.5	3.9	19.0
Total, 1932.....	144.9	141.4	145.7	148.6	159.4	145.1	162.5	150.2	150.2	154.5	146.7	149.6	1,788.8
Daily average, 1932.....	4.7	4.9	4.7	5.0	5.1	4.8	4.9	4.8	5.0	5.0	4.9	4.8	4.9
Total, 1931.....	159.0	150.8	170.4	168.4	178.4	179.6	172.6	177.9	180.0	159.2	168.0	167.7	2,032.0
													<i>Dec. 31, 1931</i>
Stocks, end of period:													
East coast.....	15.6	15.1	11.5	13.9	20.4	27.4	34.7	45.4	49.6	47.3	42.9	29.3	22.1
Appalachian.....	9.4	7.7	7.3	7.7	6.7	6.6	9.8	11.5	9.5	8.0	7.9	7.3	11.1
Indiana, Illinois, Kentucky, etc.....	196.9	176.1	164.5	202.5	236.8	191.3	173.2	156.3	133.2	100.6	100.2	91.7	215.9
Oklahoma, Kansas, and Missouri.....	163.7	160.5	164.1	171.3	179.0	184.8	191.8	193.6	190.9	182.4	160.2	151.0	165.6
Texas inland.....	133.7	136.1	138.4	145.7	146.9	151.5	157.5	159.3	158.4	140.9	140.1	135.3	131.3
Texas Gulf coast.....	584.3	587.3	592.5	617.0	604.0	615.4	633.6	606.1	628.5	647.6	637.7	615.4	611.3
Louisiana Gulf coast.....	113.1	116.4	114.6	116.3	111.3	115.2	100.1	97.6	73.5	69.9	67.0	64.3	117.2
Arkansas and Louisiana inland.....	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.2
Rocky Mountain.....	139.5	138.6	138.6	140.2	142.7	139.1	138.2	139.6	138.1	135.0	134.2	131.8	138.1
California.....	103.7	102.5	104.6	105.2	106.4	105.3	105.1	104.9	103.7	102.7	103.7	104.1	98.8
Total: 1932.....	1,460.0	1,440.3	1,436.1	1,519.8	1,554.2	1,536.7	1,544.2	1,514.5	1,483.6	1,434.4	1,393.9	1,330.2	1,511.6
1931.....	1,032.3	1,052.6	1,089.1	1,157.8	1,250.3	1,315.4	1,390.7	1,450.5	1,515.6	1,472.7	1,499.0	1,511.6	.....

CRUDE PETROLEUM AND PETROLEUM PRODUCTS

Comparative analyses of asphalt in 1932, by months

[Thousands of short tons]

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Production.....	134.6	133.6	185.6	216.8	257.2	261.4	240.3	237.8	245.5	235.6	181.7	144.8	2,474.9
Daily average.....	4.3	4.6	6.0	7.2	8.3	8.7	7.8	7.7	8.2	7.6	6.1	4.7	6.8
Imports.....	1.0	.9	2.4	.2	2.1	7.0	1.5	1.0	1.3	1.0	1.4	.6	20.4
Exports.....	14.4	18.9	25.6	28.9	20.9	14.1	19.7	13.4	12.6	16.5	19.4	16.1	220.5
Stocks, end of period.....	309.4	313.4	351.2	391.3	414.1	408.6	386.3	298.0	291.9	248.3	279.5	276.1	276.1
Domestic demand.....	113.6	111.6	124.6	148.0	215.6	259.8	244.4	313.7	240.3	263.7	132.5	132.7	2,300.5
Daily average.....	3.7	3.8	4.0	4.9	7.0	8.7	7.9	10.1	8.0	8.5	4.4	4.3	6.3

Production and stocks of asphalt in 1932, by districts and months

[Thousands of short tons]

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Production:													
East coast.....	59.3	46.3	74.5	110.4	136.4	152.7	137.1	113.9	107.9	102.2	80.2	69.3	1,190.2
Appalachian.....	4.4	7.1	12.0	8.5	16.9	13.1	9.5	13.3	12.2	9.3	6.6	3.3	116.2
Indiana, Illinois, Kentucky, etc.....	17.9	27.2	20.3	27.7	39.9	27.8	27.7	31.1	57.7	41.9	28.1	13.0	360.3
Oklahoma, Kansas, and Missouri.....	.3	-----	1.3	1.6	.9	2.9	2.7	4.5	5.1	7.5	5.8	2.4	35.0
Texas inland.....	13.3	11.3	12.5	11.3	14.2	13.8	10.9	12.4	11.1	14.5	10.4	8.2	143.9
Texas Gulf coast.....	11.9	5.6	22.4	25.2	10.5	18.8	15.4	17.5	13.0	16.7	8.2	17.5	182.7
Louisiana Gulf coast.....	5.5	7.4	2.2	2.3	5.1	5.5	2.9	4.4	6.7	8.1	9.6	7.3	67.0
Arkansas and Louisiana inland.....	-----	.2	1.1	.4	.4	.4	.5	-----	.2	.2	.5	-----	3.9
Rocky Mountain.....	22.0	28.5	39.3	29.4	32.9	26.4	33.6	40.7	31.6	35.2	32.3	23.8	375.7
California.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Total, 1932.....	134.6	133.6	185.6	216.8	257.2	261.4	240.3	237.8	245.5	235.6	181.7	144.8	2,474.9
Daily average, 1932.....	4.3	4.6	6.0	7.2	8.3	8.7	7.8	7.7	8.2	7.6	6.1	4.7	6.8
Total, 1931.....	147.3	165.8	190.2	247.8	304.0	314.7	314.0	311.5	325.8	314.2	209.6	131.6	2,976.5
Stocks, end of period:													<i>Dec. 31, 1931</i>
East coast.....	104.1	103.7	130.2	149.4	157.2	156.5	159.5	113.4	116.4	83.1	80.7	84.3	87.5
Appalachian.....	20.4	23.7	29.5	31.8	33.7	33.4	27.0	19.1	14.0	9.3	15.4	8.3	20.1
Indiana, Illinois, Kentucky, etc.....	75.6	80.8	75.8	74.7	93.5	77.3	69.4	52.5	58.3	60.3	67.3	67.5	79.1
Oklahoma, Kansas, and Missouri.....	2.9	2.8	3.8	3.8	3.1	3.8	4.2	3.0	3.0	4.4	5.8	5.1	3.9
Texas inland.....	.1	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	.1
Texas Gulf coast.....	12.3	9.0	6.1	8.4	5.3	9.2	5.2	5.6	6.2	5.7	7.7	6.0	11.3
Louisiana Gulf coast.....	30.0	26.3	29.4	43.2	38.9	47.2	47.2	39.5	35.5	36.8	32.6	39.8	28.9
Arkansas and Louisiana inland.....	24.6	26.7	26.1	27.2	26.5	26.4	19.2	16.7	14.8	15.5	20.7	22.8	23.2
Rocky Mountain.....	2.2	2.2	3.2	3.5	3.3	3.3	3.3	2.9	2.5	2.5	2.7	2.7	2.3
California.....	37.2	38.2	47.1	49.3	52.6	51.5	51.3	45.3	41.2	30.7	46.6	39.6	45.4
Total: 1932.....	309.4	313.4	351.2	391.3	414.1	408.6	386.3	298.0	291.9	248.3	279.5	276.1	301.8
1931.....	295.0	331.5	354.1	360.0	379.8	389.6	343.4	314.9	287.5	275.9	276.8	301.8	-----

Production and stocks of road oil in 1932, by districts and months

[Thousands of barrels of 42 gallons]

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Production:													
East coast.....	8	6	15	46	34	36	40	154	90	101	56	34	620
Appalachian.....	51	2	3	20	25	30	20	29	10	-16	-2	-2	170
Indiana, Illinois, Kentucky, etc.....	4	10	54	68	189	617	608	405	279	79	12	12	2,337
Oklahoma, Kansas, and Missouri.....	26	29	49	41	96	126	254	205	106	107	38	18	1,095
Texas inland.....		5	6	10		35	46	28	28	27	10	6	201
Texas Gulf coast.....	5	1	1	4	3	7	9	21	12	21	9	-1	92
Louisiana Gulf coast.....				22				33	14	13	9	6	99
Arkansas and Louisiana inland.....				5	10	38	40	15	30	13	1		152
Rocky Mountain.....	27	14	9	42	85	95	136	182	130	69	15	22	826
California.....	33	21	34	109	139	244	224	220	120	60	45	38	1,287
Total, 1932.....	154	88	171	367	581	1,228	1,410	1,273	818	470	190	129	6,879
Daily average.....	5	3	6	12	19	41	45	41	27	15	6	4	19
Total, 1931.....	102	115	114	169	529	700	1,115	980	682	452	135	84	5,177
													<i>Dec. 31, 1931</i>
Stocks, end of period:													
East coast.....	14	11	19	39	40	27	38	161	129	126	112	103	14
Appalachian.....	61	62	65	84	88	66	79	68	54	30	22	20	10
Indiana, Illinois, Kentucky, etc.....	11	16	50	96	143	195	254	159	108	72	44	40	12
Oklahoma, Kansas, and Missouri.....	110	139	187	220	235	207	207	160	130	99	83	90	88
Texas inland.....		6	12	16		17	38	34	30	25	14	17	
Texas Gulf coast.....	12	12	11	10	11	10	12	14	10	20	16	13	11
Louisiana Gulf coast.....				5			14	14	7	6	6	7	
Arkansas and Louisiana inland.....				5	6	9	10	3	2				
Rocky Mountain.....	115	129	138	178	214	190	152	116	71	72	66	83	89
California.....	137	134	136	172	249	273	292	262	201	109	136	191	109
Total, 1932.....	460	509	618	825	986	999	1,096	991	742	559	499	564	333
Total, 1931.....	284	341	371	382	572	541	691	446	366	349	378	333	

Production of still gas in 1932, by districts and months

[Millions of cubic feet]

	January	February	March	April	May	June	July
East coast.....	2,524	2,395	2,614	2,384	2,637	2,642	2,996
Appalachian.....	649	705	695	731	790	798	858
Indiana, Illinois, Kentucky, etc.....	2,304	2,327	2,661	2,857	2,954	2,750	3,036
Oklahoma, Kansas, and Missouri.....	1,028	1,095	1,108	1,181	1,314	1,175	1,319
Texas inland.....	399	344	299	450	593	472	419
Texas Gulf coast.....	3,224	2,858	2,866	3,236	3,145	3,405	3,402
Louisiana Gulf coast.....	459	502	577	569	623	681	631
Arkansas and Louisiana inland.....	164	166	190	195	209	204	201
Rocky Mountain.....	274	242	227	281	323	168	299
California.....	1,597	1,641	1,612	1,505	1,524	1,525	1,437
Total, 1932.....	12,622	12,275	12,849	13,389	14,112	13,820	14,598
Daily average.....	407	423	414	446	455	461	471
Total equivalent (thousands of barrels).....	3,207	3,029	3,200	3,382	3,664	3,539	3,763
Total, 1931.....	10,755	10,157	11,692	12,004	12,809	12,923	13,941
Total equivalent (thousands of barrels).....	2,671	2,528	2,910	2,994	3,192	3,280	3,544

362 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Production of still gas in 1932, by districts and months—Continued

[Millions of cubic feet]

	August	September	October	November	December	Total	Total equivalent (thousands of barrels)
East coast.....	2,905	2,544	2,502	2,662	2,716	31,521	8,734
Appalachian.....	812	807	845	731	633	9,054	2,370
Indiana, Illinois, Kentucky, etc.....	2,612	2,772	2,725	2,625	2,446	32,069	8,191
Oklahoma, Kansas, and Missouri.....	1,371	1,236	1,267	1,072	1,060	14,226	3,618
Texas inland.....	404	389	459	397	377	5,002	1,158
Texas Gulf coast.....	3,353	3,554	3,418	3,326	3,654	39,441	9,707
Louisiana Gulf coast.....	653	494	446	391	538	6,564	1,261
Arkansas and Louisiana inland.....	218	192	213	189	193	2,334	515
Rocky Mountain.....	324	218	204	162	188	2,910	681
California.....	1,456	1,307	1,472	1,400	1,215	17,691	4,675
Total, 1932.....	14,108	13,513	13,551	12,955	13,020	160,812	40,905
Daily average.....	455	450	437	432	420	439	118
Total equivalent (thousands of barrels).....	3,626	3,386	3,484	3,311	3,314	40,905	-----
Total, 1931.....	14,346	13,680	14,326	13,695	13,758	154,086	38,630
Total equivalent (thousands of barrels).....	3,642	3,475	3,586	3,387	3,421	38,630	-----

Production and stocks of miscellaneous oils in 1932, by districts and months

[Thousands of barrels of 42 gallons]

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Production:													
East coast.....	30	19	24	32	11	17	4	20	23	10	21	14	225
Appalachian.....	24	17	20	18	17	17	17	17	15	14	18	15	210
Indiana, Illinois, Kentucky, etc.....	26	33	30	33	16	25	23	30	34	25	28	22	325
Oklahoma, Kansas, and Missouri.....	6	14	9	12	8	6	6	4	8	4	9	6	92
Texas inland.....	10	25	10	9	9	7	6	6	9	9	6	6	112
Texas Gulf coast.....	2	3	3	1	3	4	5	3	2	1	1	3	31
Louisiana Gulf coast.....	3	4	---	1	1	2	1	4	---	1	1	---	15
Arkansas and Louisiana inland.....	14	12	10	13	15	25	1	1	1	1	9	---	94
Rocky Mountain.....	10	3	3	20	1	8	2	1	2	3	---	---	2
California.....	119	93	84	99	70	36	51	11	14	20	17	18	632
Total, 1932.....	244	223	193	198	150	147	112	97	106	82	110	76	1,738
Daily average, 1932.....	8	8	6	7	5	5	4	3	4	3	4	2	5
Total, 1931.....	265	272	306	370	379	401	494	395	413	321	287	247	4,150
Stocks, end of period:													Dec. 31, 1931
East coast.....	65	74	70	79	79	90	77	83	93	67	70	55	81
Appalachian.....	64	54	44	32	26	34	42	35	39	34	37	38	67
Indiana, Illinois, Kentucky, etc.....	124	141	150	154	145	148	147	146	143	135	138	130	1,200
Oklahoma, Kansas, and Missouri.....	21	28	17	20	22	18	16	16	23	20	21	20	24
Texas inland.....	5	9	9	4	8	7	6	6	6	6	7	6	6
Texas Gulf coast.....	8	9	9	8	8	8	8	9	8	8	9	11	8
Louisiana Gulf coast.....	7	8	6	7	5	6	6	4	6	3	4	3	5
Arkansas and Louisiana inland.....	7	6	4	5	7	9	7	6	5	4	12	4	8
Rocky Mountain.....	82	81	77	50	41	40	15	16	18	14	---	---	179
California.....	267	247	246	249	236	173	175	190	183	168	187	189	256
Total: 1932.....	650	657	632	608	577	533	499	511	524	459	485	456	1,734
1931.....	578	595	695	626	630	687	605	661	645	665	714	785	-----

¹ For comparison with 1932.

Production of miscellaneous oils in 1932, by districts and classes

[Thousands of barrels of 42 gallons]

	Special naphthas ¹	Petrolatum	Absorption oil	Medicinal oil	Ink oil	Black oil	Acid oil	Specialties	Other	Total
East coast.....		36		81	35				73	225
Appalachian.....		147				4	12		47	210
Indiana, Illinois, Kentucky, etc.....	4	34				1	6	1	279	325
Oklahoma, Kansas, and Missouri.....	42	7	43							92
Texas inland.....	1		79						32	112
Texas Gulf coast.....	25	4	2							31
Louisiana Gulf coast.....									15	15
Arkansas and Louisiana inland.....	55					28			11	94
Rocky Mountain.....		1						1		2
California.....	249		6	23				82	272	632
	376	229	130	104	35	33	18	84	729	1,738

¹ Classified as gasoline after July 1, 1932.

Production and stocks of unfinished oils in 1932, by districts and months

[Thousands of barrels of 42 gallons]

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Production (net):													
East coast.....	1 263	1 78	1 333	196	478	605	1 175	1 400	1 661	1 249	1 643	1 773	12,296
Appalachian.....	47	6	1 106	6	70	34	75	49	23	1 13	1 6	1 27	158
Indiana, Illinois, Kentucky, etc.....	1 392	1 162	1 41	583	316	50	322	1 216	1 28	452	208	288	1,380
Oklahoma, Kansas, and Missouri.....	156	1 125	1 321	1 336	1 189	1 207	1 194	1 36	1 192	1 362	1 211	1 106	12,123
Texas inland.....	1 72	88	21	55	1 88	1 42	1 21	18	30	1 69	1 132	15	1 197
Texas Gulf coast.....	1 478	1 967	189	507	547	1,242	358	1 357	1 429	1 115	424	498	1,419
Louisiana Gulf coast.....	212	163	1 142	65	1 50	1 74	1 23	1 17	1 28	1 167	1 98	1 5	1 114
Arkansas and Louisiana inland.....	78	1 2	1 27	9	93	1 68	1 26	1 32	1 20	1 51	1 31	1 19	1 86
Rocky Mountain.....	1 7	188	1 39	1 85	1 47	1 27	6	59	1 10	1 116	275	85	514
California.....	1 200	262	162	1 293	1 32	1 373	82	1 100	85	16	1 181	56	1 516
Total: 1932.....	1 919	1 637	1 637	707	1,098	1,150	404	1 1,032	1 1,230	1 442	1 335	12	1 1,861
1931.....	618	395	1 5	1 1,386	466	1 11	88	265	1 1,150	1 1,548	1 1,516	415	1 3,369
													Dec. 31, 1931
Stocks, end of period:													
East coast.....	7,418	7,340	7,006	7,338	7,833	8,833	8,841	8,664	8,272	8,227	7,608	7,281	² 7,367
Appalachian.....	1,537	1,543	1,437	1,443	1,513	1,547	1,622	1,671	1,694	1,681	1,675	1,648	1,490
Indiana, Illinois, Kentucky, etc.....	6,572	6,244	6,029	6,416	6,410	6,259	6,218	5,836	5,779	5,839	5,821	5,986	² 6,827
Oklahoma, Kansas, and Missouri.....	3,289	3,330	3,183	3,043	3,176	3,170	3,339	3,469	3,306	3,336	3,351	3,368	² 3,270
Texas inland.....	1,151	1,239	1,260	1,315	1,227	1,185	1,164	1,182	1,212	1,143	1,011	1,026	1,223
Texas Gulf coast.....	10,701	9,734	9,937	10,246	10,776	11,651	11,851	11,296	10,764	10,445	10,845	10,897	11,494
Louisiana Gulf coast.....	2,074	2,227	2,072	2,199	2,149	2,047	1,999	1,957	{ 1,763 2,226 }	2,059	2,021	2,016	² 1,861
Arkansas and Louisiana inland.....	636	634	607	616	709	651	625	593	573	522	491	472	558
Rocky Mountain.....	1,814	2,002	1,963	1,873	1,831	1,804	1,810	1,869	1,859	1,975	2,250	2,335	² 1,821
California.....	8,646	8,908	9,070	8,777	8,745	8,372	8,454	8,354	8,439	8,455	8,274	8,330	8,846
Total: 1932.....	43,838	43,201	42,564	43,271	44,369	45,519	45,923	44,891	{ 43,661 44,124 }	43,682	43,347	43,359	² 44,757
1931.....	47,771	48,166	48,161	46,775	47,241	47,230	47,318	47,583	46,433	44,885	43,369	43,784	-----

¹ Negative quantity—represents net excess of unfinished oils rerun over unfinished oil produced.² For comparison with 1932.

463,000 barrels transferred from residual-fuel-oil stocks.

Shortage in 1932, by districts and months

[Thousands of barrels of 42 gallons]

	January	February	March	April	May	June	July	August	September	October	November	December	Total
East coast.....	248	182	158	319	315	305	305	228	294	106	176	82	2,717
Appalachian.....	78	100	143	118	129	139	122	129	129	105	96	81	1,369
Indiana, Illinois, Kentucky, etc.	49	81	75	116	19	53	107	49	115	40	19	19	610
Oklahoma, Kansas, and Missouri.....	273	264	292	266	319	355	325	345	292	231	238	241	3,441
Texas inland.....	201	208	226	241	238	251	217	205	260	276	239	268	2,881
Texas Gulf coast.....	201	205	265	237	140	266	216	239	171	156	203	103	2,402
Louisiana Gulf coast.....	83	68	124	25	113	57	121	80	73	101	77	127	1,089
Arkansas and Louisiana inland.....	70	52	50	67	81	90	70	62	61	63	45	44	755
Rocky Mountain.....	33	11	14	18	12	11	26	47	47	50	17	39	303
California.....	398	394	442	461	480	527	474	420	392	408	415	374	5,185
Total, 1932.....	1,634	1,533	1,789	1,735	1,846	2,054	1,983	1,805	1,834	1,536	1,525	1,378	20,652
Daily average, 1932.....	53	53	58	58	60	68	64	58	61	60	51	44	56
Total, 1931.....	1,456	1,477	1,406	1,724	1,478	1,605	1,949	1,843	1,721	1,685	1,479	1,247	19,070

¹ Overplus.

IMPORTS AND EXPORTS OF REFINED PRODUCTS

Imports of refined products (including natural asphalt) into continental United States in 1932, by months ¹

[Thousands of barrels of 42 gallons, except as otherwise indicated]

	January	February	March	April	May	June	July	August	September	October	November	December	Total	
													Quantity	Value (thous. dollars)
Gasoline.....	1,223	1,195	1,126	1,709	1,168	1,209	64	111	62	161	121	56	8,205	16,530
Kerosene.....	4	4	4	1	5	1	1	1	1	61	1	1	8	71
Gas oil and fuel oil.....	2,302	2,301	2,871	2,965	1,678	2,501	789	1,382	1,173	1,162	1,074	1,088	21,286	11,147
Lubricants.....	4	1	2	1	1	3	(3)	(3)	(3)	(3)	(3)	(3)	12	202
Wax..... thous. of pounds	4,586	3,294	3,696	1,954	1,669	2,151	2,184	1,815	4	530	2,201	4,171	33,255	966
Wax.....	16	30	13	7	12	38	8	6	4	2	8	3	118	968
Natural asphalt.....	6	5	13	1	1	3	8	5	7	2	2	2	112	250
Tops and other unfinished distillates.....	---	---	---	---	---	---	1	2	1	2	---	2	8	110
Total.....	3,551	3,536	4,025	4,683	2,870	3,760	870	1,506	1,243	1,394	1,210	1,164	29,812	29,270

¹ Exclusive of the Territories of Alaska, Hawaii, and Puerto Rico.

² Less than 500 barrels.

Exports and shipments of refined products in 1932, by months ¹

[Thousands of barrels of 42 gallons, except as otherwise indicated]

	January	February	March	April	May	June	July
Gasoline.....	3,419	2,835	3,015	3,772	4,604	3,431	2,350
Natural gasoline.....	5	10	15	12	6	93	13
Benzol.....	(?)	3	8	27	(?)	(?)	(?)
Kerosene.....	1,215	823	891	592	888	1,076	876
Gas oil and distillate fuel oil.....	509	796	734	1,133	864	492	549
Residual fuel oil.....	1,077	716	1,543	1,461	1,539	962	668
Lubricants.....	616	599	608	541	832	726	279
Wax, crude..... thousands of pounds.....	4,831	5,897	6,423	5,512	4,517	2,709	3,750
Wax, refined..... do.....	18,138	11,610	9,465	13,364	12,517	9,730	10,212
Wax, total..... do.....	22,969	17,507	15,888	18,876	17,034	12,439	13,962
Wax, total.....	82	63	57	67	61	44	50
Coke..... thousands of short tons.....	3.8	3.7	4.1	1.2	11.8	9.8	6.3
Coke.....	19	19	21	6	60	50	32
Asphalt..... thousands of short tons.....	14.4	18.9	25.6	28.9	20.9	14.1	19.7
Asphalt.....	79	104	141	159	115	78	108
Insulating or transformer oils ²	6	1	2	4	9	8	2
Mineral spirits.....	5	6	4	4	3	4	3
Total: 1932.....	7,028	5,974	7,037	7,774	8,972	6,956	4,928
1931.....	10,091	8,000	7,244	8,163	9,719	7,753	9,135

	August	September	October	November	December	Total	
						Quantity	Value (thousands of dollars)
Gasoline.....	2,347	2,652	2,334	2,356	1,938	35,053	83,905
Natural gasoline.....	8	84	22	27	13	308	533
Benzol.....	10	(?)	23	4	2	77	612
Kerosene.....	1,005	1,097	962	973	646	11,044	24,620
Gas oil and distillate fuel oil.....	651	695	720	918	721	8,782	9,956
Residual fuel oil.....	758	598	755	554	581	11,212	7,985
Lubricants.....	662	499	463	573	453	6,851	49,868
Wax, crude..... thousands of pounds.....	5,191	8,551	11,678	10,013	8,535	77,607	1,709
Wax, refined..... do.....	13,912	13,243	16,928	15,512	13,066	157,697	4,561
Wax, total..... do.....	19,103	21,794	28,606	25,525	21,601	235,304	6,270
Wax, total.....	68	78	102	91	77	840	6,270
Coke..... thousands of short tons.....	12.4	0.9	3.8	18.1	13.5	89.4	380
Coke.....	63	5	20	92	69	456	380
Asphalt..... thousands of short tons.....	13.4	12.6	16.5	19.4	16.1	220.5	3,345
Asphalt.....	74	69	91	107	88	1,213	3,345
Insulating or transformer oils ³	8	1	3	1	2	47	418
Mineral spirits.....	3	7	3	1	3	46	284
Total: 1932.....	5,649	5,784	5,495	5,696	4,591	75,882	187,758
1931.....	8,713	7,817	8,056	8,068	6,100	98,859	260,063

¹ Exclusive of exports from Alaska, Hawaii, and Puerto Rico and inclusive of shipments from continental United States to Alaska, Hawaii, and Puerto Rico.

² Less than 500 barrels.

³ Included in lubricants.

Exports of the major refined products in 1932, by countries of destination

[Thousands of barrels of 42 gallons, except as otherwise indicated]

	Gasoline ¹		Kerosene		Gas oil and fuel oil		Lubricants		Wax	
	Quantity	Value (thousands of dollars)	Quantity	Value (thousands of dollars)	Quantity	Value (thousands of dollars)	Quantity	Value (thousands of dollars)	Quantity (thousands of lbs.)	Value (thousands of dollars)
Argentina.....	296	990	85	280	91	39	88	1,094	5,982	173
Australia.....	3,250	7,773	578	1,310	97	78	256	2,710	1,002	33
Belgium.....	1,485	2,920	212	386	137	171	528	2,418	7,270	206
Brazil.....	476	1,698	211	966	47	111	122	1,034	1,745	60
British India.....	8	34	132	326	105	108	319	2,027	783	31
Canada.....	2,389	6,737	53	129	1,582	1,609	344	2,659	921	27
Chile.....	3	16	1	4	678	452	19	220	4,588	104
China, Hong Kong, and Kwantung.....	551	1,579	1,832	3,946	453	447	189	1,306	15,920	395
Colombia.....	7	35	(²)	2	9	13	7	123	6,110	185
Cuba.....	458	853	8	14	508	225	29	294	1,708	54
Denmark.....	406	748	285	500	298	361	192	672	1,478	44
Finland.....	93	183	107	182	24	45	3	38	272	9
France.....	4,924	9,465	217	391	141	159	1,026	7,132	1,218	38
Germany.....	744	1,549	264	461	917	699	691	4,386	24,333	631
Irish Free State.....	331	1,738	96	172	4	6	4	35	2,978	66
Italy.....	342	783	57	120	500	636	342	2,482	34,842	985
Japan.....	987	2,686	978	1,758	4,986	4,216	193	1,630	1,532	48
Mexico.....	518	1,431	33	104	1,143	896	36	372	4,969	118
Netherlands.....	1,215	2,804	1,018	1,759	911	1,120	134	934	14,442	378
Netherlands West Indies.....	992	2,141	171	274	362	368	6	70	-----	-----
New Zealand.....	1,380	3,067	134	318	699	548	35	442	152	5
Norway.....	260	517	144	269	144	172	17	208	821	24
Panama.....	220	618	20	78	1,129	914	8	128	184	5
Philippine Islands.....	500	1,700	341	916	749	658	44	487	2,607	82
Spain.....	517	967	62	106	109	152	126	865	6,123	176
Sweden.....	935	2,024	249	474	151	210	63	576	2,683	69
Union of South Africa.....	182	534	110	495	2	6	64	759	3,077	92
United Kingdom.....	9,571	19,987	2,816	4,791	1,195	1,167	1,534	9,505	64,274	1,515
Other.....	1,091	5,036	653	3,201	660	587	363	4,272	23,249	714
	34,131	79,613	10,867	23,732	17,831	16,173	6,782	48,878	235,263	6,287

¹ Includes natural gasoline.² Less than 500 barrels.

368 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Exports of the major refined products in 1932, by shipping points

[Thousands of barrels of 42 gallons, except as otherwise indicated]

Customs district	Gasoline ¹	Kerosene	Gas oil and fuel oil	Lubricants	Wax (thousands of pounds)
Atlantic coast:					
New England ²	77	4	46	12	1,336
New York.....	758	541	241	2,105	114,186
Philadelphia.....	3,278	591	99	1,663	51,422
South Atlantic ³	253			38	8,090
Gulf coast:					
Florida and Mobile.....	47	6	7	3	
New Orleans.....	3,733	2,453	1,249	264	46,174
Sabine.....	3,671	903	899	1,119	10,277
Galveston.....	7,816	1,995	3,995	872	2,162
Mexican border:					
San Antonio.....	236	3	13	15	278
El Paso and Arizona.....	86	13	63	2	49
Pacific coast:					
San Diego.....	32	10	47	2	(⁴)
Los Angeles.....	8,256	3,013	9,249	44	8
San Francisco.....	4,202	1,283	1,657	325	427
Washington and Oregon.....	20	7	74	12	2
Northern border:					
Western districts ⁵	148	7	23	76	6
Chicago.....	261				
Michigan and Ohio.....	682	18	126	81	89
Buffalo.....	285	18	29	123	660
Rochester and St. Lawrence.....	195		5	26	97
Noncontiguous Territories:					
Alaska.....	4	(⁴)	6	(⁴)	(⁴)
Hawaii.....		(⁴)	(⁴)	(⁴)	
Puerto Rico.....	91	2	3	(⁴)	
	34,131	10,867	17,831	6,782	235,263

¹ Includes natural gasoline.

² Includes customs districts of Maine and New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut.

³ Includes customs districts of Maryland, Virginia, and South Carolina.

⁴ Less than 500 barrels.

⁵ Includes customs districts of Montana and Idaho, Dakota, and Duluth-Superior.

PANAMA CANAL SHIPMENTS

California oil shipped through the Panama Canal to Atlantic and Gulf ports in the United States in 1932, by months¹

[Thousands of barrels of 42 gallons]

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Refined products:													
Gasoline.....	495	180	1,046	544	928	1,340	934	505	871	628	480	445	8,396
Natural gasoline.....	73				72				72		153	73	515
Kerosene.....				81		50		77		75	105	104	570
Gas oil and Diesel oil.....			117	71	80	111	144	279	154	155	532	420	2,063
Fuel oil.....								21		86	170		277
Lubricants.....	2	8		9			9			9		8	45
Asphalt.....	1	1	1		1	1	1						6
Miscellaneous.....	1		1	1	23	14	15		3	26	79	1	164
Total: 1932.....	572	189	1,165	706	1,104	1,588	1,103	882	1,178	979	1,519	1,051	12,036
1931.....	1,748	1,577	1,892	1,563	1,355	1,394	1,283	1,327	1,630	908	1,487	1,441	17,605

¹ Compiled by E. T. Knudsen, of the San Francisco office of the Bureau of Mines.

NATURAL GASOLINE

Production and distribution of natural gasoline in 1932, by months

[Thousands of barrels of 42 gallons]

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Production.....	3,386	3,190	3,240	3,143	3,119	2,855	2,855	2,862	2,836	2,966	2,898	2,931	36,281
Decrease in all stocks.....					75	373	2	200	188	45	408		
	3,386	3,190	3,240	3,143	3,194	3,228	2,857	3,062	3,024	3,011	3,306	2,931	36,281
Blended at refineries.....	2,279	1,787	1,811	1,871	2,012	1,993	1,964	2,026	2,381	2,510	2,293	2,154	25,081
Blended at plants ¹	3	3	3	3	3	3	3	4	4	7	6	7	49
Run through pipe lines ²	118	100	109	127	112	100	108	114	81	84	96	102	1,251
Exports and sales to jobbers.....	440	416	465	428	635	640	513	615	402	272	541	263	5,630
Increase in all stocks.....	143	547	522	310								148	3,879
Losses.....	403	337	330	404	432	492	269	303	156	138	370	257	3,391
	3,386	3,190	3,240	3,143	3,194	3,228	2,857	3,062	3,024	3,011	3,306	2,931	36,281

¹ East of California.

² To refineries in California.

Consumption and stocks of natural gasoline at refineries in 1932, by districts and months

[Thousands of barrels of 42 gallons]

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Consumption:													
East coast.....	129	70	32	33	46	27	16	21	21	41	99	101	641
Appalachian.....	81	32	25	23	23	26	30	26	23	65	40	28	377
Indiana, Illinois, Kentucky, etc.....	226	158	120	99	99	109	96	147	176	199	226	174	1,859
Oklahoma, Kansas, and Mis- souri.....	408	325	350	370	341	370	366	416	472	503	471	455	4,847
Texas inland.....	275	251	228	190	167	214	178	347	464	373	318	243	3,248
Texas Gulf coast.....	271	188	213	299	380	315	329	225	247	288	171	275	3,201
Louisiana Gulf coast.....	74	52	131	54	111	110	118	67	24	44	25	24	834
Arkansas and Louisiana in- land.....	74	70	72	84	69	71	60	76	75	64	49	40	804
Rocky Mountain.....	90	70	71	67	76	86	82	80	99	108	87	75	991
California ¹	701	541	569	642	700	665	689	621	780	825	807	739	8,279
California ²	118	100	109	127	112	100	108	114	81	84	96	102	1,261
Total: 1932.....	2,397	1,887	1,920	1,998	2,124	2,093	2,072	2,140	2,462	2,594	2,389	2,256	26,332
1931.....	2,238	3,091	3,081	2,877	3,097	2,909	2,691	2,542	2,754	3,181	2,959	2,696	35,116
Stocks, end of period:													Dec. 31, 1931
East coast.....	49	147	127	95	60	44	36	21	7	10	25	91	83
Appalachian.....	9	8	3	3	2	2	1	1	2	2	2	2	11
Indiana, Illinois, Kentucky, etc.....	61	58	40	41	34	28	22	31	41	41	35	50	47
Oklahoma, Kansas, and Mis- souri.....	42	41	32	19	25	16	13	23	11	21	24	22	29
Texas inland.....	6	5	6	22	7	7	6	6	6	5	5	4	5
Texas Gulf coast.....	207	317	364	324	311	260	232	167	127	159	192	219	273
Louisiana Gulf coast.....	7	6			2	9	3						2
Arkansas and Louisiana in- land.....	5	11	5	3	2	7	4	3	3	3	5	4	6
Rocky Mountain.....	3	4	3	3	5	4	5	3	3	5	4	5	1
California.....	1,766	2,037	2,502	2,769	2,763	2,703	2,810	2,819	2,716	2,634	2,279	2,351	1,716
Total: 1932.....	2,152	2,633	3,083	3,279	3,211	3,060	3,133	3,074	2,916	2,881	2,571	2,748	2,173
1931.....	2,646	2,596	2,815	3,011	3,033	3,160	2,856	2,492	2,474	2,053	1,945	2,173	

¹ Blended.

² Received by pipe lines.

OIL SHALE

World production of oil shale, 1928-32, in metric tons

[Compiled by M. T. Latus, of the Bureau of Mines]

Country	1928	1929	1930	1931	1932
Australia:					
New South Wales.....			352	2,165	2,734
Tasmania.....	2,637	4,368	5,515	1,425	1,115
Estonia.....	446,117	517,653	497,955	499,495	495,811
France ¹	77,047	78,606	82,500	78,350	(²)
Germany (Bavaria).....	670	693	544	418	401
Great Britain: Scotland.....	2,070,826	2,056,088	2,052,939	1,760,557	1,390,562
Italy.....	1,560	1,331	938	713	1,398
Russia ³		(²)	(²)	(²)	(²)
Spain.....	54,110	54,900	55,147	55,611	64,132
United States.....	1,928	1,767			

¹ Includes some boghead coal.² Data not available.³ Year ended Sept. 30.

EQUIPMENT SURVEYS

Comparative activity in the refining industry in 1932

	January	February	March	April	May	June	July	August	September	October	November	December	Average
Number of refineries reporting.....	342	338	344	345	347	342	338	342	336	339	340	335	341
Total rated capacity per day, thousands of barrels.....	3,676	3,676	3,618	3,533	3,584	3,576	3,568	3,562	3,564	3,557	3,575	3,550	3,586
Daily average crude runs to stills, thousands of barrels.....	2,217	2,200	2,210	2,371	2,409	2,411	2,305	2,170	2,130	2,152	2,183	2,129	2,240
Percentage of runs to capacity.....	60	60	61	67	67	67	65	61	60	61	61	60	62.5

Summary of refinery capacity in the United States, by years

	Number				Capacity (barrels per day)			
	Oper-ating	Shut down	Build-ing	Total	Operating	Shut down	Building	Total
Jan. 1, 1914 ¹				176				
Jan. 1, 1918.....				267				1,186,155
Jan. 1, 1919.....				289				1,295,115
Jan. 1, 1920.....	² 373	(²)	99	472	² 1,530,565	(²)	263,500	1,794,065
Jan. 1, 1921.....	350	65	44	459	1,794,395	94,405	76,600	1,965,400
Jan. 1, 1922.....	325	154	30	509	1,854,590	254,610	59,950	2,169,150
Nov. 1, 1924.....	357	190	8	555	2,480,922	333,410	18,200	2,832,532
Jan. 1, 1925.....	357	184	6	547	2,489,927	337,910	37,000	2,864,837
May 1, 1925.....	365	185	4	554	2,511,817	342,025	11,000	2,864,847
Jan. 1, 1926.....	352	158	2	512	2,562,357	290,610	5,500	2,858,467
Jan. 1, 1927.....	327	138	7	472	2,834,282	226,725	61,000	3,122,007
Jan. 1, 1928.....	326	97	5	428	3,036,125	214,255	22,000	3,272,380
Jan. 1, 1929.....	341	72	14	427	3,325,890	183,650	99,000	3,608,540
Jan. 1, 1930.....	358	54	8	420	3,634,825	130,760	37,200	3,802,785
Jan. 1, 1931.....	346	89	10	445	3,706,610	236,075	45,000	3,987,685
Jan. 1, 1932.....	365	108	6	479	3,624,992	389,616	8,720	4,023,328
Jan. 1, 1933.....	372	133	18	523	3,445,118	444,392	31,545	3,921,055

From the Bureau of the Census.

² Inoperative plants included under operating.

Refinery capacity, Jan. 1, 1933, by districts, States, and types of process

	Number				Capacity (barrels per day)			
	Oper-ating	Shut down	Build-ing	Total	Oper-ating	Shut down	Build-ing	Total
District:								
East coast.....	23	3	1	27	563,000	39,000	15,000	617,000
Appalachian.....	45	9	-----	54	149,530	10,750	-----	160,280
Indiana, Illinois, Kentucky, etc.	36	10	-----	46	438,688	12,050	-----	450,738
Oklahoma, Kansas, Missouri.....	63	16	5	84	449,660	49,980	13,625	513,265
Texas inland.....	89	38	6	133	271,570	124,215	2,250	398,035
Texas Gulf coast.....	14	4	-----	18	497,500	18,500	-----	516,000
Louisiana Gulf coast.....	4	3	-----	7	132,000	32,000	-----	164,000
Arkansas and Louisiana inland.....	15	4	-----	19	79,550	16,900	-----	96,450
Rocky Mountain.....	39	29	6	74	80,485	23,397	670	104,552
California.....	44	17	-----	61	783,135	117,600	-----	900,735
	372	133	18	523	3,445,118	444,392	31,545	3,921,055
State:								
Alabama.....		1	-----	1		6,000	-----	6,000
Arkansas.....	8	1	-----	9	41,500	3,300	-----	44,800
California.....	44	17	-----	61	783,135	117,600	-----	900,735
Colorado.....	5	4	1	10	5,730	1,310	180	7,220
Georgia.....	1	1	-----	2	5,000	4,000	-----	9,000
Illinois.....	9	2	-----	11	128,000	6,700	-----	134,700
Indiana.....	5	1	-----	6	197,000	50	-----	197,050
Iowa.....		1	-----	1		1,500	-----	1,500
Kansas.....	16		4	20	150,380	-----	13,125	163,505
Kentucky.....	8	3	-----	11	28,600	800	-----	29,400
Louisiana.....	11	5	-----	16	170,050	39,600	-----	209,650
Maryland.....	3		-----	3	55,000	-----	-----	55,000
Massachusetts.....	2		-----	2	48,000	-----	-----	48,000
Michigan.....	5	4	-----	9	18,000	4,500	-----	22,500
Missouri.....	2	1	-----	3	22,000	1,500	-----	23,500
Montana.....	12	12	-----	24	17,350	13,950	-----	31,300
Nebraska.....	1		-----	1	60	-----	-----	60
New Jersey.....	6	2	-----	8	255,000	35,000	-----	290,000
New Mexico.....	8	2	-----	10	5,950	300	-----	6,250
New York.....	5		1	6	40,600	-----	15,000	55,600
Ohio.....	12	2	-----	14	97,610	2,500	-----	100,110
Oklahoma.....	44	14	1	59	277,220	46,980	500	324,700
Pennsylvania.....	37	7	-----	44	245,850	8,250	-----	254,100
Rhode Island.....	2		-----	2	6,500	-----	-----	6,500
South Carolina.....	1		-----	1	6,500	-----	-----	6,500
South Dakota.....			1	1	-----	-----	40	40
Tennessee.....	1		-----	1	58	-----	-----	58
Texas.....	103	42	6	151	769,070	142,715	2,250	914,035
Utah.....	2	3	-----	5	7,000	1,350	-----	8,350
Virginia.....	1		-----	1	1,500	-----	-----	1,500
West Virginia.....	6		-----	6	18,000	-----	-----	18,000
Wyoming.....	12	8	4	24	44,455	6,487	450	51,392
	372	133	18	523	3,445,118	444,392	31,545	3,921,055
Type of process:								
Complete.....	83	4	-----	87	1,894,730	12,500	-----	1,907,230
Skimming.....	217	111	18	346	955,963	381,342	31,545	1,368,850
Skimming and asphalt.....	21	1	-----	22	230,200	22,000	-----	252,200
Skimming and lube.....	17	4	-----	21	189,000	4,750	-----	193,750
Topping.....	18	4	-----	22	103,150	14,200	-----	117,350
Asphalt.....	9	7	-----	16	47,700	7,800	-----	55,500
Skimming, lube, and asphalt.....	2	1	-----	3	22,500	-----	-----	22,500
Lube.....	4	1	-----	5	1,575	1,800	-----	3,375
Petrolatum.....	1		-----	1	300	-----	-----	300
	372	133	18	523	3,445,118	444,392	31,545	3,921,055

372 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Summary of cracking capacity, June 1, 1925-26, and Jan. 1, 1928-33

Date	Charging capacity (barrels per day)			
	Operating	Shut down	Building	Total
June 1, 1925	690,492	26,200	116,000	832,692
June 1, 1926	844,800	47,690	47,600	940,090
Jan. 1, 1928	1,013,000	253,000	22,000	1,288,000
Jan. 1, 1929	1,194,501	147,923	134,450	1,476,874
Jan. 1, 1930	1,419,200	139,840	149,900	1,708,940
Jan. 1, 1931	1,594,990	244,661	111,130	1,950,781
Jan. 1, 1932	1,603,809	394,585	48,587	2,046,981
Jan. 1, 1933	1,580,051	417,694	33,650	2,031,395

Cracking capacity, Jan. 1, 1933, by districts and States

	Charging capacity (barrels per day)			
	Operating	Shut down	Building	Total
District:				
East coast	405,879	93,728	-----	499,607
Appalachian	66,114	10,550	1,250	77,914
Indiana, Illinois, Kentucky, etc.	269,600	53,300	800	323,700
Oklahoma, Kansas, and Missouri	198,900	64,050	17,900	280,850
Texas inland	73,150	25,400	7,700	106,250
Texas Gulf coast	301,800	57,100	-----	358,900
Louisiana Gulf coast	47,400	26,200	-----	73,600
Arkansas and Louisiana inland	38,000	12,650	-----	50,650
Rocky Mountain	37,808	12,266	-----	50,074
California	141,400	62,450	6,000	209,850
	1,580,051	417,694	33,650	2,031,395
State:				
Alabama	-----	3,000	-----	3,000
Arkansas	6,500	9,250	-----	15,750
California	141,400	62,450	6,000	209,850
Colorado	3,350	450	-----	3,800
Georgia	3,600	-----	-----	3,600
Illinois	70,600	15,200	800	86,600
Indiana	148,550	19,500	-----	168,050
Iowa	-----	500	-----	500
Kansas	74,800	32,250	17,900	124,950
Kentucky	10,800	600	-----	11,400
Louisiana	78,900	26,600	-----	105,500
Maryland	58,072	1,500	-----	59,572
Massachusetts	29,500	9,800	-----	39,300
Michigan	6,450	-----	-----	6,450
Missouri	16,000	11,000	-----	27,000
Montana	3,000	2,500	-----	5,500
New Jersey	186,907	54,428	-----	241,335
New Mexico	800	-----	-----	800
New York	19,000	600	-----	19,600
Ohio	50,200	19,000	-----	69,200
Oklahoma	108,100	20,300	-----	128,400
Pennsylvania	133,250	35,950	1,250	170,450
Rhode Island	6,000	-----	-----	6,000
Texas	374,950	82,500	7,700	465,150
Utah	7,400	1,000	-----	8,400
West Virginia	18,664	1,000	-----	19,664
Wyoming	23,258	8,316	-----	31,574
	1,580,051	417,694	33,650	2,031,395

Part 1.—BITUMINOUS COAL

(DETAILED STATISTICS)

By W. H. YOUNG, L. MANN, AND F. G. TRYON

The urgent need for economy in public expenditure impels the Bureau of Mines to omit the usual discussion of developments in the coal industry in 1932 and to confine this report to presenting, through selected tables, the essential facts of the statistical record for the year.

The reader is referred to the chapter on Coal in the Minerals Yearbook, 1932-33, pages 381 to 418, for a preliminary discussion of the developments in the coal industry in 1932.

ACKNOWLEDGMENTS

This report marks the fifty-second year of the continuous statistical record of coal production. Like its predecessors, the report is made possible by the voluntary cooperation of those interested in the coal industry, and it is a pleasure to record the generous support of the thousands of individual producers, distributors, and consumers who have supplied information. Detailed reports on production and mine operation have been made by about 5,400 commercial mines and on stocks and consumption by approximately 5,000 representative consumers.

Particularly valuable has been the help afforded by the traffic managers of the coal-originating railroads, who have furnished detailed records of shipments on their lines. For the weekly and daily information on cars of coal loaded, which forms the principal basis of the current estimates of weekly production, the Bureau is under obligations to M. J. Gormley, president, American Railway Association, and particularly to H. E. Ewin and G. Freeburg. Current records of shipments by waterways have been furnished by the United States Engineer Office.

Acknowledgment is also made of the generous help of the State mine inspectors, who have assisted in the collection of returns by furnishing information in their files, thereby increasing the accuracy of the statistics. Data have been given by W. B. Hillhouse, chief mine inspector, Birmingham, Ala.; James Dalrymple, chief inspector of coal mines, Denver, Colo.; J. S. Millhouse, director, department of mines and minerals, Springfield, Ill.; A. G. Wilson, chief mine inspector, Indianapolis, Ind.; P. R. Clarkson, secretary to the mine inspectors, Des Moines, Iowa; William Keegan, State mine inspector, Pittsburg, Kans.; J. F. Daniel, chief inspector of mines, Lexington, Ky.; John J. Rutledge, chief mine engineer, Maryland Bureau of Mines, Baltimore, Md.; Arnold Griffith, chief mine inspector, Joplin, Mo.; Edward Davies, State coal-mine inspector, Helena, Mont.; Edwin Rupp, State coal-mine inspector, Bismarck, N.Dak.; J. B. Gilbert, chief, division of labor statistics, Columbus, Ohio; James R. Ballard, department of mines, Oklahoma City, Okla.; W. H. Glasgow, secretary of mines, department of mines, Harrisburg, Pa.; A. W. Evans,

chief mine inspector, Nashville, Tenn.; C. E. Mick, secretary, bureau of labor statistics, Austin, Tex.; W. A. Wilson, chief mine inspector, Seattle, Wash.; Ernest L. Bailey, chief, department of mines, Charleston, W. Va.; and Lyman Fearn, chief coal-mine inspector, Rock Springs, Wyo.

The Bureau finds of especial value the cooperation of the secretaries of local associations of coal operators on account of their intimate knowledge of conditions in their several districts. Many of them have supplied current reports of production by fields. For information on 1932 the Bureau is indebted to Jonas Waffle, managing director, Coal Trade Association of Indiana, Terre Haute, Ind.; C. E. Reed, secretary, West Kentucky Coal Bureau, Louisville, Ky.; J. E. Johnson, secretary, Hazard Coal Operators' Exchange, Lexington, Ky.; George S. Ward, secretary, Harlan County Coal Operators' Association, Harlan, Ky.; R. F. Chumley, statistician, Utah Coal Producers' Association, Salt Lake City, Utah.; C. B. Neel, secretary, Virginia Coal Operators' Association, Norton, Va.; P. C. Graney, treasurer, Winding Gulf Operators' Association, Beckley, W. Va.; S. C. Higgins, secretary-traffic manager, New River Coal Operators' Association, Mount Hope, W. Va.; T. N. Moran, secretary, Fairmont Coal Operators' Association, Fairmont, W. Va.; A. O. Wilson, statistician, Kanawha Coal Operators' Association, Charleston, W. Va.; D. F. Hurd, secretary, Eastern Ohio Coal Operators' Association, Cleveland, Ohio; Walter A. Jones, secretary, Central Pennsylvania Coal Producers' Association; W. E. E. Koepler, secretary, Pocahontas Operators' Association, Bluefield, W. Va.; and W. J. Colley, secretary, Logan Coal Operators' Association, Logan, W. Va. To these and many others who have supplied information cordial acknowledgment is made.

STATISTICAL SUMMARY

TABLE 1.—*Salient statistics of the coal industry in 1932*

	Bituminous	Anthracite
Production.....net tons.....	309,709,872	49,855,221
Value at mines.....	\$406,677,000	\$222,375,000
Average value per ton.....	\$1.31	\$4.46
Number of active mines of commercial size.....	5,427	(1)
Stocks of commercial consumers:		
Jan. 1.....net tons.....	35,500,000	(2)
Dec. 31.....do.....	29,666,000	(2)
Net change during year.....do.....	-5,834,000	(2)
Exports.....do.....	8,814,047	1,303,000
Imports.....do.....	186,909	607,000
Consumption (calculated).....do.....	306,917,000	50,500,000
Capacity of mines with present labor force (assuming 303.5 working days in the anthracite field and 308 working days in the bituminous field).....net tons.....	653,000,000	94,000,000
Average number of days worked.....	146	162
Average days idle:		
All causes.....	162	142.5
Through strikes and lockouts.....	19	2.4
Other causes.....	143	140.1
Average number employed:		
Underground.....	345,905	94,120
Surface.....	60,475	27,123
Output per man:		
Per day.....net tons.....	5.22	2.54
Per year.....do.....	762	411
Number of cutting machines.....	12,017	207
Quantity cut by machines.....net tons.....	243,954,770	1,674,223
Percent of output cut by machines.....	78.8	3.4
Number of power shovels in strip pits.....	332	234
Quantity mined by stripping.....net tons.....	19,641,128	3,980,973

¹ Data not available.

² Data not available. For changes in producers' stocks see table 2A, p. 440.

METHODS OF COLLECTING STATISTICS

The principal statistics for each State in 1932 are given in table 2. They are based upon written reports from the producers, and most of them were signed by responsible officers of the operating companies. It is believed that virtually complete returns are received for all mines, big and little, which ship by rail or water and for all those of commercial size which serve a purely local market. The figures, however, do not purport to cover the thousands of country banks and small wagon mines from which less than 1,000 tons of coal a year are mined.

In the present report the standard unit of measurement is the net or short ton of 2,000 pounds.

In statistical reports of the Bureau of Mines the anthracite industry of Pennsylvania and the bituminous-coal industry are listed separately. The statistics of the bituminous-coal industry published in this and preceding reports include data for anthracite and semianthracite mined outside of Pennsylvania, as well as for lignite.

More detailed information on the methods of collecting the statistics appears in coal reports for previous years.

As given in this report, the total value is the amount received at the mine f.o.b. cars minus the selling expense. The average value per ton is the average amount received, obtained by dividing the total value by the number of tons sold or produced.

If an operator who is known to have produced coal during the year makes no report of the value of his product to the Bureau of Mines, an estimate of the value is included in the total to make it complete. Since the proportion of the total value actually reported in 1932 was in round numbers 94 percent, the results would seem to be thoroughly representative for the country as a whole. A detailed explanation of the method used in making the estimates and in calculating average values may be found in Coal in 1930, pages 645 and 646.

PRODUCTION

TABLE 2.—Summary of coal produced, value, men employed, days operated, and output per man per day, by States, in 1932

State	Net tons						Value		Number of employees				Average number of days mines operated	Average tons per man per day ¹
	Loaded at mines for shipment	Trucked to distant points	Sold to local trade, used by employees, and nearby trucking	Used at mines for power and heat	Made into coke at mines	Total quantity	Total	Average per ton	Surface		Total			
									In strip pits	All others				
Alabama.....	7,551,144	54,954	197,724	53,117	-----	7,856,939	\$12,138,000	\$1.54	17,734	112	2,597	20,443	107	3.60
Alaska.....	96,500	-----	5,170	1,030	-----	102,700	514,000	5.00	100	-----	20	120	189	4.53
Arizona.....	-----	3,877	3,000	-----	-----	6,877	33,000	4.80	13	-----	4	17	251	1.61
Arkansas.....	1,000,908	60	24,680	7,823	-----	1,033,471	2,831,000	2.74	3,736	50	539	4,325	92	2.61
California, Idaho, and Oregon.....	6,450	464	5,385	4,020	-----	16,319	60,000	3.68	88	-----	53	141	69	1.69
Colorado.....	4,156,106	839,321	427,683	139,474	36,137	5,598,721	12,237,000	2.19	7,346	14	1,389	8,749	142	4.51
Georgia.....	26,348	-----	135	725	-----	27,208	45,000	1.76	53	-----	11	64	208	2.04
Illinois.....	28,793,563	1,069,634	3,121,819	489,537	-----	33,474,553	51,316,000	1.53	39,998	1,693	5,906	47,597	112	6.30
Indiana.....	12,186,044	206,519	730,880	200,130	-----	13,323,573	17,267,000	1.30	7,629	1,592	1,418	10,639	145	8.65
Iowa.....	2,651,754	248,225	930,204	32,252	-----	3,862,435	9,254,000	2.40	7,183	107	796	8,086	151	3.17
Kansas.....	1,695,950	32,659	202,979	21,297	-----	1,952,885	3,420,000	1.75	2,630	625	336	3,591	130	4.19
Kentucky.....	34,229,444	67,820	756,497	245,821	-----	35,299,582	34,892,000	.99	35,760	30	6,477	42,267	155	5.41
Maryland.....	1,287,606	11,101	122,738	7,492	-----	1,428,937	1,827,000	1.28	2,748	-----	357	3,105	160	3.07
Michigan.....	341,416	37,667	47,260	19,806	-----	446,149	1,219,000	2.73	852	-----	88	940	159	2.98
Missouri.....	3,470,056	96,488	471,034	32,020	-----	4,069,598	6,654,000	1.64	4,111	890	676	5,677	161	4.45
Montana.....	2,001,413	10,739	102,666	10,407	-----	2,125,225	3,527,000	1.66	1,139	47	339	1,625	145	9.64
New Mexico.....	1,147,766	4,325	56,343	54,952	-----	1,263,386	3,321,000	2.63	2,225	-----	377	2,602	127	3.82
North Carolina.....	150	450	1,100	200	-----	1,900	6,000	3.16	20	-----	6	26	55	1.33
North Dakota.....	1,344,621	41,690	295,350	57,997	-----	1,739,658	2,200,000	1.26	696	304	311	1,311	186	7.12
Ohio.....	11,972,845	227,967	1,638,231	70,408	-----	13,909,451	15,418,000	1.11	20,254	300	2,726	23,280	127	4.71
Oklahoma.....	1,190,101	1,864	45,190	18,311	-----	1,255,466	2,646,000	2.11	2,389	217	457	3,063	120	3.40
Pennsylvania, bituminous.....	68,022,893	1,055,485	4,263,827	657,057	776,600	74,775,862	100,361,000	1.34	92,927	97	11,508	104,632	124	4.66
South Dakota.....	26,494	10,886	11,669	25	-----	49,074	87,000	1.77	16	49	19	84	156	4.65
Tennessee.....	3,343,651	41,359	88,524	42,028	22,320	3,537,882	4,670,000	1.32	6,445	-----	1,080	7,525	148	3.18
Texas.....	624,072	626	7,669	7,669	-----	636,990	904,000	1.42	565	27	107	699	152	6.00
Utah.....	2,768,445	20,045	40,791	9,648	13,098	2,852,127	5,685,000	1.99	2,155	-----	687	2,842	178	5.69
Virginia.....	7,461,381	5,836	98,025	31,452	-----	7,952,180	9,280,000	1.21	8,760	-----	1,616	10,376	144	5.16
Washington.....	1,300,028	93,957	179,296	16,939	1,206	1,591,428	4,759,000	2.99	2,284	4	528	2,816	161	3.51

West Virginia.....	82,952,472	32,086	2,141,023	399,543	83,611	85,608,735	90,786,000	1.06	72,679	-----	13,086	85,765	168	5.93
Wyoming.....	3,858,098	34,165	128,991	149,709	-----	4,170,963	9,317,000	2.23	3,370	10	793	4,173	150	6.65
Total bituminous, 1932.	285,507,819	² 4,250,269	16,142,437	2,780,889	1,028,458	309,709,872	406,677,000	1.31	345,905	6,168	54,307	406,380	146	5.22
Total bituminous, 1931.	357,278,053	19,878,462	-----	3,205,199	1,727,682	382,089,396	588,895,000	1.54	387,794	6,205	56,214	450,213	160	5.30
Pennsylvania anthracite, 1932.	³ 43,894,723	2,810,337	-----	3,150,161	-----	49,855,221	222,375,000	4.46	94,120	2,407	24,716	121,243	162	2.54
Pennsylvania anthracite, 1931.	³ 52,768,749	2,901,117	-----	3,985,786	-----	59,645,652	296,355,000	4.97	109,280	2,232	27,919	139,431	181	2.37
Grand total, 1932.....	³ 329,402,542	² 4,250,269	18,952,774	5,931,050	1,028,458	359,565,093	629,052,000	1.75	440,025	8,575	79,023	527,623	150	4.55
Grand total, 1931.....	³ 410,036,802	22,779,579	-----	7,190,985	1,727,682	441,735,048	885,250,000	2.00	497,074	8,437	84,133	589,644	165	4.54

¹ Based upon (1) the "reported" number of man-shifts where the operator keeps a record thereof; otherwise upon (2) the "calculated" number of man-shifts obtained by multiplying the average number of men employed underground and on the surface at each mine by the number of days worked by the mine and tippie, respectively. Using a "calculated" method throughout, the average output per man per day for the country as a whole was 5.33 in the bituminous mines; 2.63 in the anthracite mines; 4.66 in the bituminous and anthracite mines combined in 1932. These figures are strictly comparable with 5.30 in 1931 and 5.06 in 1930 in the bituminous mines; 2.37 in 1931 and 2.21 in 1930 in the anthracite mines; 4.54 in 1931 and 4.34 in 1930 in bituminous and anthracite mines combined, as previously published.

² Includes 616,974 tons, part of which went less than 10 miles from the mines; separation not possible.

³ Includes 122,894 tons of anthracite stored at collieries in 1931 and 33,060 tons in 1932.

RELATIVE RATE OF GROWTH OF COAL AND OTHER SOURCES OF POWER

TABLE 3.—Annual supply of energy from mineral fuels and water power in the United States, 1913, 1923, and 1929-32

[Figures represent trillions of British thermal units and because of rounding do not always add across exactly. In calculating thermal equivalents the gross British thermal unit values are used. Water power is represented by British thermal units of coal necessary to produce the same amount of power. Figures represent production except those for oil imports and take no account of changes of stock. Corresponding data for earlier years will be found in Coal in 1930, p. 623]

Year	Anthracite	Bituminous coal	Total coal	Domestic oil (total crude, including that refined)	Natural gas (total production)	Imported oil (total crude, including that refined)	Total oil and gas	Total mineral fuels	Water power	Grand total including water power
1913.....	2,490	12,535	15,025	1,491	626	102	2,219	17,243	588	17,831
1923.....	2,539	14,791	17,330	4,394	1,082	492	5,968	23,298	1,136	24,434
1929.....	2,008	14,017	16,025	6,044	2,062	474	8,580	24,605	1,929	26,534
1930.....	1,887	12,249	14,136	5,388	2,089	373	7,850	21,986	1,856	23,842
1931.....	1,622	10,011	11,633	5,106	1,813	284	7,203	18,836	1,721	20,557
1932.....	1,356	8,114	9,470	4,711	1,673	268	6,652	16,122	1,900	18,022

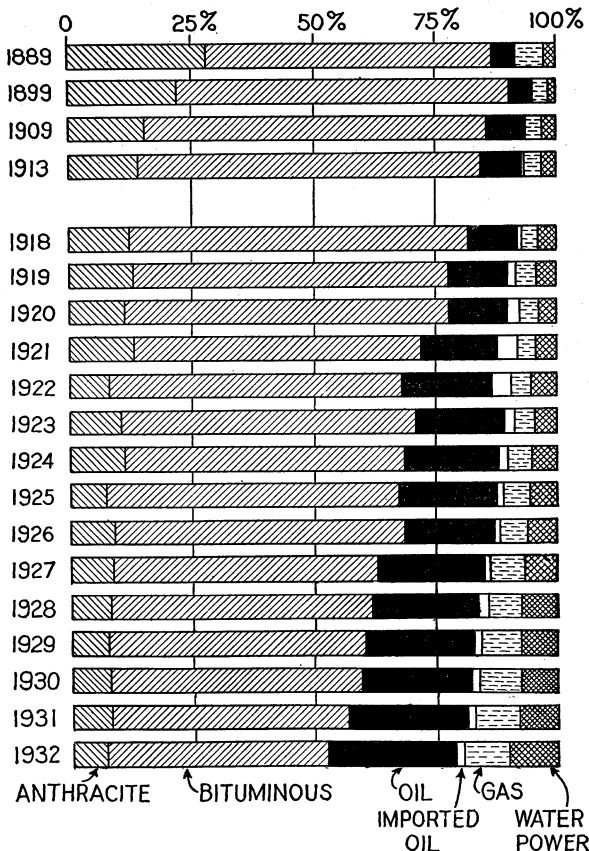


FIGURE 1.—Percentage of the energy supply of the United States derived from coal, oil, gas, and water power, 1889-1932.

TOTAL PRODUCTION SINCE BEGINNING OF MINING

TABLE 4.—Coal produced, by States, 1931 and 1932, with cumulative production from the earliest record to the end of 1932, in thousands of net tons

State	1931	1932	Total production from earliest record to end of 1932	State	1931	1932	Total production from earliest record to end of 1932
Alabama.....	11,999	7,857	576,890	Oklahoma.....	1,908	1,255	122,215
Arkansas.....	1,154	1,033	66,337	Oregon.....	(¹)	(¹)	² 2,380
Colorado.....	6,604	5,599	360,908	Pennsylvania, bituminous.....	97,659	74,776	5,406,770
Georgia.....	22	27	10,796	Tennessee.....	4,721	3,538	227,827
Illinois.....	44,303	33,475	2,180,152	Texas.....	716	637	53,271
Indiana.....	14,295	13,324	641,194	Utah.....	3,350	2,852	116,519
Iowa.....	3,388	3,862	290,929	Virginia.....	9,699	7,692	296,394
Kansas.....	1,987	1,953	215,815	Washington.....	1,846	1,591	116,961
Kentucky.....	39,964	35,300	999,975	West Virginia.....	101,473	85,609	2,722,102
Maryland.....	2,006	1,429	231,858	Wyoming.....	4,994	4,171	250,399
Michigan.....	359	446	41,071	Other States.....	158	175	46,227
Missouri.....	3,621	4,070	193,780	Total bituminous.....	382,089	309,710	16,623,698
Montana.....	2,378	2,125	101,638	Pennsylvania anthracite.....	59,646	49,855	3,971,054
New Mexico.....	1,553	1,263	97,584	Grand total.....	441,735	359,565	20,594,752
North Carolina.....	2	2	1,015				
North Dakota.....	1,519	1,740	27,865				
Ohio.....	20,411	13,909	1,224,826				

¹ Included under "Other States."² Total through 1920.

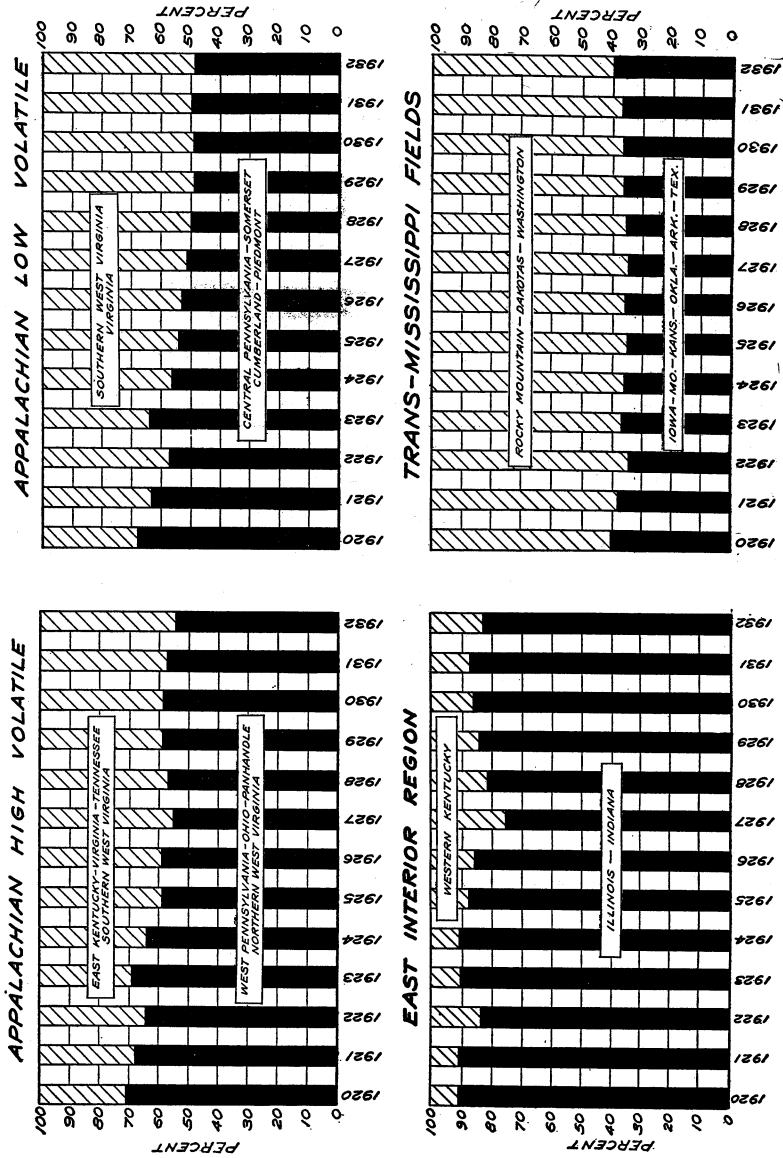


Figure 2.—Relative proportions of the total coal output of four regions coming from northern and southern or eastern and western fields, 1920-32.

PRODUCTION, BY FIELDS

TABLE 5.—Bituminous coal produced, number of mines active, men employed, days operated, and output per man per day in the several fields adopted by the U.S. Coal Commission, 1931 and 1932

[The definitions of these fields are given in detail on pp. 2034-2052, pt. IV, of the report of the U.S. Coal Commission]

U. S. Coal Commission field no.	State	General name of field	1931					1932				
			Number of mines	Production (net tons)	Number of men	Average number of days operated	Average tons per man per day	Number of mines	Production (net tons)	Number of men	Average number of days operated	Average tons per man per day ¹
1	Pennsylvania	Pittsburgh	175	24,478,000	24,853	188	5.25	163	20,233,000	23,527	184	4.68
2	do	Connellsville	112	17,009,000	18,585	163	5.60	94	10,316,000	14,273	139	5.19
3	do	Westmoreland-Ligonier	74	7,819,000	8,713	157	5.72	70	5,763,000	7,915	137	5.32
4a, b	do	Freeport (thick and thin)	71	7,785,000	7,399	181	5.80	62	6,080,000	6,779	155	5.80
5	do	Butler-Mercer	69	1,069,000	2,302	155	2.99	52	788,000	1,910	136	3.03
6	do	Blossburg	15	230,000	597	171	2.26	14	232,000	606	162	2.36
7	do	Broad Top	37	1,043,000	1,836	173	3.30	37	1,048,000	1,948	179	3.00
8	do	Somerset	111	5,406,000	6,602	183	4.48	88	3,547,000	5,194	145	4.71
9a	do	Central Pennsylvania, western	49	2,012,000	2,853	171	4.13	47	1,828,000	2,736	157	4.25
9b	do	Central Pennsylvania, middle	83	8,226,000	9,931	179	4.62	76	6,425,000	9,390	140	4.90
9c	do	Central Pennsylvania, eastern	451	22,575,000	33,055	152	4.50	390	18,518,000	30,254	146	4.20
10	Maryland-West Virginia	Maryland-Potomac	101	3,122,000	4,977	183	3.43	106	2,303,000	4,849	144	3.29
11	West Virginia	Fairmont	118	16,237,000	12,916	181	6.93	106	12,956,000	9,984	181	7.18
12	Ohio-West Virginia	Panhandle-Pittsburgh No. 8	141	14,480,000	14,596	190	5.22	130	10,808,000	12,882	157	5.36
13	do	Pomeroy	24	400,000	646	154	4.03	31	304,000	753	125	3.22
14	West Virginia	Putnam County	3	305,000	435	115	6.08	3	312,000	595	119	4.40
15	Kentucky-West Virginia	Kenova	17	2,045,000	1,860	160	6.89	16	1,939,000	1,670	175	6.64
16	do	Thacker	47	5,813,000	5,943	168	5.82	36	4,224,000	4,911	133	6.46
17	West Virginia	Tug River	46	6,818,000	6,840	179	5.42	36	4,607,000	5,992	135	5.71
18	Virginia-West Virginia	Pocahontas	76	14,569,000	15,434	156	6.05	70	12,758,000	14,261	144	6.19
19	West Virginia	Winding Gulf	56	9,869,000	8,318	216	5.48	52	8,468,000	7,637	196	5.66
20	do	New River	96	11,646,000	12,972	184	4.87	89	10,200,000	11,679	178	4.91
21	do	Kanawha	101	13,167,000	13,810	179	5.34	89	11,793,000	12,052	183	5.36
22	do	Coal River	11	1,502,000	1,531	165	5.96	6	1,163,000	1,036	177	6.34
23	do	Logan	74	14,556,000	10,095	179	8.04	58	12,478,000	9,134	172	7.94
24a	do	Coal and Coke	6	579,000	623	175	5.32	4	528,000	634	178	4.67

¹ Based upon (1) the "reported" number of man-shifts where the operator keeps a record thereof; otherwise upon (2) the "calculated" number of man-shifts obtained by multiplying the average number of men employed underground and on the surface at each mine by the number of days worked by the mine and tippie, respectively. Using a "calculated" method throughout, the average output per man per day for the country as a whole was 5.33 in the bituminous mines. These figures are strictly comparable with 5.30 in 1931 and 5.06 in 1930 in the bituminous mines, as previously published.

TABLE 5.—Bituminous coal produced, number of mines active, men employed, days operated, and output per man per day in the several fields adopted by the U.S. Coal Commission, 1931 and 1932—Continued

U.S. Coal Commission field no.	State	General name of field	1931					1932				
			Number of mines	Production (net tons)	Number of men	Average number of days operated	Average tons per man per day	Number of mines	Production (net tons)	Number of men	Average number of days operated	Average tons per man per day
24b	West Virginia	Preston County	31	808,000	1,477	120	4.57	27	550,000	1,316	113	3.71
24c	do.	Taylor County, Junior, Philippi, and Gauley.	88	3,604,000	4,614	148	5.27	82	3,137,000	3,702	153	5.53
25	Virginia	Southwestern Virginia	56	6,347,000	7,271	168	5.20	51	5,051,000	6,553	139	5.53
26	do.	Clinch Valley	16	1,841,000	2,369	188	4.14	15	1,444,000	2,145	152	4.42
27	do.	Virginia "anthracite"	6	183,000	546	176	1.91	7	194,000	649	154	1.94
28	do.	Richmond Basin										
29	Ohio	Massillon-Palmyra-Lisbon	79	1,606,000	2,116	209	3.64	108	1,416,000	2,382	184	3.23
30	do.	Coshocton-Goshen	141	1,989,000	2,816	157	4.50	126	1,121,000	1,904	142	4.13
31	do.	Cambridge	37	1,958,000	1,952	215	4.67	38	1,655,000	1,792	178	5.20
32	do.	Crooksville	42	810,000	1,289	168	3.75	47	616,000	821	146	4.31
33	do.	Hocking	50	2,884,000	4,928	139	4.21	85	1,677,000	5,480	72	4.00
34	do.	Jackson and Ironton	39	377,000	850	145	3.05	38	208,000	837	83	2.99
36	Kentucky	Northeast Kentucky ²	88	9,135,000	11,470	162	4.92	79	7,841,000	9,934	159	4.95
37	do.	Hazard ³	66	6,215,000	6,233	183	5.46	59	5,533,000	6,040	171	5.37
38	do.	Harlan	54	9,588,000	10,211	176	5.33	48	7,011,000	8,004	157	5.57
39	Kentucky-Tennessee	Southern Appalachian	99	4,827,000	7,894	153	4.01	113	3,973,000	7,236	141	3.90
40	do.	Jellico	19	408,000	950	115	3.73	17	298,000	926	89	3.60
41	Kentucky	Western Kentucky	117	8,580,000	11,225	130	5.88	144	9,540,000	10,804	149	5.92
42	Tennessee	Rockwood-Soddy	33	1,682,000	2,816	173	3.46	30	1,394,000	3,135	172	2.58
43	do.	Fentress	5	621,000	644	224	3.62	6	179,000	589	94	3.23
44	Alabama	Big Seam Group	43	5,011,000	6,601	170	4.47	38	3,474,000	6,275	130	4.26
45	Alabama-Georgia	Cahaba Group	94	3,402,000	7,960	127	3.36	96	2,370,000	6,981	106	3.21
46	Alabama	Pratt Group	65	3,607,000	8,474	118	3.60	61	2,040,000	7,251	88	3.19
47	Indiana	Indiana	150	13,776,000	11,899	146	7.94	142	12,813,000	10,196	144	8.74
48	do.	Brazil Block	18	619,000	412	154	8.20	20	510,000	443	169	6.82
49	Illinois	Northern Illinois	46	1,625,000	1,842	147	5.62	48	1,731,000	2,287	179	4.24
50	do.	Fulton-Peoria	148	3,908,000	4,273	161	5.69	167	3,473,000	4,458	143	5.45
51	do.	Danville	49	2,508,000	2,967	138	6.12	61	1,900,000	3,133	111	5.47
52	do.	Central Illinois	79	12,329,000	13,535	147	6.18	80	6,886,000	13,133	91	5.78
53	do.	Belleville	86	5,499,000	5,869	130	7.21	96	4,480,000	5,809	105	7.34
54	do.	Murphysboro	9	383,000	194	103	19.09	8	403,000	186	167	12.97
55	do.	Southern Illinois	119	18,151,000	21,005	125	6.91	126	14,601,000	18,591	112	7.00
56	Michigan	Michigan	6	359,000	1,372	96	2.74	5	446,000	940	159	2.98
57	Arkansas	Sebastian	23	585,000	2,074	105	2.69	24	564,000	1,890	107	2.79
58	do.	Excelsior-Logan	29	319,000	1,076	105	2.82	25	275,000	989	105	2.64
59	do.	Arkansas "anthracite"	17	249,000	1,583	74	2.12	16	194,000	1,446	62	2.15

60	Colorado	Colorado "domestic"	158	2,585,000	4,937	122	4.29	149	2,238,000	4,043	128	4.31
61	do	Trinidad	34	1,338,000	2,566	130	4.04	33	860,000	2,066	104	4.02
62	do	Northern Colorado	39	2,682,000	2,585	194	5.46	50	2,501,000	2,640	193	4.92
63	Iowa	Marion-Monroe-Polk	150	2,452,000	4,838	152	3.34	139	2,794,000	5,061	160	3.45
64	do	Appanoose	81	937,000	3,059	127	2.41	73	1,068,000	3,025	136	2.60
65	Kansas	Pittsburg	114	1,860,000	2,923	104	6.12	113	1,800,000	2,796	108	5.96
66	do	Lightning Creek										
67	do	Osage											33	57,000	444	95	1.35	33	72,000	405	116	1.54
68	do	Leavenworth ⁴	4	100,000	625	222	.72	3	113,000	567	235	.85
69	Missouri	Southern Missouri	101	2,862,000	2,357	163	7.44	103	3,162,000	2,494	173	7.34
70	do	Lafayette	98	730,000	2,826	128	2.02	102	875,000	3,006	155	1.87
71	do	Grundy	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)
72	do	Platte	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)
73	Montana	Montana	79	2,378,000	1,672	153	9.27	62	2,125,000	1,525	145	9.64
74	New Mexico	Gallup	14	708,000	1,235	137	4.20	13	572,000	1,231	124	3.76
75	do	Cerrillos and Carthage	8	162,000	577	213	1.32	7	133,000	427	188	1.66
76	do	Raton	9	658,000	952	112	6.19	11	535,000	880	101	6.04
76a	do	Monero	11	25,000	66	187	2.03	11	24,000	64	156	2.40
77	North Dakota	Southern North Dakota	104	899,000	885	174	5.85	89	1,017,000	878	176	6.57
78	do	Northern North Dakota	65	620,000	415	150	9.97	57	723,000	433	207	8.06
79	Oklahoma	McAlester Vein	15	235,000	741	128	2.48	11	151,000	487	125	2.49
80	do	Oklahoma, eastern	91	1,674,000	3,893	112	3.83	84	1,104,000	2,576	120	3.58
81	Texas	Texas (bituminous)	4	60,000	459	137	.96	3	23,000	215	100	1.07
82	do	Texas (lignite)	18	656,000	689	142	6.70	15	614,000	484	175	7.25
83	Utah	Utah	41	3,350,000	3,268	140	7.34	39	2,852,000	2,842	176	5.69
84	Washington	Kittitas County	7	794,000	1,007	154	5.12	11	698,000	1,216	140	4.11
85	do	Pierce-King (bituminous)	16	341,000	614	174	3.20	19	295,000	617	179	2.67
86	do	Subbituminous	27	711,000	1,041	182	3.75	32	598,000	983	177	3.45
87	Wyoming	Wyoming	66	4,994,000	4,759	154	6.81	65	4,171,000	4,173	150	6.65
88	South Dakota	South Dakota	19	28,000	56	127	3.94	19	49,000	84	126	4.64
89	Oregon	Oregon	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)
90	California	California ⁵	10	17,000	116	86	1.71	10	16,000	141	69	1.65
91	Nevada	Nevada	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)
92	North Carolina	North Carolina	3	2,000	32	83	.76	3	2,000	26	55	1.40
	Unclassified		12	113,000	107	236	4.47	10	110,000	137	197	4.08
			5,642	382,089,000	450,213	160	5.30	5,427	309,710,000	406,380	146	5.22

¹ Northeast Kentucky field includes McRoberts district.

² Hazard field includes Whitesburg district.

⁴ Leavenworth field, Kansas, includes Grundy field, Missouri (no. 71), and Platte field, Missouri (no. 72).

⁵ California includes Idaho, Nevada, and Oregon in 1931 and Idaho and Oregon in 1932.

PRODUCTION, BY WEEKS AND MONTHS

The following tables summarize the statistics of weekly and monthly production of bituminous coal first published in the Bureau of Mines weekly coal reports. The figures are estimates based upon daily and weekly statements of cars of coal and beehive coke loaded by the principal railroads and of shipments over the Monongahela, Allegheny, Ohio, and Kanawha Rivers. The estimates are revised afterward to agree with the results of the annual statistical reports from the coal producers, therefore the figures given here differ slightly from the estimates originally issued in the weekly reports.

For the method used in counting holidays see Coal in 1930, page 631.

TABLE 6.—Estimated weekly production of bituminous coal in 1932

Week ended—	Production (net tons)	Number of work- ing days	Average production per working day (net tons)	Week ended—	Production (net tons)	Number of work- ing days	Average production per working day (net tons)
Jan. 2.....	1,298,000	1 1.3	² 1,154,000	July 16.....	4,210,000	6	702,000
Jan. 9.....	7,022,000	6	1,170,000	July 23.....	4,458,000	6	743,000
Jan. 16.....	6,978,000	6	1,163,000	July 30.....	4,698,000	6	783,000
Jan. 23.....	6,467,000	6	1,078,000	Aug. 6.....	4,524,000	6	754,000
Jan. 30.....	6,496,000	6	1,083,000	Aug. 13.....	4,737,000	6	790,000
Feb. 6.....	7,346,000	6	1,224,000	Aug. 20.....	5,015,000	6	836,000
Feb. 13.....	6,714,000	6	1,119,000	Aug. 27.....	5,390,000	6	898,000
Feb. 20.....	6,718,000	6	1,120,000	Sept. 3.....	5,719,000	6	953,000
Feb. 27.....	6,416,000	5.8	1,106,000	Sept. 10.....	5,374,000	5.3	1,014,000
Mar. 5.....	5,847,000	6	975,000	Sept. 17.....	6,226,000	6	1,038,000
Mar. 12.....	8,152,000	6	1,359,000	Sept. 24.....	6,409,000	6	1,068,000
Mar. 19.....	7,840,000	6	1,307,000	Oct. 1.....	6,880,000	6	1,147,000
Mar. 26.....	7,356,000	6	1,226,000	Oct. 8.....	7,351,000	6	1,225,000
Apr. 2.....	5,940,000	5.7	1,042,000	Oct. 15.....	7,992,000	6	1,332,000
Apr. 9.....	4,706,000	6	784,000	Oct. 22.....	7,954,000	6	1,326,000
Apr. 16.....	5,015,000	6	836,000	Oct. 29.....	7,574,000	6	1,262,000
Apr. 23.....	4,799,000	6	800,000	Nov. 5.....	7,397,000	6	1,235,000
Apr. 30.....	4,779,000	6	797,000	Nov. 12.....	6,724,000	5.2	1,293,000
May 7.....	4,534,000	6	756,000	Nov. 19.....	7,895,000	6	1,316,000
May 14.....	4,352,000	6	725,000	Nov. 26.....	6,611,000	5	1,322,000
May 21.....	4,355,000	6	726,000	Dec. 3.....	6,839,000	6	1,140,000
May 28.....	4,306,000	6	718,000	Dec. 10.....	6,918,000	6	1,153,000
June 4.....	3,688,000	5.3	696,000	Dec. 17.....	7,942,000	6	1,324,000
June 11.....	4,028,000	6	671,000	Dec. 24.....	7,768,000	6	1,295,000
June 18.....	4,102,000	6	684,000	Dec. 31.....	5,877,000	5	1,175,000
June 25.....	4,210,000	6	702,000				
July 2.....	4,124,000	6	687,000				
July 9.....	3,640,000	5	728,000		309,710,000	307.6	1,007,000

¹ Figures represent output and number of working days in that part of the week included in the calendar year shown. Total production for the week of January 2, 1932 was 6,117,000 net tons.

² Average daily production for the entire week and not for the working days in the calendar year shown.

TABLE 7.—Estimated monthly production of coal, by States, in 1932, in thousands of net tons

State	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Alabama.....	707	666	708	620	606	509	469	593	646	801	769	763	7,857
Arkansas.....	125	107	64	22	25	23	8	26	113	234	158	128	1,033
Colorado.....	761	598	553	275	207	210	176	272	529	646	597	775	5,599
Illinois.....	4,118	4,470	6,388	373	548	633	797	1,779	2,555	3,554	3,890	4,370	33,475
Indiana.....	1,259	1,338	1,743	566	717	774	744	810	1,092	1,419	1,374	1,483	13,324
Iowa.....	391	408	424	293	229	248	211	236	514	346	366	396	3,862
Kansas.....	227	197	171	109	94	97	82	107	163	234	230	242	1,933
Kentucky:													
Eastern.....	1,860	1,960	2,338	1,644	1,641	1,705	1,696	2,317	2,605	2,974	2,637	2,383	25,760
Western.....	740	709	803	568	680	665	782	843	850	1,033	852	1,015	9,540
Maryland.....	157	163	171	125	92	71	70	84	103	122	119	152	1,429
Michigan.....	54	54	62	40	18	3	9	13	30	47	53	58	446
Missouri.....	403	395	415	205	207	253	271	289	299	406	449	473	4,070
Montana.....	227	236	196	105	108	109	79	106	191	247	269	252	2,125
New Mexico.....	146	112	104	96	80	81	65	88	98	128	135	130	1,263
North Dakota.....	227	208	175	75	61	52	41	56	131	232	241	241	1,740
Ohio.....	1,622	1,460	1,587	412	371	421	679	951	1,191	1,705	1,677	1,833	13,909
Oklahoma.....	139	97	82	34	32	41	64	59	111	211	212	173	1,255
Pennsylvania, bituminous.....	6,129	6,070	6,930	6,732	5,366	5,006	4,989	5,725	6,204	7,574	7,119	6,952	74,776
Tennessee.....	333	306	365	252	233	234	218	251	284	364	328	370	3,538
Texas.....	58	52	52	44	45	57	50	52	57	58	54	58	637
Utah.....	411	364	206	144	107	88	78	153	238	309	298	456	2,852
Virginia.....	665	677	701	520	492	499	490	596	720	807	760	775	7,692
Washington.....	173	176	149	122	103	103	78	94	127	144	149	168	1,591
West Virginia.....	6,884	7,107	7,932	6,898	6,292	5,834	5,781	6,992	7,602	9,001	7,866	7,420	85,609
Wyoming.....	422	427	342	280	259	249	183	283	395	492	414	425	4,171
Other States.....	23	26	10	14	9	14	13	11	14	22	22	26	204
Total bituminous.....	28,261	28,383	32,676	20,568	18,627	17,984	18,093	22,786	26,662	33,110	31,038	31,522	309,710
Pennsylvania anthracite.....	3,937	4,061	4,838	5,686	3,311	2,576	3,052	3,500	4,151	5,287	4,315	5,141	49,855
Grand total.....	32,198	32,444	37,514	26,254	21,938	20,560	21,145	26,286	30,813	38,397	35,353	36,663	359,565

COAL

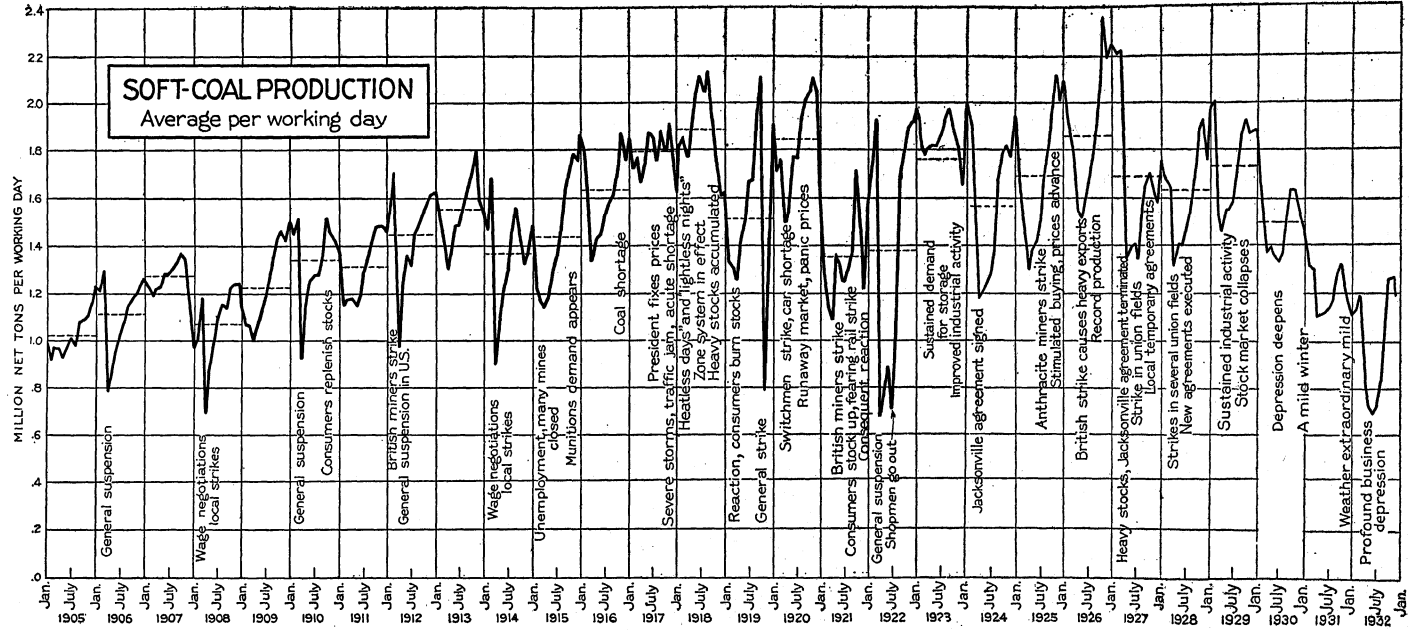


FIGURE 3.—Average production of bituminous coal per working day in each month, 1905-32.

NUMBER AND SIZE OF MINES

TABLE 8.—*Number and production of commercial bituminous-coal mines, by size classes, in each State, in 1932*

[No canvass of wagon mines producing less than 1,000 tons was made]

State	Class 1A (more than 500,000 tons)					Class 1B (200,000 to 500,000 tons)					Class 2 (100,000 to 200,000 tons)					Class 3 (50,000 to 100,000 tons)				
	Mines		Production			Mines		Production			Mines		Production			Mines		Production		
	Number	Per cent	Total (net tons)	Average per mine (net tons)	Per cent	Number	Per cent	Total (net tons)	Average per mine (net tons)	Per cent	Number	Per cent	Total (net tons)	Average per mine (net tons)	Per cent	Number	Per cent	Total (net tons)	Average per mine (net tons)	Per cent
Alabama.....					7	3.6	1,884,211	269,173	24.0	19	9.8	2,717,814	143,043	34.6	27	13.9	2,070,001	76,667	26.3	
Arkansas.....										1	1.5	133,500	133,500	12.9	3	4.6	204,097	68,032	19.8	
Colorado.....					3	1.3	701,639	233,880	12.5	16	6.9	2,087,061	130,441	37.3	18	7.7	1,319,451	73,303	23.6	
Illinois.....	16	2.7	11,077,653	692,353	33.1	42	7.2	13,436,219	319,910	40.1	25	4.3	3,752,598	150,104	11.2	26	4.4	1,906,450	73,287	5.7
Indiana.....	4	2.5	2,263,693	565,925	17.0	18	11.1	5,731,569	318,421	43.0	24	14.8	3,255,844	135,660	24.4	13	8.0	1,029,392	79,184	7.7
Iowa.....					4	1.9	999,375	249,844	25.9	4	1.9	621,730	155,433	16.1	12	5.7	845,235	70,436	21.9	
Kansas.....										6	4.1	832,807	138,801	42.7	6	4.1	467,355	77,893	23.9	
Kentucky:																				
Eastern.....	3	1.0	2,239,948	746,649	8.7	34	11.5	9,811,003	288,559	38.1	58	19.6	8,288,520	142,906	32.2	42	14.2	3,093,717	73,660	12.0
Western.....	2	1.4	1,137,316	568,658	11.9	12	8.3	3,551,609	295,967	37.2	24	16.7	3,286,118	136,922	34.5	10	6.9	745,640	74,554	7.8
Maryland.....										3	3.7	339,522	113,174	23.8	8	10.0	544,808	68,101	38.1	
Missouri.....					6	2.4	1,566,887	313,377	38.5	7	3.4	934,754	133,536	23.0	6	2.9	401,634	66,922	9.9	
Montana.....	1	1.6	745,272	745,272	35.1	2	3.2	580,894	290,447	27.3	4	6.5	535,296	133,824	25.2	1	1.6	54,442	54,442	2.5
New Mexico.....					2	4.8	455,133	227,567	36.0	2	4.8	240,497	120,249	19.0	3	7.1	209,803	69,934	16.6	
North Dakota.....					2	1.4	555,249	277,625	31.9	4	2.7	643,405	160,851	37.0	1	.7	59,520	59,520	3.4	
Ohio.....	3	.5	1,744,323	581,441	12.5	17	3.1	5,133,443	301,967	36.9	17	3.1	2,299,178	135,246	16.5	33	5.9	2,447,277	74,160	17.6
Oklahoma.....					1	1.1	108,460	108,460	8.6	4	4.2	219,553	54,888	15.7	4	4.2	219,553	54,888	15.7	
Pennsylvania.....	23	2.1	16,737,412	727,714	22.4	92	8.4	29,447,402	320,080	39.4	88	8.1	12,345,567	140,291	16.5	100	9.1	7,330,300	73,303	9.8
Tennessee.....					1	1.3	216,049	216,049	6.1	10	13.3	1,303,205	130,321	36.8	16	21.3	1,117,255	69,828	31.6	
Texas.....					1	5.6	290,758	290,758	45.7						2	11.1	139,151	69,576	21.9	
Utah.....					6	15.4	1,442,146	240,358	50.6	6	15.4	814,428	135,738	28.6	4	10.3	243,016	60,754	8.5	
Virginia.....	3	3.9	1,516,212	505,404	19.7	6	7.8	1,773,360	295,560	23.1	19	24.7	2,867,421	150,391	37.1	14	18.2	996,154	71,154	12.9
Washington.....					1	1.6	244,541	244,541	15.4	5	8.1	793,326	158,665	49.8	3	4.8	206,583	68,861	13.0	
West Virginia.....	27	3.7	17,970,468	665,572	21.0	121	16.7	37,294,032	308,215	43.6	122	16.8	17,488,657	143,350	20.4	108	14.9	7,783,518	72,070	9.1
Wyoming.....					7	10.8	1,804,844	257,835	43.3	10	15.4	1,534,033	153,403	36.8	7	10.8	553,023	79,003	13.2	
Other States ¹										2	9.1	348,610	174,305	61.7	2	9.1	132,073	66,037	23.4	
	82	1.5	55,432,302	676,004	17.9	383	7.1	116,920,363	305,275	37.8	477	8.8	67,562,351	141,640	21.8	469	8.6	34,118,248	72,747	11.0

¹ Includes Alaska, California, Idaho, Michigan, and Oregon.

TABLE 8.—Number and production of commercial bituminous-coal mines, by size classes, in each State, in 1932—Continued

State	Class 4 (10,000 to 50,000 tons)					Class 5 (less than 10,000 tons)					Total		
	Mines		Production			Mines		Production			Mines	Production (net tons)	
	Number	Per cent	Total (net tons)	Average per mine (net tons)	Per cent	Number	Per cent	Total (net tons)	Average per mine (net tons)	Per cent		Total	Average per mine
Alabama.....	33	17.0	974,137	29,519	12.4	108	55.7	210,776	1,952	2.7	194	7,856,939	40,500
Arizona.....						3	100.0	6,877	2,292	100.0	3	6,877	2,292
Arkansas.....	26	40.0	536,689	20,642	51.9	35	53.9	159,185	4,548	15.4	65	1,033,471	15,900
Colorado.....	41	17.7	1,125,376	27,497	20.1	154	66.4	365,194	2,371	6.5	232	5,598,721	24,132
Georgia.....	1	100.0	27,208	27,208	100.0						1	27,208	27,208
Illinois.....	94	16.0	2,183,242	23,226	6.0	383	65.4	1,119,391	2,923	3.4	586	33,474,553	57,124
Indiana.....	35	21.6	796,244	22,750	6.0	68	42.0	246,826	3,630	1.9	162	13,323,573	82,244
Iowa.....	42	19.8	906,516	21,584	23.4	150	70.7	489,579	3,264	12.7	212	3,862,435	18,219
Kansas.....	18	12.2	400,805	22,297	20.5	117	79.6	251,918	2,153	12.9	147	1,952,885	13,285
Kentucky:													
Eastern.....	72	24.3	2,093,184	29,072	8.1	87	29.4	233,162	2,680	.9	296	25,759,534	87,025
Western.....	27	18.8	573,590	21,244	6.0	69	47.9	245,875	3,563	2.6	144	9,540,048	66,250
Maryland.....	18	22.5	410,909	22,828	28.7	51	63.8	133,698	2,622	9.4	80	1,428,937	17,862
Missouri.....	35	16.9	788,023	22,515	19.3	154	74.4	378,400	2,457	9.3	207	4,069,598	19,660
Montana.....	6	9.7	118,491	19,749	5.6	48	77.4	90,830	1,892	4.3	62	2,125,225	34,278
New Mexico.....	10	23.8	305,059	30,506	24.2	25	59.5	52,894	2,116	4.2	42	1,263,386	30,081
North Carolina.....						3	100.0	1,900	633	100.0	3	1,900	633
North Dakota.....	9	6.2	187,508	20,834	10.8	130	89.0	293,976	2,261	16.9	146	1,739,658	11,915
Ohio.....	58	10.5	1,216,168	20,968	8.8	426	76.9	1,069,062	2,510	7.7	554	13,909,451	25,107
Oklahoma.....	27	28.4	7,006,879	26,181	56.3	63	66.3	220,574	3,501	17.6	95	1,255,466	13,215
Pennsylvania.....	308	28.2	7,239,030	23,500	9.7	482	44.1	1,677,151	3,480	2.2	1,093	74,775,862	68,413
South Dakota.....	1	5.3	31,226	31,226	63.6	18	94.7	17,848	992	36.4	19	49,074	2,583
Tennessee.....	31	41.4	850,578	27,438	24.1	17	22.7	50,795	2,988	1.4	75	3,537,882	47,172
Texas.....	9	50.0	175,377	19,488	27.5	6	33.3	31,304	5,217	4.9	18	636,590	35,366
Utah.....	12	30.7	334,200	27,850	11.7	11	28.2	18,337	1,687	.6	39	2,852,127	73,131
Virginia.....	15	19.5	481,768	32,118	6.3	20	25.9	67,265	3,363	.9	77	7,692,180	99,898
Washington.....	14	22.0	265,817	18,987	16.7	39	62.9	81,159	2,081	5.1	62	1,591,426	25,668
West Virginia.....	156	21.5	4,390,795	28,146	5.1	192	26.4	681,265	3,548	.8	726	85,608,735	117,918
Wyoming.....	11	16.9	221,714	20,156	5.3	30	48.1	57,349	1,912	1.4	65	4,170,963	64,169
Other States ¹	2	9.1	57,067	28,534	10.1	16	72.7	27,418	1,714	4.8	22	565,168	25,639
	1,111	20.5	27,396,600	24,659	8.8	2,905	53.5	8,280,008	2,850	2.7	5,427	309,709,872	57,008

¹ Includes Alaska, California, Idaho, Michigan, and Oregon.

LABOR STATISTICS

MEN EMPLOYED

The method of collecting employment statistics is explained in detail in Coal in 1929, pages 738 to 740. These statistics are believed to represent the most accurate returns obtainable under present conditions, both as to the records generally available in mine offices and as to the funds allotted to the Bureau of Mines for collecting data.

For a detailed explanation of the classification of mine employees see Coal in 1930, page 651. Table 2, page 376, shows the number of men employed underground and on the surface, by States, during 1932. Data for previous years may be found in Coal in 1930, page 653, and 1931, page 426.

LENGTH OF WORKING DAY

TABLE 9.—Number of bituminous-coal mines in the United States having established working day of certain length and number of men employed in 1932

State	8 hours ¹		9 hours		10 hours		All others ²		Total	
	Mines	Men	Mines	Men	Mines	Men	Mines	Men	Mines	Men
Alabama.....	65	3, 576	59	11, 778	29	3, 678	41	1, 411	194	20, 443
Alaska.....	7	120							7	120
Arkansas.....	63	4, 260			1	50	1	15	65	4, 325
Arizona, California, Idaho, and Oregon.....	12	156					1	2	13	158
Colorado.....	189	8, 610	1	3	2	4	40	132	232	8, 749
Georgia.....	1	64							1	64
Illinois.....	454	46, 781	9	63	1	9	122	744	586	47, 597
Indiana.....	152	10, 574	1	10	1	20	8	35	162	10, 639
Iowa.....	184	7, 649	4	26	9	183	15	228	212	8, 086
Kansas.....	102	2, 976	7	60	1	2	37	553	147	3, 591
Kentucky.....	329	36, 051	39	4, 945	8	745	64	526	440	42, 267
Maryland.....	73	3, 089					7	16	80	3, 105
Michigan.....	5	940							5	940
Missouri.....	156	4, 991	14	220	3	120	34	346	207	5, 677
Montana.....	47	1, 419	4	63	1	6	10	37	62	1, 525
New Mexico.....	36	2, 569					6	33	42	2, 602
North Carolina.....	1	8				2	18		3	26
North Dakota.....	79	775	13	95	16	236	38	205	146	1, 311
Ohio.....	488	22, 877	9	107	3	100	54	196	554	23, 280
Oklahoma.....	77	2, 768	7	221			11	74	95	3, 063
Pennsylvania.....	977	100, 093	37	2, 198	5	155	74	2, 086	1, 093	104, 532
South Dakota.....	16	32	3	52					19	84
Tennessee.....	65	6, 186	4	663	4	666	2	10	75	7, 525
Texas.....	10	294	7	257	1	148			18	699
Utah.....	36	2, 834	1	3			2	5	39	2, 842
Virginia.....	70	9, 773	3	410			4	193	77	10, 376
Washington.....	48	2, 521					14	295	62	2, 816
West Virginia.....	634	79, 816	29	3, 367	15	1, 399	48	1, 183	726	85, 765
Wyoming.....	60	4, 160					5	13	65	4, 173
	4, 436	365, 962	251	24, 541	102	7, 539	638	8, 338	5, 427	406, 380

¹ Includes outside employees working 9 or 10 hours a day at many mines where the established time for underground workers is 8 hours.

² Includes employees in mines where the established working day was changed during year, where the working day was irregular, or which failed to answer the inquiry.

TABLE 10.—Percentage of men employed in bituminous-coal mines that had established working days of 8, 9, and 10 hours, 1913, 1923, and 1929-32¹

Year	Percent of total employees in—			Weighted average working day (hours)	Year	Percent of total employees in—			Weighted average working day (hours)
	8-hour mines	9-hour mines	10-hour mines			8-hour mines	9-hour mines	10-hour mines	
1913.....	61.9	15.2	22.9	8.60	1930.....	92.4	6.6	1.0	8.09
1923.....	94.7	4.2	1.1	8.06	1931.....	93.0	6.1	.9	8.08
1929.....	92.5	6.7	.8	8.08	1932.....	91.9	6.2	1.9	8.10

¹ Calculated on basis of total number of men in mines definitely reported as having 8-, 9-, or 10-hour day. A small number of mines that work more than 10 hours or less than 8 hours have been excluded, as have also all mines for which the reports were defective or which changed their working day during the year.

OUTPUT PER MAN

TABLE 11.—Bituminous coal produced underground per man employed underground, by States, in 1932

State	Total mined underground (net tons)	Total number of underground men	Average number of days worked	Average per underground man (net tons)	
				Per year	Per day ¹
Alabama.....	7,784,201	17,734	106	439	4.16
Alaska.....	102,700	100	190	1,027	5.41
Arizona.....	6,877	13	255	529	2.08
Arkansas.....	998,145	3,736	92	267	2.90
Colorado.....	5,582,607	7,346	141	760	5.38
Georgia.....	27,208	53	208	513	2.47
Illinois.....	26,923,252	39,998	107	673	6.27
Indiana.....	7,532,716	7,629	131	987	7.55
Iowa.....	3,735,280	7,183	151	520	3.44
Kansas.....	769,341	2,630	129	293	2.27
Kentucky.....	35,297,315	35,760	154	987	6.40
Maryland.....	1,428,937	2,748	149	520	3.49
Michigan.....	446,149	852	161	524	3.26
Missouri.....	1,492,379	4,111	159	363	2.28
Montana.....	1,376,938	1,139	138	1,209	8.73
New Mexico.....	1,263,386	2,225	126	568	4.50
North Carolina.....	1,900	20	55	95	1.74
North Dakota.....	720,619	696	184	1,035	5.62
Ohio.....	13,104,151	20,254	126	647	5.14
Oklahoma.....	984,256	2,389	119	412	3.45
Pennsylvania.....	74,551,350	92,927	153	802	5.23
South Dakota.....	6,405	16	134	400	2.99
Tennessee.....	3,537,882	6,445	148	549	3.71
Texas.....	562,012	565	160	995	6.21
Utah.....	2,852,127	2,155	166	1,323	7.96
Virginia.....	7,692,180	8,760	144	878	6.09
Washington.....	1,590,465	2,284	157	696	4.42
West Virginia.....	85,608,735	72,679	169	1,178	6.97
Wyoming.....	4,072,912	3,370	143	1,209	8.44
Other States.....	16,319	88	71	185	2.60
	290,068,744	345,905	145	839	5.78

¹ Based upon (1) the "reported" number of man-shifts where the operator keeps a record thereof; otherwise upon (2) the "calculated" number of man-shifts obtained by multiplying the average number of men employed underground at each mine by the number of days worked by the mine. Using a "calculated" method throughout, the average output per man per day for the country as a whole was 5.75 tons in 1932, a figure that is strictly comparable with 5.85 in 1931 and 5.61 in 1930, as previously published.

STRIKES, SUSPENSIONS, AND LOCKOUTS

TABLE 12.—*Strikes, suspensions, and lockouts in coal mines, by States, in 1932*

State	Total number of men employed	Number of men on strike	Man-days idle on account of strike	Average number of days lost on account of strike	
				Per man employed	Per man on strike
Alabama.....	20,443				
Alaska.....	120				
Arizona.....	17				
Arkansas.....	4,325	1,964	103,522	24	53
California, Idaho, and Oregon.....	141				
Colorado.....	8,749				
Georgia.....	64				
Illinois.....	47,597	32,961	4,397,006	92	133
Indiana.....	10,639	3,820	507,051	48	133
Iowa.....	8,086	399	7,503	1	19
Kansas.....	3,581	58	350	(1)	6
Kentucky.....	42,267	721	30,725	1	43
Maryland.....	3,195	67	402	(1)	6
Michigan.....	940				
Missouri.....	5,677	301	48,590	9	161
Montana.....	1,525	748	28,100	18	38
New Mexico.....	2,602				
North Carolina.....	26				
North Dakota.....	1,311				
Ohio.....	23,280	15,290	2,130,292	92	139
Oklahoma.....	3,063	970	46,903	15	48
Pennsylvania, bituminous.....	104,532	2,021	113,696	1	56
South Dakota.....	84				
Tennessee.....	7,525	550	35,967	5	65
Texas.....	899				
Utah.....	2,842				
Virginia.....	10,376	140	140	(1)	1
Washington.....	2,816	958	42,266	15	44
West Virginia.....	85,765	1,510	44,307		29
Wyoming.....	4,173	399	15,648	4	39
Total bituminous.....	406,380	62,867	7,552,468	19	120
Pennsylvania anthracite.....	121,243	34,259	289,523	2	9
Grand total.....	527,623	97,126	7,841,991	15	81

¹ One half day or less.

AVERAGE HOURS WORKED PER WEEK BY BITUMINOUS-COAL MINES

Tables 13 to 17, inclusive, show, for the first time, the approximate average hours worked per week by bituminous-coal mines. The method used in arriving at the approximate averages is given below.

The average hours worked per week represent mine operating time and are calculated as follows: Each mine reports to the Bureau of Mines the number of hours in its working day and the number of days it operated per year. The number of hours operated per year is readily calculated from these data. In the tables the known total for the year has been apportioned by months on the assumption that the working time in any month will be proportional to the production of that month. In averaging the working time the mines are weighted by their size as indicated by the number of men employed. The result, although not precise, should approximate closely the average number of hours worked per week in each month of the year by the mines operating in that year.

392 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

TABLE 13.—Recapitulation of approximate average hours worked per week by bituminous-coal mines, by regions, 1929-31

Region	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Northern Appalachians: ¹													
1929	34.9	36.7	36.2	32.4	31.9	33.1	34.0	34.3	33.9	36.6	38.1	36.7	35.0
1930	30.2	33.5	32.1	29.3	29.9	29.6	29.5	28.3	28.0	30.1	31.7	31.9	29.3
1931	26.4	31.0	30.2	28.2	25.5	25.1	25.3	25.7	24.4	25.5	26.7	26.5	23.2
Southern Appalachians: ²													
1929	38.9	41.3	41.8	32.7	32.7	37.0	37.4	38.0	40.1	43.1	43.8	40.7	38.3
1930	31.8	38.3	33.8	27.1	30.2	30.7	30.7	31.1	31.4	34.4	34.1	32.6	28.5
1931	27.1	29.3	26.1	26.2	23.7	25.2	26.9	28.4	28.8	30.7	31.2	27.1	22.1
Alabama:													
1929	39.3	43.1	44.4	38.5	40.0	38.7	35.5	36.7	36.9	39.6	41.9	32.2	44.8
1930	32.8	41.7	38.5	32.5	34.4	31.5	29.4	27.4	28.1	30.5	32.5	34.0	33.3
1931	23.2	29.0	26.5	26.2	24.1	24.4	22.8	21.1	21.2	21.7	20.2	21.7	19.5
Middle West: ³													
1929	27.3	37.1	38.4	24.3	19.9	20.8	19.6	20.9	23.3	28.2	30.1	30.8	35.7
1930	24.0	35.3	28.9	23.0	20.3	18.2	17.6	18.1	20.1	22.8	27.0	28.4	28.7
1931	21.1	28.4	24.1	25.4	18.0	17.8	16.4	16.1	18.7	20.2	22.8	22.5	23.9
Southwest-Interstate: ⁴													
1929	27.2	39.7	39.8	23.1	18.4	18.9	18.8	21.3	23.1	30.5	31.9	33.3	35.2
1930	22.9	36.7	30.9	20.0	17.5	15.5	16.4	17.9	20.4	24.2	29.2	26.8	28.0
1931	19.7	25.0	17.9	19.4	15.8	14.2	13.8	17.3	18.8	21.7	26.7	25.9	25.4
North Dakota: ⁵													
1929	30.9	52.5	52.5	21.6	17.0	11.8	9.8	9.3	11.3	49.4	42.2	48.9	51.5
1930	29.5	56.3	36.5	25.2	12.1	10.5	11.6	10.5	12.2	30.0	57.5	52.1	38.5
1931	27.1	34.1	26.6	26.0	17.9	16.3	16.3	16.8	20.1	29.3	36.3	42.3	40.7
Rocky Mountain: ⁶													
1929	31.5	43.3	43.5	27.3	24.7	22.1	20.2	21.7	25.2	36.1	38.4	42.6	38.8
1930	26.9	45.4	29.4	22.4	18.6	19.3	18.1	18.3	20.6	28.7	34.2	36.8	36.4
1931	22.5	31.4	22.6	23.1	18.6	17.7	15.0	13.8	17.8	25.3	26.9	30.8	32.0
Washington:													
1929	34.9	44.3	49.8	32.8	32.8	27.7	30.2	25.1	28.1	35.3	34.9	38.7	40.9
1930	31.5	45.0	32.3	29.4	26.0	25.6	26.9	24.7	25.2	31.2	37.4	37.8	36.5
1931	26.2	31.0	27.9	25.8	23.6	19.2	20.5	19.2	21.0	24.9	30.1	38.0	34.9
United States total (including "Other States"):													
1929	34.0	38.8	39.2	30.1	28.7	30.3	30.3	31.1	32.4	36.5	37.8	36.7	36.8
1930	29.1	36.3	31.9	26.7	27.0	26.4	26.2	25.9	26.6	29.6	31.7	31.7	29.6
1931	24.9	29.7	26.6	26.4	22.3	22.6	22.7	23.2	23.8	25.5	26.8	25.8	23.6

¹ Includes Ohio, Pennsylvania, Maryland, and northern West Virginia.

² Southern West Virginia, eastern Kentucky, Virginia, and Tennessee.

³ Michigan, Indiana, Illinois, western Kentucky, and Iowa.

⁴ Missouri, Kansas, Oklahoma, Arkansas, and Texas.

⁵ Much of State output came from mines operating 9 or 10 hours a day.

⁶ Montana, Wyoming, Colorado, New Mexico, and Utah.

TABLE 14.—Approximate average hours worked per week by bituminous-coal mines in each of the principal States in 1929

Region and State	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Northern Appalachians:													
Ohio.....	31.0	30.1	31.2	24.2	25.3	26.2	28.9	30.9	31.0	34.3	38.1	34.4	37.9
Pennsylvania.....	35.5	37.2	37.1	33.7	33.1	34.1	34.8	34.9	34.4	37.0	37.9	37.0	34.9
Maryland.....	37.9	47.2	46.3	38.3	31.7	31.3	33.9	32.2	33.5	36.1	41.4	41.4	42.7
West Virginia (northern).....	34.6	37.5	34.6	31.4	30.8	33.1	34.0	34.6	34.0	36.6	38.7	36.6	32.6
Southern Appalachians:													
West Virginia (southern).....	39.8	42.1	41.8	33.1	33.2	37.9	38.7	39.4	41.8	44.1	45.0	42.3	38.0
Eastern Kentucky.....	37.3	39.7	41.2	30.8	31.2	35.4	35.7	36.4	37.7	41.8	42.3	37.2	38.5
Virginia.....	38.4	41.2	43.6	35.9	34.3	36.7	35.2	34.7	36.3	41.7	41.4	40.4	39.3
Tennessee.....	36.1	39.6	42.0	32.6	31.2	34.5	33.0	32.8	34.7	38.2	38.4	37.7	38.6
Alabama.....	39.3	43.1	44.4	38.5	40.0	38.7	35.5	36.7	36.9	39.6	41.9	32.2	44.8
Middle West:													
Michigan.....	33.4	37.3	39.8	30.8	27.0	29.5	28.3	30.8	34.7	36.0	36.0	37.3	36.0
Indiana.....	26.5	32.1	35.6	26.0	19.3	22.3	21.4	21.8	22.8	26.8	28.1	28.4	33.9
Illinois.....	27.2	37.6	38.5	23.4	19.6	20.1	18.9	20.6	23.1	27.9	30.2	31.0	36.5
Western Kentucky.....	27.6	40.5	39.3	24.5	20.8	20.7	19.1	20.4	23.9	29.4	31.2	29.5	33.0
Iowa.....	30.0	37.2	44.6	26.5	21.3	21.7	20.2	21.3	24.1	32.4	32.2	39.8	40.4
Southwest-Interstate:													
Missouri.....	28.6	38.2	40.0	25.5	21.2	22.3	21.4	21.8	20.5	29.5	31.2	34.3	38.9
Kansas.....	24.7	37.2	39.2	22.7	14.3	14.3	15.8	17.8	22.4	27.2	29.5	27.2	28.8
Oklahoma.....	27.6	45.1	41.5	20.2	13.7	14.1	15.7	20.2	21.8	31.9	32.8	38.8	36.1
Arkansas.....	22.6	34.1	36.6	12.7	9.5	9.0	10.7	14.4	18.5	31.6	33.3	29.2	33.7
Texas.....	35.0	39.9	40.8	33.1	32.1	32.1	30.1	36.0	38.9	36.0	35.0	27.2	36.9
North Dakota.....	30.9	52.5	52.5	21.6	17.0	11.8	9.8	9.3	11.3	49.4	42.2	48.9	51.5
Rocky Mountain:													
Montana.....	29.6	34.9	40.0	26.1	20.5	21.9	20.0	21.6	27.5	34.9	36.5	37.6	34.1
Wyoming.....	35.4	45.3	43.7	31.2	28.1	25.7	23.2	24.5	30.0	42.4	46.0	45.8	39.8
Colorado.....	28.9	41.3	43.2	23.9	21.4	18.3	15.7	17.2	20.4	33.3	32.8	41.4	39.5
New Mexico.....	32.9	39.9	37.2	30.2	31.4	29.0	28.3	31.0	28.3	31.4	36.8	39.1	34.8
Utah.....	32.5	50.1	48.2	27.9	24.4	19.5	18.2	18.4	23.0	36.0	39.7	45.5	40.6
Washington.....	34.9	44.3	49.8	32.8	32.8	27.7	30.2	25.1	28.1	35.3	34.9	38.7	40.9
United States total (including "Other States").....	34.0	38.8	39.2	30.1	28.7	30.3	30.3	31.1	32.4	36.5	37.8	36.7	36.8

¹ Much of State output came from mines operating 9 or 10 hours a day.

TABLE 15.—Approximate average hours worked per week by bituminous-coal mines in each of the principal States in 1930

Region and State	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Northern Appalachians:													
Ohio.....	29.1	31.2	29.9	24.5	25.6	27.4	27.7	28.1	28.1	29.0	32.2	34.0	32.0
Pennsylvania.....	30.5	33.5	32.2	29.9	30.5	29.9	29.7	28.9	28.2	30.6	32.2	31.8	28.7
Maryland.....	30.3	40.9	37.3	28.7	28.7	22.9	27.8	24.6	25.4	27.8	30.7	31.9	36.0
West Virginia (northern).....	29.8	34.2	33.0	29.8	30.4	30.4	29.8	26.3	27.4	28.9	29.2	30.7	28.6
Southern Appalachians:													
West Virginia (southern).....	32.3	38.3	33.2	27.0	30.2	31.2	31.6	32.6	32.6	35.5	34.9	33.1	27.8
Eastern Kentucky.....	31.2	38.5	34.5	25.8	30.3	30.6	29.7	29.0	30.1	33.2	33.3	31.0	28.5
Virginia.....	30.8	38.0	36.8	30.7	29.2	27.4	27.5	26.3	26.7	31.4	31.5	33.4	31.4
Tennessee.....	30.8	36.9	32.5	29.9	30.6	28.8	28.4	27.5	27.7	30.1	31.4	33.2	33.0
Alabama.....	32.8	41.7	38.5	32.5	34.4	31.5	29.4	27.4	28.1	30.5	32.5	34.0	33.3
Middle West:													
Michigan.....	28.8	38.0	34.0	32.7	19.6	17.0	20.9	26.2	13.1	27.5	35.3	39.3	38.0
Indiana.....	24.2	32.0	29.7	23.8	21.7	19.8	18.6	18.3	20.6	23.5	26.1	28.3	28.4
Illinois.....	24.0	35.5	28.4	22.6	20.2	18.0	17.2	18.0	20.1	22.4	27.6	29.1	29.2
Western Kentucky.....	23.1	37.2	29.8	22.8	18.7	17.4	17.7	18.1	20.3	23.6	23.6	23.4	25.1
Iowa.....	23.9	38.2	28.0	22.8	19.4	16.4	16.7	15.6	18.3	23.0	28.6	27.7	31.8
Southwest-Interstate:													
Missouri.....	25.6	35.6	31.6	24.0	22.7	19.7	20.6	22.3	25.0	24.4	27.4	27.4	27.4
Kansas.....	19.4	28.2	26.8	15.5	13.8	11.8	11.5	13.3	14.0	20.1	24.8	25.0	29.0
Oklahoma.....	22.9	46.3	33.5	11.8	13.3	11.6	14.1	15.1	18.1	23.4	33.2	28.9	25.7
Arkansas.....	17.7	31.2	21.9	7.4	7.4	6.7	8.9	12.0	15.2	24.1	30.1	23.4	24.1
Texas.....	30.3	32.6	44.9	34.8	21.3	21.3	22.6	24.7	28.1	35.9	31.4	30.3	40.3
North Dakota.....	29.5	56.3	36.5	25.2	12.1	10.5	11.6	10.5	12.2	30.0	57.5	52.1	38.5
Rocky Mountain:													
Montana.....	26.9	40.0	29.4	22.3	19.5	19.3	20.1	19.3	21.7	28.3	36.2	34.0	31.0
Wyoming.....	28.9	43.9	28.8	25.1	22.6	21.6	20.4	21.3	26.0	32.8	35.5	35.3	33.6
Colorado.....	26.0	47.4	30.3	22.1	14.6	18.1	15.3	16.7	16.3	25.9	31.8	35.7	38.0
New Mexico.....	27.1	41.1	27.9	22.4	24.1	25.0	25.0	21.6	21.6	20.3	32.2	35.6	28.3
Utah.....	25.8	47.9	29.0	18.6	12.4	12.3	11.2	11.9	16.5	30.3	36.0	42.1	41.6
Washington.....	31.5	45.0	32.3	29.4	26.0	25.6	26.9	24.7	25.2	31.2	37.4	37.8	36.5
United States total (including "Other States").....	29.1	36.3	31.9	26.7	27.0	26.4	26.2	25.9	26.6	29.6	31.7	31.7	29.6

¹ Much of State output came from mines operating 9 or 10 hours a day.² Denver experienced the coldest weather of record in this month.

TABLE 16.—Approximate average hours worked per week by bituminous-coal mines in each of the principal States in 1931

Region and State	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Northern Appalachians:													
Ohio.....	26.8	30.2	28.3	27.9	22.8	23.4	25.3	27.7	27.1	28.2	28.3	27.3	25.2
Pennsylvania.....	26.1	30.7	30.2	28.0	25.6	25.5	24.9	25.6	24.0	24.9	25.8	25.7	22.4
Maryland.....	29.2	38.6	33.7	32.3	28.3	24.3	23.8	25.6	24.7	27.0	30.5	32.3	31.0
West Virginia (northern).....	27.0	31.9	31.2	29.0	26.7	24.7	27.0	24.1	23.4	25.0	28.6	28.3	23.7
Southern Appalachians:													
West Virginia (southern).....	27.4	28.5	25.8	25.5	23.8	25.3	27.4	29.4	29.3	31.8	32.7	27.7	22.2
Eastern Kentucky.....	26.3	29.5	25.7	26.4	22.7	24.6	26.5	27.4	28.2	29.1	28.7	25.4	21.1
Virginia.....	27.1	31.0	26.4	27.6	24.6	26.8	25.8	25.4	27.6	28.7	28.6	28.1	24.1
Tennessee.....	26.8	34.6	31.0	31.3	26.5	22.8	21.8	23.5	26.6	27.5	26.6	25.6	22.8
Alabama.....	23.2	29.0	26.5	26.2	24.1	24.4	22.8	21.1	21.2	21.7	20.2	21.7	19.5
Middle West:													
Michigan.....	14.8	28.4	28.4	27.1	4.9	2.5	3.7	3.7	3.7	7.4	27.1	17.3	19.7
Indiana.....	22.5	30.0	25.8	27.8	19.9	20.1	18.9	17.4	18.6	20.8	23.3	23.0	24.6
Illinois.....	20.9	28.1	23.8	24.8	17.6	17.4	15.8	16.0	19.0	19.9	22.5	22.3	23.6
Western Kentucky:													
Iowa.....	20.1	26.9	22.4	23.1	16.9	16.0	14.9	14.5	18.2	20.8	22.6	21.9	23.1
Missouri.....	21.8	29.3	24.2	27.3	18.2	17.2	17.6	15.5	15.9	19.8	24.8	24.8	27.2
Southwest-Interstate:													
Missouri.....	22.1	24.9	19.7	22.1	18.7	16.1	14.6	20.0	19.3	21.2	26.4	31.8	30.3
Kansas.....	18.9	27.0	19.5	20.6	15.4	14.2	13.1	15.4	14.8	19.2	19.5	21.2	25.3
Oklahoma.....	17.8	26.1	14.1	15.5	10.9	9.5	12.9	14.6	19.2	22.4	26.4	21.0	20.7
Arkansas.....	14.6	21.1	9.2	9.2	6.9	5.0	6.5	8.8	13.8	21.5	32.7	21.1	16.9
Texas.....	23.2	23.2	22.2	22.2	20.2	20.2	20.2	23.2	29.3	28.2	28.2	24.2	21.2
North Dakota ¹	27.1	34.1	26.6	26.0	17.9	16.3	16.3	16.8	20.1	29.3	36.3	42.3	40.7
Rocky Mountain:													
Montana.....	23.7	29.9	24.6	23.1	18.5	16.9	17.2	16.0	19.1	24.9	27.1	34.5	34.5
Wyoming.....	23.7	26.9	23.3	23.6	22.4	20.9	16.9	16.1	20.5	26.9	28.8	30.7	27.0
Colorado.....	21.8	32.3	22.4	24.6	15.9	16.1	12.0	11.2	17.0	24.5	27.0	27.6	30.9
New Mexico.....	22.3	28.4	22.7	23.2	21.4	21.4	20.6	17.5	17.1	19.7	21.9	24.9	26.7
Utah.....	21.5	36.3	20.1	18.5	14.2	12.4	9.3	8.5	13.2	26.6	25.6	35.3	38.8
Washington.....	26.2	31.0	27.9	25.8	23.6	19.2	20.5	19.2	21.0	24.9	30.1	38.0	34.9
United States, total (including "Other States").....	24.9	29.7	26.6	26.4	22.3	22.6	22.7	23.2	23.8	25.5	26.8	25.8	23.6

¹ Much of State output came from mines operating 9 or 10 hours a day.

TABLE 17.—*Weighted average number of days worked and equivalent average hours worked per week by bituminous-coal mines, by States, 1929 and 1932*

State	1929		1932	
	Weighted average number of days worked ¹	Equivalent average hours worked by mines per week	Weighted average number of days worked ¹	Equivalent average hours worked by mines per week
Alabama.....	231	39.3	107	18.5
Arkansas.....	146	22.6	92	14.2
Colorado.....	187	28.9	142	21.8
Illinois.....	177	27.2	112	17.2
Indiana.....	172	26.5	145	22.5
Iowa.....	195	30.0	151	23.4
Kansas.....	160	24.7	130	20.1
Kentucky:				
Eastern.....	239	37.3	156	24.6
Western.....	177	27.6	149	23.0
Maryland.....	246	37.9	150	23.1
Michigan.....	217	33.4	159	24.5
Missouri.....	185	28.6	161	25.0
Montana.....	189	29.6	145	22.4
New Mexico.....	214	32.9	127	19.5
North Dakota.....	192	30.9	186	30.4
Ohio.....	201	31.0	127	19.6
Oklahoma.....	178	27.6	120	18.6
Pennsylvania.....	230	35.5	154	23.8
Central.....	209	32.2	147	22.7
Western.....	244	37.7	159	24.6
South Dakota.....	127	21.1	126	20.9
Tennessee.....	228	36.1	148	23.5
Texas.....	212	35.0	152	25.7
Utah.....	211	32.5	176	27.1
Virginia.....	249	38.4	144	22.3
Washington.....	227	34.9	161	24.8
West Virginia.....	247	38.3	168	26.1
Northern.....	223	34.6	172	26.6
Southern.....	257	39.8	167	25.9
Wyoming.....	230	35.4	150	23.1
United States.....	219	34.0	146	22.7

¹ Parts of days are reduced to equivalent full-time days.

DISTRIBUTION OF EMPLOYMENT

Tables 18 and 19 show the distribution of employment in bituminous-coal mines, by States, for 1929 and 1932. These tables give the number of men employed, classified according to the working time of the mines, which is expressed both in terms of days per year and equivalent average hours per week. The analysis is based on a special tabulation of the reports supplied the Bureau by the operators of bituminous-coal mines.

The mines working a very short time (such as those operating 1 to 26 days) include a number that shut down early in 1932. The figures of "number of men employed" represent the average number at work when the mine was operating. To whatever extent the employer pursued the practice of staggering employment the number of individuals drawing pay would be increased, and the average hours worked by each man would be decreased. No record of the extent of staggering employment is available, but so far as known it was not sufficient during 1932 to affect materially the figures outside of a few localities.

TABLE 18.—Number of men employed in bituminous-coal mines that worked a specified average number of hours, by States, in 1929

Days worked by mines in 1929	Equivalent average hours worked by mines per week	Alabama			Arkansas			Colorado			Illinois			Indiana		
		Number of men employed in these mines	Percent of total number of men	Cumulative percent of total number of men	Number of men employed in these mines	Percent of total number of men	Cumulative percent of total number of men	Number of men employed in these mines	Percent of total number of men	Cumulative percent of total number of men	Number of men employed in these mines	Percent of total number of men	Cumulative percent of total number of men	Number of men employed in these mines	Percent of total number of men	Cumulative percent of total number of men
1-26	1-4	69	0.3	0.3	3	0.1	0.1	22	0.2	0.2	329	0.6	0.6	596	3.9	3.9
27-52	5-8	247	1.0	1.3	120	2.8	2.9	529	4.4	4.6	1,662	2.9	3.5	1,091	7.2	11.1
53-78	9-12	467	1.9	3.2	271	6.3	9.2	609	5.1	9.7	2,146	3.8	7.3	445	2.9	14.0
79-104	13-16	517	2.0	5.2	428	10.0	19.2	220	1.8	11.5	4,811	8.5	15.8	1,152	7.5	21.5
105-130	17-20	509	2.0	7.2	646	15.0	34.2	797	6.6	18.1	1,826	3.2	19.0	1,347	8.8	30.3
131-156	21-24	901	3.6	10.8	854	19.9	54.1	1,038	8.6	26.7	5,857	10.3	29.3	914	6.0	36.3
157-182	25-28	1,959	7.8	18.6	983	22.8	76.9	1,802	14.9	41.6	10,328	18.2	47.5	2,128	14.0	50.3
183-208	29-32	3,436	13.6	32.2	922	21.4	98.3	1,805	15.0	56.6	12,472	22.0	69.5	1,993	13.1	63.4
209-234	33-36	2,501	9.9	42.1	20	.5	98.8	2,435	20.2	76.8	10,093	17.8	87.3	2,241	14.7	78.1
235-260	37-40	5,623	22.3	64.4	10	.2	99.0	1,435	11.9	88.7	4,322	7.6	94.9	1,665	10.9	89.0
261-286	41-44	4,536	18.0	82.4	42	1.0	100.0	1,291	10.7	99.4	2,471	4.4	99.3	866	5.7	94.7
287-312	45-48	4,313	17.1	99.5				74	.6	100.0	408	.7	100.0	812	5.3	100.0
313-338	49-52	130	.5	100.0												
		25,208	100.0		4,299	100.0		12,057	100.0		56,725	100.0		15,250	100.0	
		Iowa			Kansas			Kentucky—eastern			Kentucky—western			Maryland		
1-26	1-4	12	0.2	0.2	17	0.3	0.3	180	0.4	0.4	342	2.1	2.1	2	0.1	0.1
27-52	5-8	81	1.1	1.3	309	6.0	6.3	281	.7	1.1	445	2.8	4.9	9	.3	.4
53-78	9-12	141	1.9	3.2	390	7.6	13.9	371	.9	2.0	809	5.1	10.0	13	.5	.9
79-104	13-16	323	4.4	7.6	237	4.6	18.5	1,030	2.4	4.4	546	3.4	13.4	70	2.1	3.0
105-130	17-20	488	6.7	14.3	694	13.5	32.0	750	1.8	6.2	814	5.1	18.5	75	2.3	5.3
131-156	21-24	555	7.6	21.9	823	16.0	48.0	1,186	2.8	9.0	2,007	12.6	31.1	84	2.6	7.9
157-182	25-28	1,106	15.2	37.1	627	10.3	58.3	1,643	3.8	12.8	2,707	17.0	48.1	112	3.4	11.3
183-208	29-32	1,615	22.1	59.2	1,335	26.0	84.3	2,911	6.8	19.6	3,554	22.2	70.3	167	5.1	16.4
209-234	33-36	991	13.6	72.8	188	3.7	88.0	7,174	16.8	36.4	2,632	16.5	86.8	747	22.7	39.1
235-260	37-40	1,400	19.2	92.0	136	2.6	90.6	9,121	21.4	57.8	1,355	8.5	95.3	632	19.2	58.3
261-286	41-44	343	4.7	96.7	7	.2	100.0	11,969	28.0	85.8	492	3.1	98.4	405	12.3	70.6
287-312	45-48	240	3.3	100.0	8	.2	100.0	6,067	14.2	100.0	263	1.6	100.0	960	29.2	99.8
313-338	49-52													8	.2	100.0
		7,295	100.0		5,139	100.0		42,683	100.0		15,966	100.0		3,289	100.0	

TABLE 18.—Number of men employed in bituminous-coal mines that worked a specified average number of hours, by States, in 1929—Continued

Days worked by mines in 1929	Equivalent average hours worked by mines per week	Michigan			Missouri			Montana			New Mexico			North Dakota					
		Number of men em- ployed in these mines	Percent of total number of men	Cumu- lative percent of total num- ber of men	Number of men em- ployed in these mines	Percent of total num- ber of men	Cumu- lative percent of total num- ber of men	Number of men em- ployed in these mines	Percent of total num- ber of men	Cumu- lative percent of total num- ber of men	Number of men em- ployed in these mines	Percent of total num- ber of men	Cumu- lative percent of total num- ber of men	Number of men em- ployed in these mines	Percent of total num- ber of men	Cumu- lative percent of total num- ber of men			
1-26	1-4									18	0.8	0.8					4	0.3	0.3
27-52	5-8	150	11.2	11.2	86	1.5	1.5	93	4.1	4.9	3	0.1	0.1	62	4.4	4.7			
53-78	9-12			11.2	100	1.8	3.3	5	.2	5.1	7	.2	.3	20	1.4	6.1			
79-104	13-16				405	7.2	10.5	193	8.5	13.6	254	7.9	8.2	36	2.5	8.6			
105-130	17-20				466	8.3	18.8	218	9.5	23.1	10	.3	8.5	124	8.7	17.3			
131-156	21-24	150	11.2	22.4	502	8.9	27.7	183	8.0	31.1	4	.1	8.6	77	5.4	22.7			
157-182	25-28			22.4	668	11.9	39.6	313	13.7	44.8	822	25.4	34.0	378	26.6	49.3			
183-208	29-32	176	13.2	35.6	1,145	20.4	60.0	407	17.8	62.6	240	7.4	41.4	83	5.8	55.1			
209-234	33-36	217	16.3	51.9	1,532	27.3	87.3	159	7.0	69.6	242	7.5	48.9	135	9.5	64.6			
235-260	37-40			51.9	449	8.0	95.3	413	18.1	87.7	945	29.2	78.1	318	22.4	87.0			
261-286	41-44	613	45.9	97.8	225	4.0	99.3	124	5.4	93.1	703	21.8	99.9	119	8.4	95.4			
287-312	45-48	30	2.2	100.0	40	.7	100.0	21	.9	94.0	3	.1	100.0	58	4.1	99.5			
313-338	49-52							136	6.0	100.0				7	.5	100.0			
		1,336	100.0		5,618	100.0		2,283	100.0		3,233	100.0		1,421	100.0				
		Ohio			Oklahoma			Pennsylvania—total			Pennsylvania—central			Pennsylvania—western					
1-26	1-4	243	1.0	1.0	95	1.5	1.5	746	0.6	0.6	301	0.6	0.6	445	0.5	0.5			
27-52	5-8	1,034	4.1	5.1	207	3.3	4.8	1,246	1.0	1.6	932	1.9	2.5	314	.4	.9			
53-78	9-12	856	3.4	8.5	74	1.2	6.0	2,434	1.8	3.4	1,294	2.6	5.1	1,140	1.4	2.3			
79-104	13-16	962	3.8	12.3	522	8.3	14.3	2,381	1.8	5.2	1,225	2.5	7.6	1,156	1.4	3.7			
105-130	17-20	1,015	4.0	16.3	483	7.6	21.9	3,760	2.9	8.1	2,118	4.3	11.9	1,642	2.0	5.7			
131-156	21-24	1,398	5.5	21.8	1,088	17.2	39.1	7,292	5.5	13.6	4,406	8.9	20.8	2,886	3.5	9.2			
157-182	25-28	2,845	11.2	33.0	576	9.1	48.2	8,311	6.3	19.9	4,361	8.8	29.6	3,950	4.8	14.0			
183-208	29-32	4,979	19.6	52.6	1,140	18.0	66.2	10,808	8.2	28.1	4,350	8.8	38.4	6,458	7.9	21.9			
209-234	33-36	3,036	11.9	64.5	871	13.8	80.0	18,596	14.1	42.2	10,080	20.3	58.7	8,516	10.4	32.3			
235-260	37-40	3,023	11.9	76.4	766	12.1	92.1	20,408	15.5	57.7	10,319	20.8	79.5	10,089	12.3	44.6			
261-286	41-44	3,441	13.5	89.9	499	7.9	100.0	34,600	26.3	84.0	7,370	14.9	94.4	27,230	33.1	77.7			
287-312	45-48	2,542	10.0	99.9				21,136	16.0	100.0	2,763	5.6	100.0	18,373	22.3	100.0			
313-338	49-52	25	.1	100.0				56			19			37					
		25,399	100.0		6,321	100.0		181,774	100.0		49,538	100.0		82,236	100.0				

		South Dakota			Tennessee			Texas			Utah			Virginia		
1-26	1-4	6	18.7	18.7	25	0.3	0.3							55	0.4	0.4
27-52	5-8			18.7	94	1.2	1.5	7	0.5	0.5	3	0.1	0.1	209	1.7	2.1
53-78	9-12	3	9.4	28.1	161	2.1	3.6	99	7.5	8.0			1			2.1
79-104	13-16	6	18.7	46.8	212	2.8	6.4	87	6.6	14.6	69	2.0	2.1	92	.8	2.9
105-130	17-20	3	9.4	56.2			6.4	47	3.6	18.2	173	5.0	7.1	103	.8	3.7
131-156	21-24	3	9.4	65.6	394	5.2	11.6	55	4.2	22.4	158	1.7	8.8	152	1.3	5.0
157-182	25-28			65.6	615	8.1	19.7	14	1.1	23.5	206	6.0	14.8	761	6.3	11.3
183-208	29-32	5	15.6	81.2	1,097	14.4	34.1	398	30.3	53.8	1,258	36.3	51.1	779	6.5	17.8
209-234	33-36	2	6.3	87.5	900	11.8	45.9	64	4.9	58.7	731	21.1	72.2	1,312	10.9	28.7
235-260	37-40	4	12.5	100.0	847	11.1	57.0	282	21.5	80.2	514	14.9	87.1	2,817	23.4	52.1
261-286	41-44				2,269	29.8	86.8			80.2	446	12.9	100.0	2,928	24.3	76.4
287-312	45-48				1,005	13.2	100.0	260	19.8	100.0				2,845	23.6	100.0
313-338	49-52															
		32	100.0		7,619	100.0		1,313	100.0		3,458	100.0		12,053	100.0	
		Washington			West Virginia—total			West Virginia—northern			West Virginia—southern			Wyoming		
1-26	1-4	16	0.5	0.5	292	0.3	0.3	191	0.6	0.6	101	0.1	0.1			
27-52	5-8	11	.4	.9	558	.5	.8	177	.6	1.2	381	.5	.6	5	0.1	0.1
53-78	9-12	10	.3	1.2	1,225	1.2	2.0	708	2.3	3.5	517	.7	1.3	5	.1	.2
79-104	13-16	25	.9	2.1	1,810	1.7	3.7	912	3.0	6.5	898	1.2	2.5	69	1.4	1.6
105-130	17-20	7	.2	2.3	2,292	2.2	5.9	1,512	5.0	11.5	780	1.0	3.5	43	.9	2.5
131-156	21-24	35	1.2	3.5	2,010	1.9	7.8	1,183	3.9	15.4	827	1.1	4.6	293	6.1	8.6
157-182	25-28	145	4.9	8.4	2,986	2.8	10.6	1,395	4.6	20.0	1,591	2.1	6.7	554	11.4	20.0
183-208	29-32	604	20.5	28.9	5,894	5.6	16.2	3,260	10.7	30.7	2,634	3.5	10.2	454	9.4	29.4
209-234	33-36	995	33.8	62.7	11,811	11.3	27.5	5,252	17.3	48.0	6,559	8.8	19.0	786	16.2	45.6
235-260	37-40	148	5.0	67.7	22,972	21.9	49.4	6,017	19.8	67.8	16,955	22.8	41.8	807	16.7	62.3
261-286	41-44	769	26.1	93.8	32,932	31.4	80.8	6,690	22.0	89.8	26,242	35.2	77.0	1,413	29.2	91.5
287-312	45-48	125	4.3	98.1	20,028	19.1	99.9	3,086	10.2	100.0	16,942	22.8	99.8	410	8.5	100.0
313-338	49-52	56	1.9	100.0	132	.1	100.0				132	.2	100.0			
		2,946	100.0		104,942	100.0		30,383	100.0		74,559	100.0		4,839	100.0	

COAL

TABLE 19.—Number of men employed in bituminous-coal mines that worked a specified average number of hours, by States, in 1932

Days worked by mines in 1932	Equivalent average hours worked by mines per week	Alabama			Arkansas			Colorado			Illinois			Indiana		
		Number of men employed in these mines	Percent of total number of men	Cumulative percent of total number of men	Number of men employed in these mines	Percent of total number of men	Cumulative percent of total number of men	Number of men employed in these mines	Percent of total number of men	Cumulative percent of total number of men	Number of men employed in these mines	Percent of total number of men	Cumulative percent of total number of men	Number of men employed in these mines	Percent of total number of men	Cumulative percent of total number of men
1-26	1-4	491	2.4	2.4	11	0.3	0.3	117	1.3	1.3	1,190	2.5	2.5	260	2.4	2.4
27-52	5-8	3,866	18.9	21.3	703	16.2	16.5	333	3.8	5.1	4,980	10.5	13.0	255	2.4	4.8
53-78	9-12	1,908	9.3	30.6	1,232	28.5	45.0	1,775	20.3	25.4	5,098	10.7	23.7	1,454	13.7	18.5
79-104	13-16	4,878	23.9	54.5	1,179	27.3	72.3	827	9.4	34.8	9,715	20.4	44.1	1,434	13.5	32.0
105-130	17-20	3,867	18.9	73.4	708	16.4	88.7	1,446	16.5	51.3	14,271	30.0	74.1	1,806	17.0	49.0
131-156	21-24	2,869	14.0	87.4	125	2.9	91.6	1,502	17.2	68.5	5,378	11.3	85.4	1,604	15.1	64.1
157-182	25-28	1,108	5.4	92.8	15	.3	91.9	688	7.9	76.4	3,609	7.6	93.0	1,038	9.8	73.9
183-208	29-32	932	4.6	97.4	325	7.5	99.4	626	7.2	83.6	1,468	3.1	96.1	981	9.2	83.1
209-234	33-36	235	1.2	98.6	27	.6	100.0	565	6.5	90.1	726	1.5	97.6	567	5.3	88.4
235-260	37-40	289	1.4	100.0				637	7.3	97.4	761	1.6	99.2	717	6.7	95.1
261-286	41-44							122	1.4	98.8	14		99.2	276	2.6	97.7
287-312	45-48							100	1.1	99.9	387	.8	100.0	247	2.3	100.0
313-338	49-52							11	.1	100.0						
		20,443	100.0		4,325	100.0		8,749	100.0		47,597	100.0		10,639	100.0	
		Iowa			Kansas			Kentucky—eastern			Kentucky—western			Maryland		
1-26	1-4	22	0.3	0.3	4	0.1	0.1	252	0.8	0.8	116	1.1	1.1			
27-52	5-8	115	1.4	1.7	96	2.7	2.8	1,537	4.9	5.7	211	2.0	3.1	133	4.3	4.3
53-78	9-12	251	3.1	4.8	565	15.7	18.5	1,521	4.8	10.5	350	3.2	6.3	217	7.0	11.3
79-104	13-16	988	12.2	17.0	1,507	42.0	60.5	3,053	9.7	20.2	726	6.7	13.0	180	5.8	17.1
105-130	17-20	965	11.9	28.9	363	10.1	70.6	5,010	17.8	38.0	2,152	19.9	32.9	241	7.8	24.9
131-156	21-24	1,628	20.1	49.0	267	7.4	78.0	3,105	9.9	47.9	2,819	26.1	59.0	1,148	37.0	61.9
157-182	25-28	1,905	23.6	72.6	150	4.2	82.2	3,067	11.7	59.6	2,096	19.4	78.4	436	14.0	75.9
183-208	29-32	1,391	17.2	89.8	157	4.4	86.0	6,574	20.9	80.5	1,697	15.7	94.1	447	14.4	90.3
209-234	33-36	340	4.2	94.0	69	1.9	88.5	3,534	11.2	91.7	191	1.8	95.9	152	4.9	95.2
235-260	37-40	444	5.5	99.5	12	.3	88.8	1,564	5.0	96.7	238	2.2	98.1	134	4.3	99.5
261-286	41-44	14	.2	99.7			88.8	1,046	3.3	100.0	208	1.9	100.0	8	.3	99.7
287-312	45-48													9		100.0
313-338	49-52	23	.3	100.0	401	11.2	100.0									
		8,086	100.0		3,591	100.0		31,463	100.0		10,804	100.0		3,105	100.0	

		Michigan			Missouri			Montana			New Mexico			North Dakota		
1-26	1-4				48	0.8	0.8				102	3.9	3.9	2	0.2	0.2
27-52	5-8	60	6.4	6.4	95	1.7	2.5	147	9.6	9.6	12	.5	4.4	33	2.5	2.7
53-78	9-12			6.4	308	5.4	7.9	279	18.3	27.9	237	9.1	13.5	17	1.3	4.0
79-104	13-16	240	25.5	31.9	765	13.5	21.4	232	15.2	43.1	133	5.1	18.6	120	9.2	13.2
105-130	17-20			31.9	470	8.3	29.7	58	3.8	46.9	529	20.3	38.9	177	13.5	26.7
131-156	21-24			31.9	1,194	21.0	50.7	161	10.6	57.5	179	6.9	45.8	223	17.0	43.7
157-182	25-28			31.9	1,013	17.8	68.5	208	13.6	71.1	855	32.9	78.7	167	12.7	56.4
183-208	29-32	602	64.1	96.0	472	8.3	76.8	246	16.1	87.2	491	18.8	97.5	141	10.8	67.2
209-234	33-36			96.0	792	14.0	90.8	58	3.8	91.0	23	.9	98.4	231	17.6	84.8
235-260	37-40	38	4.0	100.0	146	2.6	93.4	97	6.4	97.4	19	.7	99.1	130	9.9	94.7
261-286	41-44				241	4.2	97.6	15	1.0	98.4	8	.3	99.4	20	1.5	96.2
287-312	45-48				99	1.7	99.3	24	1.6	100.0	7	.3	99.7	40	3.0	99.2
313-338	49-52				20	.4	99.7				7	.3	100.0	10	.8	100.0
339-390	53-56				14	.3	100.0									
		940	100.0		5,677	100.0		1,525	100.0		2,602	100.0		1,311	100.0	
		Ohio			Oklahoma			Pennsylvania—total			Pennsylvania—central			Pennsylvania—western		
1-26	1-4	845	3.6	3.6	150	4.9	4.9	1,360	1.3	1.3	898	2.0	2.0	467	0.8	0.8
27-52	5-8	2,493	10.7	14.3	401	13.1	18.0	4,633	4.4	5.7	1,718	3.8	5.8	2,915	4.9	5.7
53-78	9-12	4,748	20.4	34.7	148	4.9	22.9	4,325	4.2	9.9	2,397	5.3	11.1	1,928	3.3	9.0
79-104	13-16	1,995	8.6	43.3	616	20.1	43.0	13,283	12.7	22.6	6,558	14.5	25.6	6,725	11.4	20.4
105-130	17-20	1,329	5.7	49.0	494	16.1	59.1	17,473	16.7	39.3	6,863	15.1	40.7	10,610	17.9	38.3
131-156	21-24	2,280	9.8	58.8	554	18.1	77.2	14,916	14.3	53.6	5,644	12.4	53.1	9,272	15.7	54.0
157-182	25-28	2,753	11.8	70.6	325	10.6	87.8	11,909	11.4	65.0	6,914	15.2	68.3	4,995	8.4	62.4
183-208	29-32	5,227	22.5	93.1	145	4.7	92.5	16,336	15.6	80.6	9,184	20.2	88.5	7,152	12.1	74.5
209-234	33-36	489	2.1	95.2	120	3.9	96.4	9,235	8.8	89.4	3,618	8.0	96.5	5,617	9.5	84.0
235-260	37-40	579	2.5	97.7	71	2.3	98.7	8,460	8.1	97.5	1,387	3.1	99.6	7,073	12.0	96.0
261-286	41-44	291	1.2	98.9	39	1.3	100.0	2,046	2.0	99.5	17		99.6	2,029	3.4	99.4
287-312	45-48	251	1.1	100.0				5	.5	100.0	196	.4	100.0	355	.6	100.0
313-338	49-52							51		100.0				5		100.0
		23,280	100.0		3,063	100.0		104,532	100.0		45,389	100.0		59,143	100.0	

COAL

TABLE 19.—Number of men employed in bituminous-coal mines that worked a specified average number of hours, by States, in 1932—Continued

Days worked by mines in 1932	Equivalent average hours worked by mines per week	South Dakota			Tennessee			Texas			Utah			Virginia		
		Number of men employed in these mines	Percent of total number of men	Cumulative percent of total number of men	Number of men employed in these mines	Percent of total number of men	Cumulative percent of total number of men	Number of men employed in these mines	Percent of total number of men	Cumulative percent of total number of men	Number of men employed in these mines	Percent of total number of men	Cumulative percent of total number of men	Number of men employed in these mines	Percent of total number of men	Cumulative percent of total number of men
1-26	1-4				27	0.4	0.4	73	10.4	10.4				100	1.0	1.0
27-52	5-8	2	2.5	2.5	126	1.7	2.1			10.4	3		149	1.4	2.4	
53-78	9-12			2.5	218	2.9	5.0			10.4	50	1.8	1.8	552	5.3	7.7
79-104	13-16	7	8.8	11.3	1,020	13.6	18.6	48	6.9	17.3	99	3.5	5.3	215	2.1	9.8
105-130	17-20	53	66.3	77.6	2,046	27.2	45.8	215	30.8	48.1	154	5.4	10.7	4,337	41.8	51.6
131-156	21-24	3	3.7	81.3	1,561	20.7	66.5	65	9.3	57.4	405	14.3	25.0	1,405	13.5	65.1
157-182	25-28	8	10.0	91.3	897	11.9	78.4	65	9.3	66.7	782	27.5	52.5	1,530	14.8	79.9
183-208	29-32	4	5.0	96.3	384	5.1	83.5	12	1.7	68.4	554	19.5	72.0	456	4.4	84.3
209-234	33-36	3	3.7	100.0	440	5.8	89.3	177	25.3	93.7	788	27.7	99.7	1,120	10.8	95.1
235-260	37-40				243	3.2	92.5	37	5.3	99.0			99.7	512	4.9	100.0
261-286	41-44				94	1.3	93.8			99.0	7	.3	100.0			
287-312	45-48				469	6.2	100.0	7	1.0	100.0						
313-338	49-52															
		80	100.0		7,525	100.0		699	100.0		2,842	100.0		10,376	100.0	
		Washington			West Virginia—total			West Virginia—northern			West Virginia—southern			Wyoming		
1-26	1-4	16	0.6	0.6	1,852	2.2	2.2	159	0.8	0.8	1,693	2.6	2.6	77	1.8	1.8
27-52	5-8	52	1.8	2.4	2,333	2.7	4.9	524	2.5	3.3	1,809	2.8	5.4	170	4.1	5.9
53-78	9-12	57	2.0	4.4	3,999	4.7	9.6	784	3.8	7.1	3,215	4.9	10.3	13	.3	6.2
79-104	13-16	88	3.1	7.5	6,621	7.7	17.3	1,102	5.3	12.4	5,519	8.5	18.8	176	4.2	10.4
105-130	17-20	297	10.5	18.0	8,455	9.9	27.2	3,557	17.1	29.5	4,898	7.5	26.3	569	13.6	24.0
131-156	21-24	1,479	52.5	70.5	11,435	13.3	40.5	2,670	12.8	42.3	8,765	13.5	39.8	1,149	27.6	51.6
157-182	25-28	96	3.4	73.9	14,170	16.5	57.0	3,548	17.0	59.3	10,622	16.4	56.2	1,137	27.3	78.9
183-208	29-32	421	15.0	88.9	11,884	13.9	70.9	2,519	12.1	71.4	9,365	14.4	70.6	382	9.1	88.0
209-234	33-36	75	2.7	91.6	12,966	15.1	86.0	2,516	12.1	83.5	10,450	16.1	86.7	278	6.7	94.7
235-260	37-40	27	1.0	92.6	6,138	7.2	93.2	1,535	7.4	90.9	4,603	7.1	93.8	158	3.8	98.5
261-286	41-44	59	2.1	94.7	3,216	3.7	96.9	638	3.1	94.0	2,578	4.0	97.8	13	.3	98.8
287-312	45-48	74	2.6	97.3	2,696	3.1	100.0	1,258	6.0	100.0	1,438	2.2	100.0	51	1.2	100.0
313-338	49-52	75	2.7	100.0												
		2,816	100.0		85,765	100.0		20,810	100.0		64,955	100.0		4,173	100.0	

EQUIPMENT AND METHODS OF MINING AND PREPARATION

METHODS OF RECOVERY

TABLE 20.—*Bituminous coal mined by different methods, by States, in 1932*

State	Mined by hand		Shot off the solid		Cut by machines		From strip pits		Not specified		Total production
	Net tons	Percent	Net tons	Percent	Net tons	Percent	Net tons	Percent	Net tons	Percent	Net tons
Alabama.....	531,797	6.8	1,193,470	15.2	6,042,138	78.9	72,738	0.9	16,796	0.2	7,856,939
Alaska.....	10,270	10.0	92,430	90.0	-----	-----	-----	-----	-----	-----	102,700
Arizona.....	1,500	21.8	5,377	78.2	-----	-----	-----	-----	-----	-----	6,877
Arkansas.....	550	.1	279,132	27.0	718,463	69.5	35,326	3.4	-----	-----	1,033,471
Colorado.....	1,577,513	28.2	225,190	4.0	3,759,574	67.1	16,114	.3	20,330	.4	5,598,721
Georgia.....	-----	-----	27,208	100.0	-----	-----	-----	-----	-----	-----	27,208
Illinois.....	1,328,651	4.0	2,662,277	7.9	22,886,971	68.4	6,551,301	19.6	45,353	.1	33,474,553
Indiana.....	78,240	.6	1,070,005	8.0	6,375,462	47.8	5,790,857	43.5	9,009	.1	13,323,573
Iowa.....	409,103	10.6	2,072,577	53.6	1,238,218	32.1	127,155	3.3	15,382	.4	3,862,435
Kansas.....	145,843	7.5	429,526	22.0	167,806	8.6	1,183,544	60.6	26,166	1.3	1,952,885
Kentucky:											
Eastern.....	724,490	2.8	258,920	1.0	24,766,032	96.2	-----	-----	10,092	-----	25,759,534
Western.....	106,931	1.1	301,960	3.2	9,125,260	95.7	2,267	-----	3,630	-----	9,540,048
Maryland.....	985,686	69.0	-----	-----	437,138	30.6	-----	-----	6,113	.4	1,428,937
Michigan.....	-----	-----	600	.1	445,549	99.9	-----	-----	-----	-----	446,149
Missouri.....	271,033	6.7	239,621	5.9	957,051	23.5	2,577,219	63.3	24,674	.6	4,069,598
Montana.....	26,698	1.3	58,675	2.8	1,284,590	60.4	748,287	35.2	6,975	.3	2,125,225
New Mexico.....	523,358	41.4	370,414	29.3	369,614	29.3	-----	-----	-----	-----	1,263,386
North Carolina.....	-----	-----	1,900	100.0	-----	-----	-----	-----	-----	-----	1,900
North Dakota.....	60,439	3.5	204,474	11.7	443,952	25.5	1,019,039	58.6	11,754	.7	1,739,658
Ohio.....	489,078	3.5	29,178	.2	12,561,147	90.3	805,300	5.8	24,748	.2	13,909,451
Oklahoma.....	19,976	1.6	177,911	14.2	781,430	62.2	271,210	21.6	4,939	.4	1,255,466
Pennsylvania.....	13,162,012	17.6	1,907,434	2.6	59,461,339	79.5	224,512	.3	20,565	-----	74,775,862
South Dakota.....	-----	-----	-----	-----	42,669	86.9	-----	-----	6,405	13.1	49,074
Tennessee.....	519,052	14.7	749,955	21.2	2,268,875	64.1	-----	-----	-----	-----	3,537,882
Texas.....	131,381	20.6	430,631	67.7	-----	-----	74,578	11.7	-----	-----	636,590
Utah.....	24,538	.9	274,446	9.6	2,553,143	89.5	-----	-----	-----	-----	2,852,127
Virginia.....	81,218	1.0	728,666	9.5	6,882,296	89.5	-----	-----	-----	-----	7,692,180
Washington.....	622,559	39.1	555,237	34.9	412,127	25.9	961	.1	-----	-----	1,691,426
West Virginia.....	7,641,432	8.9	1,235,992	1.4	76,707,128	89.6	-----	-----	542	-----	85,608,735
Wyoming.....	75,119	1.8	690,626	16.6	3,307,167	79.3	98,051	2.3	24,783	.1	4,170,963
Other States.....	1,569	9.6	12,450	76.3	2,300	14.1	-----	-----	-----	-----	16,319
	29,550,036	9.5	16,285,682	5.3	243,954,770	78.8	19,641,128	6.3	278,256	.1	309,709,872

1 Includes some tonnage reported by the companies as "pillar coal," the method of mining which, of course, differs materially from solid shooting in rooms or entries.

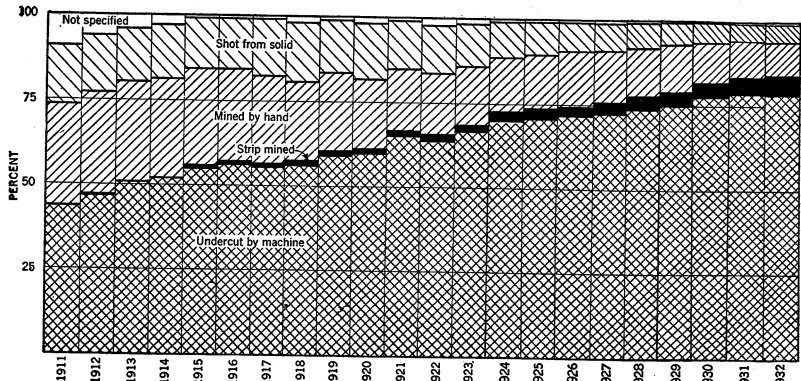


FIGURE 4.—Percentage of total output of bituminous coal mined by different methods, 1911-32.

UNDERCUTTING MACHINES

TABLE 21.—Number of coal-cutting machines in bituminous-coal mines, average output per machine, and percent of total product of underground mines cut by machines, by States, in 1932

State	Number of coal-cutting machines in use			Average output per machine (net tons)	Percent of total product of underground mines cut by machines	State	Number of coal-cutting machines in use			Average output per machine (net tons)	Percent of total product of underground mines cut by machines
	"Permissible"	All others	Total				"Permissible"	All others	Total		
Alabama.....	134	244	378	15,984	77.6	North Dakota..	12	3	15	29,597	61.6
Arkansas.....	77	58	135	5,322	72.0	Ohio.....	282	641	923	13,609	95.9
Colorado.....	166	212	378	9,946	67.3	Oklahoma.....	77	50	127	6,153	79.4
Illinois.....	228	1,163	1,391	16,454	85.0	Pennsylvania..	2,071	1,459	3,530	16,845	79.8
Indiana.....	90	230	320	19,923	84.6	Tennessee.....	59	69	128	17,726	64.1
Iowa.....	73	29	102	12,139	33.1	Utah.....	32	84	116	22,010	89.5
Kansas.....	16	19	35	4,794	21.8	Virginia.....	37	196	233	29,538	89.5
Kentucky.....	387	1,052	1,439	23,552	96.0	Washington....	3	30	33	12,489	25.9
Maryland.....	24	22	46	9,503	30.6	West Virginia..	958	1,196	2,154	35,612	89.6
Michigan.....	37	37	74	12,042	99.9	Wyoming.....	55	195	250	13,229	81.2
Missouri.....	39	65	104	9,202	64.1	Other States... ¹	2	-----	2	1,150	14.1
Montana.....	15	59	74	17,359	93.3						
New Mexico....	13	54	67	5,517	29.3						
							4,850	17,167	12,017	20,301	84.1

¹ Probably includes some "permissible" machines not so specified by the operators.

STRIPPING OPERATIONS

TABLE 22.—*Stripping operations of all types in the bituminous-coal fields, by States and counties, in 1932*

[Returns for mines that recover coal both by stripping and by underground operations do not permit separating men engaged in stripping from those engaged in other work. For this reason the figures of men employed represent all persons working at these mines, including those underground. The total tons produced by both methods at these same mines are also shown]

State and county	Number of strip pits	Number of power shovels			Coal produced (net tons)		Total value at same mines	Average value per ton	Number of employees			Average number of days worked	Percent of county or State total mined by stripping	Man-days	Average per man per day, tons	
		Steam	Electric	All others	Mined by stripping	Total at same mines			Underground	Surface						Total
										In strip pits	All others					
Alabama: Blount, Walker, and Winston.....	5	8			72,738	72,738	\$117,000	\$1.61		112	41	153	90	12.8	13,770	5.28
Illinois:																
Fulton.....	7		6	4	739,885	739,885	1,019,000	1.38		196	26	222	166	56.3	36,954	20.02
Grundy, Henry, Jackson, Knox, McDonough, Peoria, Pike, Saline, Schuyler, and Will.....	16	5	20	11	2,610,738	2,610,738	3,997,000	1.53		514	244	758	214	39.9	162,571	16.06
La Salle.....	4			3	10,594	10,594	23,000	2.17		55	12	67	112	3.1	7,520	1.41
Livingston.....	4			2	13,380	13,380	36,000	2.69		28		28	209	44.7	5,840	2.29
Perry.....	5	6	10	1	2,556,567	2,556,567	2,994,000	1.17		572	40	612	181	32.8	110,708	23.09
St. Clair.....	3		2	2	246,054	246,054	301,000	1.22		67		67	122	11.3	8,180	30.08
Vermilion.....	5		4		354,698	354,698	538,000	1.52		203		203	130	18.8	26,384	13.44
Williamson.....	7	3		2	19,385	19,385	26,000	1.34		58	26	84	39	1.0	3,302	5.87
State total.....	51	14	42	25	6,551,301	6,551,301	8,934,000	1.36		1,693	348	2,041	177	19.6	361,459	18.12
Indiana:																
Clay.....	6	11	2	4	558,752	558,752	766,000	1.37		284	29	313	170	93.9	53,236	10.50
Greene.....	7	6	4	1	1,212,866	1,212,866	1,648,000	1.36		341	9	350	214	70.1	74,889	16.20
Owen, Sullivan, Vermillion, Vigo, and Warrick.....	8	13	7		1,486,476	1,486,476	1,891,000	1.27		508	30	538	252	27.9	97,652	15.22
Pike.....	5	6	10		2,532,763	2,532,763	2,822,000	1.11		459	130	589	200	93.9	117,764	21.51
State total.....	26	36	23	5	5,790,857	5,790,857	7,127,000	1.23		1,592	198	1,790	192	43.5	343,541	16.86
Iowa:																
Davis, Jefferson, Keokuk, Marion, Wapello, Warren, and Webster.....	11			9	112,633	112,633	216,000	1.92		84	26	110	115	14.1	12,660	8.90
Mahaska.....	3			4	14,522	14,522	25,000	1.72		23	2	25	102	23.7	2,560	5.67
State total.....	14			13	127,155	127,155	241,000	1.90		107	28	135	113	14.8	15,220	8.35

† Percent of county totals, not State.

TABLE 22.—Stripping operations of all types in the bituminous-coal fields, by States and counties, in 1932—Continued

State and county	Number of strip pits	Number of power shovels			Coal produced (net tons)		Total value at same mines	Average value per ton	Number of employees				Average number of days worked	Percent of county or State total mined by stripping	Man-days	Average per man per day, tons
		Steam	Elec- tric	All others	Mined by stripping	Total at same mines			Under- ground	Surface		Total				
										In strip pits	All others					
Kansas:																
Bourbon.....	4	3			17,810	17,810	\$17,000	\$0.95		21	3	24	181	97.8	4,340	4.10
Cherokee.....	6	1	1	1	195,381	195,381	365,000	1.37		86	2	88	101	69.7	8,864	22.04
Crawford.....	20	15	4	5	950,452	950,452	1,452,000	1.53		497	33	530	119	64.1	62,909	15.11
Labette, Linn, and Osage.....	5	2		1	19,901	19,901	39,000	1.96		21	2	23	146	23.1	3,360	5.92
State total.....	35	21	5	7	1,183,544	1,183,544	1,873,000	1.58		625	40	665	129	60.6	79,473	14.89
Missouri:																
Barton.....	8	8	7		1,129,614	1,129,614	1,710,000	1.51		337	31	368	143	99.9	52,735	21.42
Bates.....	5	3	4		806,144	806,144	732,000	.91		241		241	232	97.9	55,805	14.45
Boone, Jasper, Johnson, Randolph, and Vernon.....	8	6	2		162,985	162,985	254,000	1.56		160		160	128	37.7	20,445	7.97
Callaway.....	3	3		1	13,058	13,058	34,000	2.60		20	8	28	213	36.2	5,950	2.19
Henry.....	4	5	4		465,418	465,418	757,000	1.63		132	61	193	184	97.1	35,516	13.10
State total.....	28	25	17	1	2,577,219	2,577,219	3,487,000	1.35		890	100	990	172	63.3	170,451	15.12
Montana:																
McCone, Powder River, and Valley.....	3				3,015	3,015	6,000	1.99		7		7	107	100.0	746	4.04
Rosebud.....	1		2		745,272	745,272	1,117,000	1.50		40	13	53	186	99.9	9,858	75.60
State total.....	4		2		748,287	748,287	1,123,000	1.50		47	13	60	177	99.9	10,604	70.57
North Dakota:																
Bowman, Burleigh, McKenzie, Mercer, Morton, Mountrail, Oliver, Ward, and Williams.....	14	5	5	1	571,799	571,799	653,000	1.14		121	57	178	148	50.5	26,416	21.65
Burke.....	5	3	3	1	193,971	193,971	217,000	1.12		43	17	60	118	100.0	7,080	27.40
Divide.....	3	1	1	1	148,286	148,286	191,000	1.29		20	18	38	225	94.8	8,540	17.36
Grant.....	4			2	18,864	18,864	28,000	1.48		21	4	25	227	56.6	5,680	3.32
Hettinger.....	8				10,394	10,394	14,000	1.35		23	1	24	129	57.3	3,102	3.35
McLean.....	5	3		1	75,725	75,725	113,000	1.49		76	11	87	149	70.7	12,946	5.86
State total.....	39	12	9	6	1,019,039	1,019,039	1,216,000	1.19		304	108	412	155	58.6	63,764	15.98

Ohio:																		
Harrison.....	4	12			548,490	548,490	484,000	.88	-----	144	54	198	218	30.6	43,218	12.69		
Holmes, Jackson, Jefferson, Mus- kingum, and Stark.....	8	5	1	2	247,228	247,228	228,000	.92	-----	142	2	144	167	8.1	23,980	10.31		
Tuscarawas.....	6	3		1	9,582	10,749	14,000	1.30	-----	3	14	1	18	54	963	11.16		
State total.....	18	20	1	3	805,300	806,467	726,000	.90	-----	3	300	57	360	189	¹ 14.4	68,161	11.83	
Oklahoma:																		
Craig, Haskell, Muskogee, Pitts- burg, Tulsa, and Wagoner.....	7	10			249,112	266,408	488,000	1.83	59	178	23	260	142	47.1	36,888	7.22		
Rogers.....	3	3			22,098	22,098	38,000	1.72	-----	39	14	53	39	100.0	2,091	10.57		
State total.....	10	13			271,210	288,506	526,000	1.82	59	217	37	313	125	21.6	38,979	7.40		
Pennsylvania: Allegheny, Jefferson, Somerset, and Washington.....	6	11			224,512	424,036	458,000	1.08	232	97	67	396	196	.3	77,422	5.48		
South Dakota:																		
Corson, Harding, Perkins, and Zelbach.....	7				6,943	6,943	13,000	1.87	-----	12	1	13	149	57.4	1,931	3.60		
Dewey.....	3			1	35,726	35,726	62,000	1.74	-----	37	15	52	117	100.0	6,090	5.87		
State total.....	10			1	42,669	42,669	75,000	1.76	-----	49	16	65	123	86.9	8,021	5.32		
Other States ¹	9	6	6		227,297	227,297	249,000	1.10	-----	135	18	153	108	¹ 5.6	16,483	13.79		
Grand total ²	255	166	105	61	19,641,128	19,859,115	26,152,000	1.32	294	6,168	1,071	7,533	168	6.3	1,267,348	15.67		

¹ Percent of county totals, not State.

² Arkansas, Colorado, Kentucky, Texas, Washington, and Wyoming.

³ Includes 180 power strip pits proper using 163 steam shovels, 105 electric shovels, and 61 of other types, employing 6,873 men, and stripping 19,458,620 net tons; 3 mines combining stripping and underground methods in same operation, with 359 men, 3 steam shovels, and 98,378 tons stripped; and 72 horse-stripping operations, with 301 men, and 84,130 tons stripped.

COAL

407

LOADING MACHINES AND CONVEYORS

These figures refer only to mechanical devices designed to reduce the labor of hand shoveling into mine cars, although in a larger sense the introduction of any machine, such as a cutting machine or haulage locomotive, is a form of mechanization.

The figures are based upon complete reports courteously furnished by coal operators to the Bureau of Mines.¹

TABLE 23.—*Tonnage of bituminous coal produced by mechanized mining in 1932*

	Net tons	Percent
Loaded by machine:		
Mobile loading machines.....	14, 825, 000	84.3
Scraper loaders.....	1, 132, 000	6.4
Duckbills and other self-loading conveyors.....	1, 630, 000	9.3
Total loaded by machine.....	17, 587, 000	100.0
Handled by conveyors:		
Duckbills and other self-loading conveyors.....	1, 630, 000	8.2
Pit-car loaders.....	12, 590, 000	63.4
Other hand-loaded conveyors.....	5, 640, 000	28.4
Total handled by conveyors.....	19, 860, 000	100.0
Recapitulation, less duplications:		
Mobile loading machines.....	14, 825, 000	41.4
Scraper loaders.....	1, 132, 000	3.2
Pit-car loaders.....	12, 590, 000	35.1
Other conveyors, including duckbills.....	7, 270, 000	20.3
Grand total, mechanized mining.....	35, 817, 000	100.0

TABLE 24.—*Total tonnage produced by loading machines and conveyors, by States, in 1932*

State	Loaded by machine	Handled on pit-car loaders and other hand-loaded conveyors	Total produced by mechanized mining	State	Loaded by machine	Handled on pit-car loaders and other hand-loaded conveyors	Total produced by mechanized mining
Illinois.....	7, 747, 000	7, 613, 000	15, 360, 000	Kentucky.....	86, 000	1, 007, 000	1, 093, 000
Pennsylvania.....	1, 796, 000	5, 618, 000	7, 414, 000	Montana.....	933, 000	141, 000	1, 074, 000
Indiana.....	2, 364, 000	861, 000	3, 225, 000	Ohio.....	(1)	(1)	850, 000
Wyoming.....	2, 127, 000	571, 000	2, 698, 000	Utah.....	(1)	(1)	754, 000
Alabama.....	157, 000	1, 080, 000	1, 237, 000	Other States ²	245, 000	695, 000	940, 000
West Virginia and Virginia.....	569, 000	603, 000	1, 172, 000	Total.....	17, 587, 000	18, 230, 000	35, 817, 000

¹ Separation not made here.

² Washington, Colorado, Arkansas, New Mexico, Maryland, Tennessee, Missouri, Oklahoma, North Dakota, and Iowa.

¹ The Bureau appreciates the cooperation of the manufacturers of loading equipment and of the Pennsylvania Department of Mines, the Illinois Department of Mines and Minerals, the State coal-mine inspector of Wyoming, and Jonas Waffle of Indiana in furnishing information used in the compilation.

TABLE 25.—Rank of States in percentage of total bituminous product of underground mines by mechanized mining in 1932

State	Percent loaded by machine	Percent handled on pit-car loaders and other hand-loaded conveyors	Total percent mined mechanically	State	Percent loaded by machine	Percent handled on pit-car loaders and other hand-loaded conveyors	Total percent mined mechanically
Montana.....	67.8	10.2	78.0	Ohio.....	(¹)	(¹)	6.5
Wyoming.....	52.2	14.0	66.2	Kentucky.....	0.2	2.9	3.1
Illinois.....	28.8	28.3	57.1	West Virginia and Virginia.....	.6	.7	1.3
Indiana.....	31.4	11.4	42.8	United States.....	6.0	6.3	12.3
Utah.....	(¹)	(¹)	26.4				
Alabama.....	2.0	13.9	15.9				
Pennsylvania.....	2.4	7.5	9.9				

¹ Separation not made here.

TABLE 26.—Mechanical loading underground in bituminous-coal mines, by States, in 1932

State	Number of mines				Number of machines				
	Using loading machines only (including scrapers, duck-bills, etc.)	Using conveyors only (that is, pit-car loaders and other hand-loaded conveyors)	Using both loading machines and conveyors	Total, less duplications	Mobile loading machines	Scrapers	Duck-bills and other self-loading conveyors	Pit-car loaders	Installations of hand-loaded conveyors ¹
Alabama.....	4	22	1	27	(²)	31		170	15
Arkansas.....	3	10		13		5			10
Colorado.....	3	7	1	11	7		4	9	6
Illinois.....	10	35	26	71	289	2		2,042	6
Indiana.....	11	13	4	28	84			168	2
Iowa.....		1		1					1
Kentucky.....	3	8	2	13	7	3	(²)	113	6
Maryland.....		2		2					2
Missouri.....	1	1		2		(²)			1
Montana.....	2	2	5	9	25		12	39	2
New Mexico.....	3			3		8			
North Dakota.....		1		1				(²)	
Ohio.....	5	1	1	7	17		3		2
Oklahoma.....	1	1		2		(²)			1
Pennsylvania.....	12	61	7	80	30	63	16	460	53
Tennessee.....		1	1	2	(²)				2
Utah.....	9		1	10	29	(²)	6	(²)	
Virginia.....	2	7		9	8				7
Washington.....	1	4		5			(²)	(²)	4
West Virginia.....	13	16	2	31	20	3	11	21	13
Wyoming.....	11	4	8	23	29	10	104	87	3
Undistributed.....					3	3	3	3	
	94	197	59	350	548	128	159	3,112	136

¹ Number of mines in which hand-loaded conveyors (other than pit-car loaders) were used.

² Included under "Undistributed" to avoid disclosing individual operations.

TABLE 26.—Mechanical loading underground in bituminous-coal mines, by States, in 1932—Continued

State	Production mechanically mined (net tons)			Total production of mechanized mines (net tons)			
	Loaded by machine	Handled by pit-car loaders and other hand- loaded conveyors	Total	Mines using loading machines only (in- cluding scrapers, duckbills, etc.)	Mines using conveyors only (that is, pit- car load- ers and other hand- loaded con- veyors)	Mines using both loading machines and con- veyors	Total, less du- plications
Alabama.....	156,675	1,079,866	1,236,541	(2)	(2)	(2)	2,975,205
Arkansas.....	20,812	132,453	153,265	48,025	138,589	-----	186,614
Colorado.....	79,978	75,778	155,756	(2)	(2)	(2)	906,534
Illinois.....	7,747,152	7,612,365	15,359,517	2,468,344	6,026,911	8,576,390	17,071,645
Indiana.....	2,364,354	860,991	3,225,345	2,368,851	1,753,701	727,257	4,849,809
Iowa.....	-----	(2)	(2)	-----	(2)	-----	(2)
Kentucky.....	85,752	1,007,244	1,092,996	(2)	-----	(2)	4,325,667
Maryland.....	-----	(2)	(2)	-----	(2)	-----	(2)
Missouri.....	(2)	(2)	(2)	(2)	(2)	-----	(2)
Montana.....	932,650	141,561	1,074,211	(2)	(2)	762,991	1,183,087
New Mexico.....	73,914	-----	73,914	372,099	-----	-----	372,099
North Dakota.....	-----	(2)	(2)	-----	(2)	-----	(2)
Ohio.....	(2)	(2)	849,887	1,404,042	(2)	(2)	1,533,795
Oklahoma.....	(2)	(2)	(2)	(2)	(2)	-----	(2)
Pennsylvania.....	1,795,314	5,618,247	7,413,561	3,214,556	14,141,723	2,571,341	19,927,620
Tennessee.....	(2)	(2)	(2)	-----	(2)	(2)	(2)
Utah.....	(2)	(2)	754,354	(2)	-----	(2)	1,612,779
Virginia.....	(2)	(2)	406,948	(2)	(2)	-----	1,956,261
Washington.....	(2)	(2)	362,950	-----	(2)	(2)	421,180
West Virginia.....	³ 568,648	³ 603,506	765,206	³ 3,137,109	³ 3,450,975	(2)	5,271,871
Wyoming.....	2,126,786	571,077	2,697,863	1,273,519	470,374	1,647,890	3,391,783
Undistributed.....	1,634,840	526,946	194,595	3,601,037	6,869,814	1,480,178	519,767
	17,586,875	18,230,034	35,816,909	17,887,582	32,852,087	15,766,047	66,505,716

¹ Included under "Undistributed" to avoid disclosing individual operations.² West Virginia includes Virginia.

CONSUMPTION, STOCKS, AND DISTRIBUTION

CONSUMPTION

TABLE 27.—Changes in the United States consumption of bituminous coal by such classes of consumers as report currently, and by all other consumers, 1928-32, in thousands of net tons

[Information on several other classes of consumers is available for certain years. The items shown in this table are selected because they are available in strictly comparable form for each year]

Year	Consumed in the United States							Exported		Total of consumption and exports ⁷	
	Colliery fuel	Electric public utilities ¹	Bunkers, foreign trade ²	Locomotive fuel, class I roads ³	Coke beehive ovens ⁴	Coke by-product ovens ⁴	All other uses ⁵	Total consumption ⁶	To Canada and Mexico ²		To all other countries ²
1928.....	4,602	41,350	4,294	112,382	7,018	70,166	259,016	498,828	14,050	2,114	514,992
1929.....	4,663	44,937	4,287	113,894	10,028	76,759	264,987	519,555	14,727	2,702	536,984
1930.....	3,993	42,898	3,497	98,400	4,284	65,521	236,397	454,990	13,667	2,210	470,867
1931.....	3,205	38,735	2,195	81,725	1,767	46,846	197,396	371,869	10,647	1,479	383,995
1932.....	2,781	30,290	1,350	66,498	1,030	30,887	174,081	306,917	8,429	385	315,731

¹ U.S. Geological Survey. Includes a small amount of anthracite.

² Bureau of Foreign and Domestic Commerce.

³ Interstate Commerce Commission. Note that consumption in shops, roundhouses, and stations is excluded, also the entire consumption of class II and III roads.

⁴ U.S. Bureau of Mines.

⁵ Obtained by subtracting the known items from the total consumption. Includes general manufacturing, domestic, and many miscellaneous uses. From other sources it is known that consumption in steel works and general manufacturing is decreasing and that consumption for domestic uses is increasing.

⁶ Production plus imports minus exports, plus or minus changes in consumers' stocks.

⁷ Note that consumption includes the small amount imported.

BITUMINOUS COAL USED IN MANUFACTURING

The consumption of bituminous coal by manufacturing industries, by counties, in 1929, is shown in figure 5. The map is based upon a special analysis by the United States Bureau of Census entitled "Consumption of Fuel and Electric Energy in Manufacturing Industries."

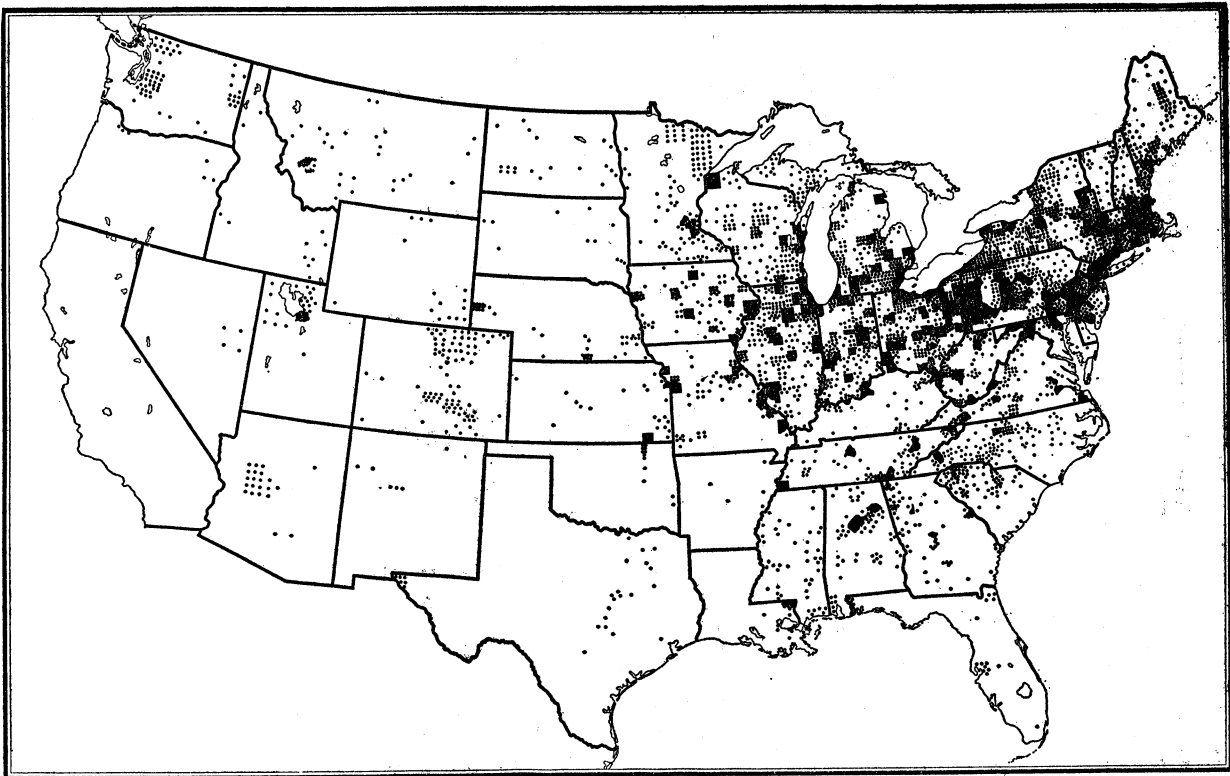


FIGURE 5.—Bituminous coal consumed in each county in manufacturing industries other than coke ovens, 1929. Each dot represents 10,000 tons.

FUEL ECONOMY

TABLE 28.—Indicators of the effect of fuel economy on consumption of coal per unit of performance since the World War

	Pounds	Reduction (percent)
Steam railroads:		
Pounds per 1,000 gross ton-miles freight service:		
Average, 1919-20.....	170	
Average, 1932.....	123	27.6
Pounds per passenger-train car-mile:		
Average, 1919-20.....	18.5	
Average, 1932.....	14.9	19.5
Electric public-utility power plants:		
Pounds per kilowatt-hour, 1919.....	3.2	
Pounds per kilowatt-hour, 1932.....	1.5	53.1
Iron and steel—pounds coking coal per ton of pig: ¹		
1918.....	3,577	
1932.....	2,933	18.3
Coke manufacture: Savings of heat values through recovery of gas, tar, light oils, and breeze by extension of byproduct in place of beehive coking, 1913-31, expressed as percent of coal used for all coke in 1932 ²		20.3

¹ Includes only savings through higher yields of merchantable coke per ton of coal charged and lower consumption of coke per ton of iron. Excludes economies through recovery of byproducts, which are treated in next item.

² These byproducts are used in part for boiler fuel, in part for metallurgical purposes, in part for domestic heating and cooking, and to a small extent for automotive fuel.

STOCKS OF COAL HELD BY CONSUMERS

TABLE 29.—Stocks of bituminous coal in hands of commercial consumers and stocks of anthracite and bituminous coal in retail dealers' yards in 1932

[From periodic stock reports of the Bureau of Mines. Coal for steamship fuel, on lake docks, in transit, and in the bins of householders is not included]

Date	Total stock of bituminous coal, estimated (net tons)	Days' supply at current rate of consumption on date of stock taking								
		By-product coke plants	Steel plants	Other industrial	Coal-gas plants	Electric utilities	Retail yards, bituminous	Railroads	Total bituminous	Retail yards, anthracite
Jan. 1.....	35,500,000	51	44	40	62	53	31	28	37	54
Feb. 1.....	32,700,000	44	43	39	65	61	27	29	36	(¹)
Apr. 1.....	30,050,000	39	45	35	57	60	22	30	33	(¹)
May 1.....	27,200,000	47	61	40	61	69	38	34	42	51
July 1.....	26,300,000	47	54	40	60	63	43	29	41	52
Oct. 1.....	27,500,000	55	50	38	61	52	40	23	38	60
Nov. 1.....	30,033,000	54	43	34	66	57	24	21	32	42
Dec. 31.....	29,666,000	53	38	30	68	56	22	23	30	34

¹ Not available.

DISTRIBUTION

Tables showing the movement of coal to the Great Lakes, to tide-water, and to New England and certain other major currents of distribution have been included in earlier reports of this series (see Coal in 1928, pp. 512-527) and are this year published in the Monthly Coal Distribution Report of the Bureau of Mines. Table 30 records one feature of the distribution of bituminous coal which bears closely on the statistics of production.

BITUMINOUS COAL LOADED FOR SHIPMENT BY INDIVIDUAL RAILROADS AND WATERWAYS, AS REPORTED BY OPERATORS

The table shows the quantity so originated on each railroad and waterway, as reported by mine operators in answer to the following inquiry:

Railroads or waterways on which product was first loaded for shipment:

Name of road or waterway	Tons
(Give shipments over each road separately)	
-----	-----
-----	-----

As these statistics include nonrevenue railroad fuel they may differ from statistics compiled by the railroad companies, which often show only revenue freight and include coal received from connecting lines or coal shipped off the lake docks, as well as that originating at mines on the lines reporting.

Where the road serving the district is a subsidiary of a larger road some operators may report their coal as loaded on the subsidiary and others as loaded on the parent system (a few subsidiaries have been consolidated under the name of the parent road).

In general, the figures are given under the name reported by the operator; and the Bureau of Mines does not attempt to combine them under the name of the larger system, believing that such combination can best be made by those using the figures, as they are probably familiar with coal-traffic problems. If such combination is made, the total will usually be found to check reasonably well with the statistics issued by railroads that keep records of total coal originated.

TABLE 30.—*Bituminous coal loaded for shipment by individual railroads and waterways, as reported by operators, in 1932, in net tons*

Route	State	Quantity	
		By State	Total for route
RAILROADS			
Alabama Central	Alabama	56,398	56,398
Alabama Great Southern	do	60,488	60,488
Alaska	Alaska	96,500	96,500
Algers, Winslow & Western	Indiana	1,388,837	1,388,837
Alton	Illinois	1,272,331	1,342,144
	Missouri	69,813	
Artemus-Jellico	Kentucky	211,008	211,008
	Colorado	207,796	
	Illinois	198,475	1,742,921
Aitchison, Topeka & Santa Fe	Kansas	145,624	
	Missouri	276,048	
	New Mexico	903,208	
	Oklahoma	11,770	
	Illinois	341,768	22,832,744
Baltimore & Ohio	Indiana	482,418	
	Maryland	28,495	
	Ohio	2,427,246	
	Pennsylvania	9,883,706	
	West Virginia	9,669,111	1,309,266
Bessemer & Lake Erie	Pennsylvania	1,309,266	
Bevier & Southern	Missouri	97,598	97,598
Buffalo & Susquehanna	Pennsylvania	22,307	22,307
Buffalo Creek & Gauley	West Virginia	366,306	366,306
Buffalo, Rochester & Pittsburgh	Pennsylvania	89,325	89,325
Cambria & Indiana	do	2,741,343	2,741,343
Campbell's Creek	West Virginia	656,535	656,535
Carbon County	Utah	197,921	197,921
Caseyville	Illinois	70,360	70,360

TABLE 30.—Bituminous coal loaded for shipment by individual railroads and waterways, as reported by operators, in 1932, in net tons—Continued

Route	State	Quantity	
		By State	Total for route
RAILROADS—continued			
Central of Georgia.....	Alabama.....	657,035	683,383
	Georgia.....	26,348	
	Kentucky.....	6,564,446	
Chesapeake & Ohio.....	Ohio.....	410,046	40,230,772
	West Virginia.....	33,256,280	
Cheswick & Harmar.....	Pennsylvania.....	481,873	481,873
Chicago & Eastern Illinois.....	Illinois.....	1,332,280	3,128,597
	Indiana.....	1,796,317	
Chicago & Illinois Midland.....	Illinois.....	1,500,789	1,500,789
	do.....	1,185,433	
Chicago & North Western.....	Iowa.....	251,850	1,455,271
	Wyoming.....	17,988	
	Colorado.....	267,957	
	Illinois.....	5,465,902	
Chicago, Burlington & Quincy.....	Iowa.....	306,434	6,765,954
	Missouri.....	57,909	
	Wyoming.....	667,752	
Chicago Great Western.....	Iowa.....	28,985	28,985
Chicago, Indianapolis & Louisville.....	Indiana.....	1,008,996	1,008,996
	Illinois.....	16,076	
	Indiana.....	2,864,037	
	Iowa.....	618,626	
Chicago, Milwaukee, St. Paul & Pacific.....	Missouri.....	53,656	4,268,476
	Montana.....	634,612	
	North Dakota.....	43,179	
	South Dakota.....	26,494	
	Washington.....	6,796	
	Illinois.....	559,570	
	Iowa.....	895,381	
Chicago, Rock Island & Pacific.....	Missouri.....	148,354	1,772,700
	Oklahoma.....	169,395	
	Illinois.....	181,098	
Chicago, Springfield & St. Louis.....	do.....	2,677,936	2,677,936
Cleveland, Cincinnati, Chicago & St. Louis.....	Indiana.....	1,372,278	4,050,214
	do.....	37,111	
Clinchfield.....	Kentucky.....	1,273,520	1,310,631
	Virginia.....	302,671	
Colorado & Southeastern.....	Colorado.....	677,938	302,671
Colorado & Southern.....	do.....	120,386	677,938
Colorado & Wyoming.....	do.....	53,538	120,386
Conemaugh & Black Lick.....	Pennsylvania.....	1,142	53,538
Crystal River & San Juan.....	Colorado.....	574,995	1,142
Cumberland & Pennsylvania.....	Maryland.....	54,057	574,995
Dardanelle & Russellville.....	Arkansas.....	450	54,057
Dents Run.....	Pennsylvania.....	104,012	450
Denver & Intermountain.....	Colorado.....	1,042,289	104,012
Denver & Rio Grande Western.....	do.....	16,009	2,497,230
	New Mexico.....	1,438,932	
	Utah.....	524,743	
Denver & Salt Lake.....	Colorado.....	174,452	524,743
Des Moines & Central Iowa.....	Iowa.....	2,088	174,452
Detroit, Toledo & Ironton.....	Ohio.....	580,159	2,088
East Broad Top Railroad & Coal Co.....	Pennsylvania.....	11,989	580,159
Eastern Railway & Lumber Co.....	Washington.....	727	11,989
Erie.....	Ohio.....	981,228	981,955
	Pennsylvania.....	27,671	
Evansville & Ohio Valley.....	Indiana.....	127,827	981,228
Evansville, Indianapolis & Terre Haute.....	do.....	115,520	127,827
Evansville, Suburban & Newburgh.....	do.....	6,160	115,520
Fort Dodge, Des Moines & Southern.....	Iowa.....	64,566	6,160
Fort Smith & Western.....	Oklahoma.....	9,060	64,566
Fort Smith, Subiaco & Rock Island.....	Arkansas.....	286,877	9,060
Great Northern.....	Montana.....	325,368	709,048
	North Dakota.....	96,803	
	Washington.....	259,833	
	Pennsylvania.....	182,328	
Huntingdon & Broad Top Mountain Railroad & Coal Co.....	Alabama.....	6,421,238	182,328
Illinois Central.....	Illinois.....	132,430	13,135,314
	Indiana.....	6,399,318	
	Kentucky.....	584,901	
	Illinois.....	24,688	
Illinois Terminal.....	Pennsylvania.....	39,571	584,901
Indian Creek Valley.....	Texas.....	39,571	24,688
International-Great Northern.....	Kentucky.....	73,070	39,571
Interstate.....	Virginia.....	1,488,330	1,561,400
	Iowa.....	249,659	
Iowa Southern Utilities Co.....	Kansas.....	312,169	249,659
Joplin-Pittsburg.....	do.....	312,169	312,169

TABLE 30.—Bituminous coal loaded for shipment by individual railroads and waterways, as reported by operators, in 1932, in net tons—Continued

Route	State	Quantity	
		By State	Total for route
RAILROADS—continued			
Kanawha Central.....	West Virginia.....	109,844	109,844
Kanwaha, Glen Jean & Eastern.....	do.....	448,191	448,191
Kansas City, Clay County & St. Joseph.....	Missouri.....	1,432	1,432
	Arkansas.....	11,000	
	Kansas.....	22,051	
Kansas City Southern.....	Missouri.....	787,228	854,820
	Oklahoma.....	34,541	
	Kansas.....	5,734	5,734
	do.....	70,644	70,644
Kansas, Oklahoma & Gulf.....	West Virginia.....	482,426	482,426
Kelley's Creek & Northwestern.....	Kentucky.....	475,584	475,584
Kentucky & Tennessee.....	Pennsylvania.....	81,659	81,659
Lake Erie, Franklin & Clarion.....	Colorado.....	37,191	37,191
Laramie, North Park & Western.....	Pennsylvania.....	213,637	213,637
Ligonier Valley.....	Illinois.....	268,658	268,658
Litchfield & Madison.....	Alabama.....	1,933,988	
	Illinois.....	69,826	
Louisville & Nashville.....	Kentucky.....	16,807,403	19,606,271
	Tennessee.....	443,275	
	Virginia.....	351,779	
Mary Lee.....	Alabama.....	462,930	462,930
Michigan Central.....	Michigan.....	158,387	158,387
Midland Valley.....	Arkansas.....	140,998	
	Oklahoma.....	254,064	395,062
	Illinois.....	244,752	
Minneapolis & St. Louis.....	Iowa.....	10,488	255,240
Minneapolis, St. Paul & Sault Ste. Marie.....	North Dakota.....	407,680	407,680
Missouri-Illinois.....	Illinois.....	10,571	10,571
	Kansas.....	195,662	
	Missouri.....	86,717	
Missouri-Kansas-Texas.....	Oklahoma.....	193,563	560,875
	Texas.....	84,933	
	Arkansas.....	594,115	
	Illinois.....	3,260,871	
Missouri Pacific.....	Kansas.....	677,962	5,481,756
	Missouri.....	943,714	
	Texas.....	5,094	
	Alabama.....	97,615	277,560
	Illinois.....	179,945	
Monongahela.....	Pennsylvania.....	3,437,416	9,032,077
	West Virginia.....	5,594,661	
Montana.....	Arkansas.....	28,978	28,978
Montana, Wyoming & Southern.....	Montana.....	289,505	289,505
Montour.....	Pennsylvania.....	4,015,168	4,015,168
Nashville & Atlantic.....	Tennessee.....	4,000	4,000
Nashville, Chattanooga & St. Louis.....	Illinois.....	140,044	861,610
	Tennessee.....	721,566	
	Illinois.....	12,876	
New York Central (includes some coal shipped over subsidiary roads: Kanawha & Michigan, Toledo & Ohio Central, and Zanesville & Western).	Ohio.....	2,921,966	7,159,460
	Pennsylvania.....	3,002,944	
	West Virginia.....	1,221,674	
	Kentucky.....	3,054,905	
Norfolk & Western.....	Virginia.....	2,497,732	24,750,634
	West Virginia.....	19,197,997	
Norfolk Southern.....	North Carolina.....	150	150
Northeast Oklahoma.....	Kansas.....	3,718	3,718
Northern Alabama.....	Alabama.....	241,092	241,092
	Montana.....	790,419	
Northern Pacific.....	North Dakota.....	568,394	2,277,466
	Washington.....	918,653	
	Kentucky.....	4,909	4,909
Onio & Kentucky.....	Ohio.....	88,407	88,407
Ohio Railway & Power Co.....	Oklahoma.....	36,272	36,272
Oklahoma City-Ada-Atoka.....	Wyoming.....	346,174	346,174
Oregon Short Line.....	Washington.....	66,318	66,318
Oregon-Washington Railroad & Navigation Co.....	do.....	198,800	198,800
Pacific Coast.....	Illinois.....	308,693	
	Indiana.....	1,563,576	
	Ohio.....	3,395,428	31,776,269
	Pennsylvania.....	25,267,611	
	West Virginia.....	1,240,961	
	Illinois.....	139,248	139,248
Peoria & Eastern.....	do.....	198,999	198,999
Peoria & Pekin Union.....	do.....	407,450	407,450
Peoria Terminal.....	Michigan.....	183,029	183,029
Pere Marquette.....	Pennsylvania.....	1,063,793	1,063,793
Pittsburg & Shawmut.....			

TABLE 30.—*Bituminous coal loaded for shipment by individual railroads and waterways, as reported by operators, in 1932, in net tons—Continued*

Route	State	Quantity	
		By State	Total for route
RAILROADS—continued			
Pittsburg County	Oklahoma	28,443	28,443
Pittsburg, Shawmut & Northern	Pennsylvania	403,059	403,059
Pittsburgh & Lake Erie	do	3,497,692	3,497,692
Pittsburgh & West Virginia (includes West Side Belt)	Ohio	19,062	2,185,737
	Pennsylvania	2,139,675	
	West Virginia	27,000	
Pittsburgh, Chartiers & Youghiogheny	Pennsylvania	210,115	210,115
Pittsburgh, Lisbon & Western	do	1,985	1,985
Preston	West Virginia	123,718	123,718
Quincy, Omaha & Kansas City	Missouri	84,867	84,867
Rio Grande & Eagle Pass	Texas	12,162	12,162
Rio Grande Southern	Colorado	4,114	4,114
Rockdale, Sandow & Southern	Texas	71,131	71,131
Rutland, Toluca & Northern	Illinois	56,451	56,451
St. Louis & Belleville Electric	do	2,948	2,948
St. Louis & Hannibal	Missouri	4,278	4,278
St. Louis & O'Fallon	Illinois	225,436	225,436
St. Louis & Ohio River	do	80,400	80,400
St. Louis-San Francisco	Alabama	1,110,604	2,545,962
	Arkansas	162,700	
	Kansas	318,030	
	Missouri	627,735	
	Oklahoma	326,843	
St. Louis Southwestern of Texas	Texas	378,657	378,657
Scott's Run	West Virginia	123,009	123,009
Seaboard Air Line	Alabama	1,600	1,600
Southern	do	1,360,492	6,261,087
	Illinois	146,073	
	Indiana	1,306,137	
	Kentucky	306,332	
	Tennessee	1,462,749	
	Virginia	1,739,300	
	California	2,000	
Southern Pacific	New Mexico	228,549	230,549
Springfield Terminal	Illinois	153,952	153,952
Strouds Creek & Muddlety	West Virginia	10,600	10,600
Susquehanna & New York	Pennsylvania	22,808	22,808
Tennessee	Tennessee	544,133	544,133
Tennessee Central	do	227,928	227,928
Tennessee Coal, Iron & Railroad Co.	Alabama	627,532	627,532
Texas & Pacific	Texas	5,979	5,979
Texas Short Line	do	26,545	26,545
Thomas & Sayreton	Alabama	285,728	285,728
Toledo, Peoria & Western	Illinois	40,194	40,194
Twin City Electric	Washington	669	669
Utah	Colorado	6,143	6,143
Union	Pennsylvania	18,975	18,975
Union Pacific	Colorado	859,724	3,734,552
	Idaho	4,450	
	Kansas	15,000	
	Utah	29,320	
	Wyoming	2,826,058	
	Unlabeled	Pennsylvania		481,668	481,668
Unlabeled	Utah	1,102,372	1,102,372
Virginian	Virginia	110,720	6,772,954
	West Virginia	6,662,234	
	Illinois	1,015,928	
Wabash	Iowa	1,349,253	1,349,253
Western Allegheny	Missouri	109,719	147,624
	Pennsylvania	223,606	
Western Maryland	Pennsylvania	147,624	3,275,339
	Maryland	684,116	
	Pennsylvania	451,151	
West Side Belt	West Virginia	2,140,072	(1)
West Virginia Northern	Pennsylvania	(1)	(1)
Wheeling & Lake Erie	West Virginia	115,448	115,448
Winfield	Ohio	2,422,875	2,422,875
Winifrede	Pennsylvania	4,358	4,358
Woodward Iron Co.	West Virginia	26,808	26,808
Wyoming	Alabama	325,468	325,468
	Wyoming	126	126
Total railroad shipments		276,142,037	276,142,037

1 Included under Pittsburgh & West Virginia.

TABLE 30.—*Bituminous coal loaded for shipment by individual railroads and waterways, as reported by operators, in 1932, in net tons—Continued*

Route	State	Quantity	
		By State	Total for route
WATERWAYS			
Allegheny River.....	Pennsylvania.....	389, 982	389, 982
Black Warrior River.....	Alabama.....	147, 846	147, 846
Green River.....	Kentucky.....	56, 356	56, 356
Illinois River.....	Illinois.....	22, 091	22, 091
Kanawha River.....	West Virginia.....	807, 256	807, 256
Missouri River.....	Missouri.....	2, 051	2, 051
Monongahela River.....	Pennsylvania.....	6, 743, 857	6, 743, 857
Muskingum River.....	Ohio.....	285, 000	285, 000
Ohio River.....	Kentucky.....	239, 002	911, 343
	West Virginia.....	672, 341	
Total waterway shipments.....		9, 365, 782	9, 365, 782
Grand total, loaded at mines for shipment by railroads and waterways.....		285, 507, 819	285, 507, 819
Trucked to distant points.....		4, 250, 269	4, 250, 269
Sold to local trade, used by employees, and nearby trucking.....		16, 142, 437	16, 142, 437
Used at mines for power and heat.....		2, 780, 889	2, 780, 889
Made into coke at mines.....		1, 028, 458	1, 028, 458
		309, 709, 872	309, 709, 872

IMPORTS AND EXPORTS

IMPORTS

TABLE 31.—*Bituminous coal imported, by countries and districts, 1931 and 1932, in net tons*

[Compiled from the records of the Bureau of Foreign and Domestic Commerce]

Country and district	1931	1932	Country and district	1931	1932
COUNTRY OF ORIGIN			DISTRICT OF ENTRY—continued		
North America:			Dakota.....	4, 103	4, 208
Canada.....	202, 862	175, 104	Duluth-Superior.....	351	262
Mexico.....	684	134	Maine and New Hampshire.....	64, 226	53, 223
Europe:			Massachusetts.....	448	156
Germany.....		113	Michigan.....	56	27
Netherlands.....		6	Montana-Idaho.....	87, 927	72, 121
United Kingdom.....	504	11, 552	New York.....		119
Asia: French Indo-China.....	1, 131		Puerto Rico.....		5, 942
Oceania: Australia.....	1, 122		St. Lawrence.....	52	7
	206, 303	186, 909	San Antonio.....	690	134
			San Francisco.....	2, 309	
			San Francisco.....	95	5, 599
			Vermont.....	26, 808	22, 701
			Washington.....		
DISTRICT OF ENTRY				206, 303	186, 909
Alaska.....	17, 795	12, 463			
Buffalo.....	1, 443	9, 947			

EXPORTS

TABLE 32.—Exports of bituminous coal to (1) Canada and Mexico, (2) the West Indies and Central America, and (3) "overseas" destinations, 1928-32, in thousands of net tons

[Compiled from the record of the Bureau of Foreign and Domestic Commerce]

Year	(1) Canada and Mexico	(2) West Indies and Central America ¹	(3) "Overseas" (all other countries)							Grand total
			New- found- land, Mique- lon, and Ber- mudas	South Amer- ica	Europe	Asia	Africa	Oceania	Total "over- seas"	
1928.....	14, 049	1, 434	99	273	255	1	53	-----	681	16, 164
1929.....	14, 727	1, 500	211	332	567	8	84	-----	1, 202	17, 429
1930.....	13, 667	1, 180	95	353	469	14	97	2	1, 030	15, 877
1931.....	10, 647	755	98	306	246	18	56	-----	724	12, 126
1932.....	8, 429	235	6	108	3	8	25	(?)	150	8, 814

¹ Includes Bahamas, Virgin Islands, and Panama.

² 2 tons.

TABLE 33.—Bituminous coal exported, by countries, 1931 and 1932, in net tons¹

[Compiled from the records of the Bureau of Foreign and Domestic Commerce]

Country	1931	1932	Country	1931	1932
North America:			South America—Continued.		
Bermudas.....	14, 063	5, 949	Peru.....	2, 744	2, 313
British Honduras.....	183	177	Uruguay.....	26, 570	7, 267
Canada.....	10, 630, 898	8, 426, 886	Venezuela.....	18	37
Central America:				306, 564	108, 291
Costa Rica.....	2, 432	-----	Europe:		
Guatemala.....	319	472	Denmark.....	3, 494	-----
Honduras.....	538	480	France.....	37, 974	2, 787
Nicaragua.....	78	62	Germany.....	109	-----
Panama.....	178, 656	71	Italy.....	204, 302	-----
Salvador.....	29	20		245, 879	2, 787
Greenland.....	448	-----	Asia:		
Mexico.....	16, 206	1, 943	Aden.....	5, 123	-----
Miquelon and St. Pierre Islands.....	2, 317	-----	Arabia.....	601	-----
Newfoundland and Labrador.....	81, 523	-----	British Malaya.....	6, 623	1, 120
West Indies:			Ceylon.....	1, 121	638
British:			East Indies:		
Barbados.....	4, 945	-----	Netherland:		
Jamaica.....	44, 769	4, 283	Java and Madura.....	4, 236	6, 810
Trinidad and Tobago.....	29, 237	1, 840	Philippine Islands.....	6	13
Other British.....	6, 255	37	Other Asia.....	1	-----
Cuba.....	354, 630	158, 699		17, 716	8, 481
Dominican Republic.....	1, 438	130	Africa:		
French.....	86, 701	61, 280	Algeria and Tunisia.....	29, 721	-----
Haiti.....	2	2	Egypt.....	26, 053	24, 504
Netherland.....	3, 949	4, 309		55, 774	24, 504
Virgin Islands of the United States.....	40, 750	3, 342	Oceania: British:		
	11, 500, 366	8, 669, 982	Other than Australia and New Zealand.....	-----	2
South America:			Grand total.....	12, 126, 299	8, 814, 047
Argentina.....	72, 920	13, 153			
Brazil.....	197, 284	82, 122			
Colombia.....	118	92			
Ecuador.....	230	22			
Falkland Islands.....	4, 758	-----			
Guiana:					
British.....	-----	99			
Surinam (Nether- land).....	1, 922	3, 186			

¹ Amounts stated do not include fuel or bunker coal loaded on vessels engaged in the foreign trade, which aggregated 2,195,089 tons in 1931 and 1,348,837 tons in 1932.

TABLE 34.—*Bituminous coal exported, by districts and ports, 1931 and 1932, in net tons*

[Compiled from the records of the Bureau of Foreign and Domestic Commerce]

Customs district	1931	1932	Customs district	1931	1932
North Atlantic:			Rail gateways on Canadian border:		
New York.....	959	338	Eastern:		
Philadelphia.....	56, 618	5, 571	Maine and New Hampshire.....	5, 273	112
Maryland.....	160, 199	32, 617	Vermont.....	3, 081	1, 167
Virginia.....	1, 234, 208	330, 848	St. Lawrence.....	702, 607	417, 015
South Atlantic:			Rochester ²	1, 131, 358	753, 891
South Carolina.....	35, 808	19, 786	Buffalo.....	2, 278, 831	1, 881, 624
Georgia.....		2	Michigan.....	1, 140, 933	891, 104
Florida.....	28, 087	971	Western:		
Mobile.....	1, 055	5, 838	Duluth, Superior and International Falls.....	29, 836	14, 108
New Orleans.....	2, 203	3, 782	Dakota.....	7, 950	12, 190
Mexican border:			Montana-Idaho.....	49	8
Arizona.....	3, 783	607	Miscellaneous:		
El Paso.....	11, 281	920	Alaska.....	11	4
San Antonio.....	410	53	Puerto Rico.....	113	66
Pacific coast:			Hawaii.....		2
Washington ¹	8, 319	5, 323			
San Francisco.....	623	78			
San Diego.....	40	65			
Lake Erie ports: Ohio ²	5, 282, 664	4, 435, 957			
				12, 126, 299	8, 814, 047

¹ Both rail to Canada and by tide to foreign ports.² Lower lake docks as follows: Toledo, Sandusky, Huron, Lorain, Cleveland, Fairport, Ashtabula, Conneaut, and Erie.³ Rail, car ferry, and Lake Ontario.

SHIPMENTS TO ALASKA, HAWAII, AND PUERTO RICO

In addition to the export trade proper, the United States supplies a small tonnage to the Territories of Alaska, Hawaii, and Puerto Rico. In 1932, 28,422 tons were shipped to Alaska, 5,867 tons to Hawaii, and 11,941 tons to Puerto Rico.

WORLD PRODUCTION OF COAL

TABLE 35.—*Coal and lignite produced in the principal countries of the world in the calendar years 1931 and 1932, in thousands of metric tons*

[Compiled by L. M. Jones, of the Bureau of Mines]

Country	1931	1932	Country	1931	1932
North America:			Europe—Continued.		
Canada:			Spain:		
Coal.....	8, 466	7, 505	Coal.....	7, 186	6, 854
Lignite.....	2, 640	3, 130	Lignite.....	353	336
United States:			United Kingdom: Great		
Anthracite.....	54, 109	45, 228	Britain.....	222, 981	212, 083
Bituminous and lignite.....	346, 624	280, 963	Other countries.....	13, 251	13, 240
Other countries.....	927	692	Asia:		
South America.....	1, 849	¹ 1, 840	China.....	27, 682	¹ 28, 000
Europe:			India, British.....	22, 065	¹ 22, 000
Belgium.....	27, 042	21, 424	Japan (including Taiwan and Karafuto):		
Czechoslovakia:			Coal.....	29, 876	28, 100
Coal.....	13, 103	11, 053	Lignite.....	118	112
Lignite.....	17, 932	15, 909	Other countries.....	14, 325	15, 807
France:			Africa:		
Coal.....	50, 011	46, 266	Southern Rhodesia.....	587	438
Lignite.....	1, 035	991	Union of South Africa.....	10, 881	9, 921
Germany: ²			Other countries.....	456	410
Coal.....	118, 640	104, 740	Oceania:		
Lignite.....	133, 311	122, 615	Australia:		
Saar ³	11, 367	10, 438	New South Wales.....	6, 536	6, 893
Hungary:			Other States.....	4, 230	4, 450
Coal.....	776	895	New Zealand:		
Lignite.....	6, 111	5, 931	Coal.....	995	943
Netherlands:			Lignite.....	1, 197	928
Coal.....	12, 901	12, 756	Other countries.....		
Lignite.....	122	124			
Poland:			Total.....	1, 258, 000	1, 125, 000
Coal.....	38, 265	28, 835			
Lignite.....	41	33			
Russia:					
Coal.....	50, 460	53, 600			
Lignite.....					

¹ Approximate production.² Exclusive of mines in the Saar under French control.³ Mines under French control.

DETAILED STATISTICS OF BITUMINOUS COAL, BY STATES AND COUNTIES

TABLES OF PRODUCTION, VALUE, MEN EMPLOYED, DAYS WORKED, AND OUTPUT PER MAN IN 1932

Table 36 presents detailed statistics for each coal-producing county from which 3 or more operators reported production. If less than 3 reports were received the figures for 2 or more counties have been combined to avoid disclosing individual returns, unless permission to publish has been granted by the producers.

The series gives the details of total value of product, average value per ton, men employed by broad occupational groups, average number of days worked by the mines, and output per man per day. The figures include stripping operations as well as deep mines. Separate particulars for the stripping operations in each county are given in table 22. If the reader will deduct the stripping figures as given in that table from the totals for all mines in the following table he will find that the remainder represents the operations of the deep mines. By this means figures can be obtained for the deep mines separately in any State or county desired.

In response to many requests for data on the amount of coal shipped from mine to consumer by motor truck the Bureau of Mines in 1932 for the first time asked the mine operators to supply the information. The tonnage shown for "Trucked to distant points" represents coal moving by truck 10 miles or more from the mine. Coal moving less than 10 miles from the mine by truck is included under "Sold to local trade, used by employees, and nearby trucking."

Because of a change in the method of reporting, the statistics of average production per man per day in 1932 are not precisely comparable with those for earlier years. Hitherto they have been based on the calculated number of man-shifts, obtained by multiplying the average number of men employed at each mine by the number of days worked at the mine. In 1932 the operator was asked to make a special report of the number of man-shifts actually worked wherever the necessary record was kept. The number of operators who were able to furnish this information was small, except for certain of the far western States. The "reported" man-shifts were utilized wherever possible, in order to improve the accuracy of the record. Otherwise, the man-shifts were calculated by multiplying the number employed underground and on the surface by the number of days worked by the mine and tippie, respectively.

In order to facilitate comparisons with former years, the Bureau has also computed the output per man per day for 1932 using the "calculated" method throughout. The result for Alabama was 3.9 tons; Alaska, 4.48; Arizona, 1.61; Arkansas, 2.61; California, Idaho, and Oregon, 1.69; Colorado, 4.75; Georgia, 2.04; Illinois, 6.4; Indiana, 8.82; Iowa, 3.2; Kansas, 4.26; Kentucky, 5.46; Maryland, 3.09; Michigan, 2.98; Missouri, 4.48; Montana, 10.35; New Mexico, 3.84; North Carolina, 1.33; North Dakota, 7.61; Ohio, 4.62; Oklahoma, 3.43; Pennsylvania, bituminous, 4.8; South Dakota, 4.65; Tennessee, 3.2; Texas, 6.15; Utah, 7.98; Virginia, 5.17; Washington, 3.79; West Virginia, 5.99; and Wyoming, 7.16.

In this form the 1932 figures are precisely comparable with those for earlier years.

TABLE 36.—Production, value, men employed, days operated, and output per man per day at bituminous-coal mines in specified States and counties in 1932

[Note that figures relate only to active mines of commercial size; no canvass was made of wagon mines producing less than 1,000 tons. Waste and refuse are not included in tonnage. The statistics of average tons per man per day in 1932 are based upon (1) the "reported" number of man-shifts, where the operator keeps a record thereof; otherwise, upon (2) the "calculated" number of man-shifts, obtained by multiplying the average number of men employed underground and on the surface at each mine by the number of days worked by the mine and tippie, respectively. They are not precisely comparable with the figures published for earlier years, which have been based on a "calculated" method throughout, but in most States the discrepancy is slight.]

County	Net tons					Total quantity	Value		Number of employees			Average number of days mines operated	Average tons per man per day	
	Loaded at mines for shipment	Trucked to distant points	Sold to local trade, used by employees, and near-by trucking	Used at mines for power and heat	Made into coke at mines		Total	Average per ton	Under-ground	Surface				Total
										In strip pits	All others			
Bibb.....	393,881	800	4,400	7,335	-----	406,416	\$578,000	\$1.42	903	-----	129	1,032	122	3.23
Blount.....	72,948	-----	9,144	559	-----	82,451	130,000	1.58	345	11	68	424	68	2.87
Etowah.....	3,550	790	1,190	130	-----	5,660	12,000	2.12	29	-----	7	36	82	1.92
Jefferson.....	3,341,181	33,766	99,485	15,371	-----	3,489,803	5,552,000	1.59	9,518	-----	1,147	10,665	98	3.33
Marion.....	182,328	-----	9,164	-----	-----	191,492	352,000	1.84	471	-----	74	545	86	4.09
St. Clair.....	517,903	-----	5,178	26,689	-----	549,770	1,008,000	1.83	841	-----	141	982	110	5.10
Shelby.....	337,118	19,384	11,105	210	-----	367,817	676,000	1.84	854	-----	193	1,047	116	3.03
Tuscaloosa.....	103,667	-----	12,972	-----	-----	116,639	197,000	1.69	329	-----	73	402	98	2.97
Walker.....	2,493,898	214	36,440	2,925	-----	2,533,477	3,473,000	1.37	4,282	80	730	5,092	123	4.04
Other counties (Cullman, Fayette, and Winston).....	104,670	-----	8,646	98	-----	113,414	160,000	1.41	162	21	35	218	139	3.75
Total 1932.....	7,551,144	54,954	197,724	53,117	-----	7,856,939	12,138,000	1.54	17,734	112	2,597	20,443	107	3.60
Total 1931.....	11,645,980	288,739	64,062	-----	-----	11,998,781	21,866,000	1.82	19,987	179	2,807	22,973	136	3.84
ALASKA														
Total 1932.....	96,500	-----	5,170	1,030	-----	102,700	\$514,000	\$5.00	100	-----	20	120	189	4.53
Total 1931.....	99,500	5,300	-----	1,100	-----	105,900	556,000	5.25	49	-----	31	80	277	4.78
ARIZONA														
Total 1932.....	-----	3,877	3,000	-----	-----	6,877	\$33,000	\$4.80	13	-----	4	17	251	1.61
Total 1931.....	-----	7,120	-----	-----	-----	7,120	42,000	5.90	24	-----	3	27	115	2.29

ARKANSAS

Franklin.....	151,497	60	946	875	-----	153,378	\$348,000	\$2.27	421	50	47	518	90	3.29
Johnson.....	124,839	-----	9,867	1,539	-----	136,245	484,000	3.55	937	-----	179	1,116	49	2.48
Logan.....	223,515	-----	10	700	-----	224,225	794,000	3.54	712	-----	92	804	102	2.74
Pope and Scott.....	65,757	-----	3,060	1,182	-----	69,999	264,000	3.77	341	-----	37	378	106	1.75
Sebastian.....	435,300	-----	10,797	3,527	-----	449,624	941,000	2.09	1,325	-----	184	1,509	114	2.60
Total 1932.....	1,000,908	60	24,680	7,823	-----	1,033,471	2,831,000	2.74	3,736	50	539	4,325	92	2.61
Total 1931.....	1,121,368	23,730	-----	8,457	-----	1,153,555	3,511,000	3.04	4,110	36	587	4,733	95	2.58

CALIFORNIA, IDAHO, NEVADA (1931), AND OREGON

Total 1932.....	6,450	464	5,385	4,020	-----	16,319	\$60,000	\$3.68	88	-----	53	141	69	1.69
Total 1931.....	5,952	10,430	-----	1,003	-----	17,385	88,000	5.06	91	-----	25	116	86	1.74

COLORADO

Boulder.....	239,527	297,580	20,271	21,543	-----	578,921	\$1,434,000	\$2.48	635	-----	100	735	215	3.66
Delta.....	25,756	6,749	16,430	3,702	-----	52,637	135,000	2.56	48	-----	16	64	131	6.29
El Paso.....	113,723	12,753	177,238	9,495	-----	313,209	616,000	1.97	285	-----	40	325	235	4.10
Fremont.....	212,412	91,635	43,260	4,400	-----	351,707	855,000	2.43	673	-----	141	814	164	2.63
Garfield.....	6,143	4,979	22,451	76	-----	33,649	83,000	2.47	33	-----	12	45	169	4.43
Gunnison.....	383,657	3,276	6,692	10,028	-----	403,653	720,000	1.78	442	-----	100	542	138	5.40
Huerfano.....	634,947	19,511	13,731	6,656	-----	674,845	1,476,000	2.19	1,172	-----	238	1,410	127	3.76
Jefferson.....	104,012	22,947	4,342	1,250	-----	132,551	279,000	2.10	109	-----	31	140	245	3.87
La Plata.....	6,155	2,650	13,676	60	-----	22,541	42,000	1.86	37	-----	10	47	137	3.50
Larimer.....	-----	2,426	828	173	-----	3,427	8,000	2.33	11	-----	5	16	160	1.34
Las Animas.....	759,277	15,451	32,873	15,369	36,137	859,107	1,948,000	2.27	1,791	-----	271	2,062	103	4.03
Mesa.....	26,718	9,517	26,168	3,049	-----	65,452	155,000	2.37	90	-----	28	118	118	4.71
Moffat.....	-----	-----	3,798	-----	-----	3,798	8,000	2.11	6	-----	-----	6	128	4.93
Montezuma.....	-----	-----	3,677	-----	-----	3,677	7,000	1.90	7	-----	3	10	206	1.79
Rio Blanco.....	-----	2,398	2,925	-----	-----	5,323	9,000	1.69	7	-----	1	8	212	3.14
Routt.....	524,743	4,307	16,467	26,941	-----	572,458	1,387,000	2.42	707	-----	206	913	93	6.77
Weld.....	1,080,703	337,116	19,926	34,774	-----	1,472,519	2,990,000	2.03	1,248	-----	176	1,424	167	6.21
Other counties (Arapahoe, Elbert, Jackson, Montrose, Ouray, and Pitkin).....	38,333	6,026	2,930	1,958	-----	49,247	85,000	1.73	45	14	11	70	104	6.79
Total 1932.....	4,156,106	¹ 839,321	427,683	139,474	36,137	5,598,721	12,237,000	2.19	7,346	14	1,389	8,749	142	4.51
Total 1931.....	5,348,313	1,051,513	-----	145,392	59,161	6,004,369	15,944,000	2.41	8,497	12	1,519	10,028	142	4.64

¹ Includes 59,720 tons, part of which went less than 10 miles from the mines; separation not possible.

TABLE 36.—Production, value, men employed, days operated, and output per man per day at bituminous-coal mines in specified States and counties in 1932—Continued

GEORGIA

County	Net tons					Total quantity	Value		Number of employees			Average number of days mines operated	Average tons per man per day	
	Loaded at mines for shipment	Trucked to distant points	Sold to local trade, used by employees, and near-by trucking	Used at mines for power and heat	Made into coke at mines		Total	Average per ton	Underground	Surface				Total
										In strip pits	All others			
Total 1932.....	26,348	-----	135	725	-----	27,208	\$48,000	\$1.76	53	-----	64	208	2.04	
Total 1931.....	20,880	50	-----	650	-----	21,580	45,000	2.09	56	-----	62	180	1.93	

ILLINOIS

Bond and Marion.....	325,868	24,001	23,737	22,510	-----	396,116	\$573,000	\$1.45	532	-----	92	624	134	4.75
Bureau.....	-----	-----	15,052	1,580	-----	16,632	38,000	2.28	65	-----	10	75	140	1.59
Cass, Morgan, and Scott.....	-----	-----	5,733	-----	-----	5,733	11,000	1.92	20	-----	5	25	117	1.95
Christian.....	1,660,505	36,822	71,677	14,298	-----	1,783,302	2,636,000	1.48	2,328	-----	442	2,770	79	8.20
Clinton.....	18,659	74,772	32,089	12,467	-----	137,987	198,000	1.43	282	-----	84	366	65	5.76
Edgar.....	-----	11,680	3,400	1,726	-----	16,806	27,000	1.61	25	-----	5	30	171	3.27
Franklin.....	6,755,819	100	38,936	81,365	-----	6,876,220	10,837,000	1.58	7,454	-----	1,281	8,735	116	6.78
Fulton.....	1,130,454	42,075	136,112	5,562	-----	1,314,203	1,937,000	1.47	1,024	196	129	1,349	135	7.19
Gallatin.....	-----	9,073	12,163	1,669	-----	22,905	37,000	1.62	36	-----	9	45	187	2.73
Greene.....	-----	-----	9,669	-----	-----	9,669	19,000	1.97	30	-----	6	36	170	1.58
Grundy and Will.....	926,493	105,474	35,380	1,280	-----	1,068,627	1,973,000	1.85	144	174	53	371	229	12.56
Hancock and Warren.....	-----	1,418	6,985	205	-----	8,608	18,000	2.09	27	-----	6	33	143	1.82
Henry.....	514,309	-----	51,668	5,053	-----	637,597	1,053,000	1.65	271	47	98	416	190	8.07
Jackson.....	1,319,003	12,052	42,478	2,410	-----	1,375,943	1,811,000	1.32	508	87	272	867	136	11.69
Jersey and Pike.....	-----	-----	4,382	85	-----	4,467	10,000	2.24	7	14	1	22	128	1.58
Knox.....	210,022	31,845	56,688	978	-----	299,533	616,000	2.06	424	15	52	491	148	4.11
LaSalle.....	95,658	42,984	207,029	1,169	-----	346,840	797,000	2.30	586	55	66	707	186	2.63
Livingston.....	-----	-----	29,274	649	-----	29,923	80,000	2.67	40	28	8	76	178	2.21
Logan and Macon.....	40,491	-----	123,245	7,752	-----	171,488	387,000	2.13	443	-----	30	473	123	2.96
McDonough.....	-----	1,000	14,981	3	-----	15,984	31,000	1.94	22	24	3	49	130	2.52
Macoupin.....	1,830,394	-----	47,107	49,839	-----	1,927,340	2,689,000	1.40	2,770	-----	299	3,069	93	6.72
Madison.....	735,327	26,603	198,674	27,378	-----	987,982	1,363,000	1.38	1,469	-----	219	1,688	106	5.55
Marshall, Putnam, and Woodford.....	111,450	4,113	44,518	6,548	-----	166,629	354,000	2.12	648	-----	77	725	180	1.28
Menard.....	5,000	26,000	66,424	4,754	-----	102,178	204,000	2.00	146	-----	32	178	182	3.16
Mercer.....	-----	1,726	21,541	1,431	-----	24,698	52,000	2.11	56	-----	13	69	156	2.30

Montgomery	581,137	31,470	3,767	12,676	629,050	906,000	1.44	1,043	154	1,197	87	6.07	
Peoria	489,252	29,089	210,038	3,895	732,274	1,260,000	1.72	1,322	16	1,011	1,439	4.29	
Perry	2,977,849	1,700	75,787	34,100	3,089,436	3,757,000	1.22	1,189	572	193	1,954	117	13.49
Randolph	180,930	8,890	33,037	10,058	232,915	410,000	1.76	522	77	599	62	6.25	
Rock Island	15,291	15,291	35,169	830	51,290	106,000	2.07	102	11	113	181	2.51	
St. Clair	1,263,745	438,059	416,222	51,809	2,169,835	2,815,000	1.30	2,669	67	397	3,133	108	6.41
Saline	14,000	74,155	38,882	38,882	2,391,821	4,052,000	1.69	3,375	120	445	3,940	101	6.00
Sangamon	1,458,466	9,231	338,864	20,304	1,826,865	2,929,000	1.60	4,134	354	4,488	90	4.51	
Schuyler	1,600	21,676	104	104	23,380	44,000	1.88	52	17	11	80	157	1.86
Shelby	2,724	34,606	4,289	4,289	49,433	111,000	2.25	152	24	176	119	2.37	
Stark	204,953	9,938	170,788	976	10,448	26,000	2.49	33	8	41	156	1.63	
Tazewell	1,621,095	23,182	17,941	13,508	376,717	679,000	1.80	391	42	433	186	4.67	
Vermilion	12,473	2,900	16,759	2,685	1,883,726	3,204,000	1.70	2,658	203	242	3,103	110	5.51
Wabash and White	270,230	500	57,019	11,878	34,817	42,000	1.21	130	26	156	101	2.21	
Washington	1,730,360	23,716	99,111	32,322	339,627	465,000	1.37	281	58	339	160	6.27	
Williamson					1,885,509	2,759,000	1.46	2,588	58	471	3,117	100	6.05
Total 1932	28,793,563	¹ 1,069,634	3,121,819	489,637	33,474,553	51,316,000	1.53	39,998	1,693	5,906	47,597	112	³ 6.30
Total 1931	39,957,676	3,660,872	684,747	684,747	44,303,295	75,527,000	1.70	42,341	1,516	5,828	49,685	136	³ 6.54

INDIANA

Clay	548,312	1,400	23,103	22,110	594,925	\$816,000	\$1.37	68	284	46	398	157	9.53
Daviess		500	21,401	1,046	22,947	35,000	1.53	51	14	65	135	2.62	
Dubois and Martin		3,000	2,800		5,800	10,000	1.72	11	3	14	143	2.90	
Fountain, Parke, and Warren	3,000	9,765	22,700		35,465	67,000	1.89	64		78	168	2.71	
Gibson	1,040,542	1,200	82,420	14,672	1,138,834	1,480,000	1.30	730	14	148	878	191	6.77
Greene	1,658,118	8,300	36,951	26,269	1,729,638	2,417,000	1.40	777	341	64	1,182	243	10.27
Knox	1,450,815	52,000	40,531	17,972	1,561,318	1,877,000	1.20	539		216	755	202	10.25
Owen	136,771		59	5,550	142,350	205,000	1.44	44	50	4	98	103	8.92
Perry and Spencer		23	9,584	107	9,714	19,000	1.96	17		4	21	42	2.39
Pike	2,662,829		13,833	20,858	2,697,570	3,016,000	1.12	91	459	166	716	213	17.73
Sullivan	1,496,778	249	12,793	22,721	1,532,541	2,320,000	1.51	1,824	120	235	2,179	104	6.78
Vanderburg	62,550		132,894	10,000	205,444	238,000	1.16	321		45	366	109	5.13
Vermillion	1,004,196	19	30,972	14,123	1,049,310	1,492,000	1.42	1,007	110	142	1,259	111	7.49
Vigo	1,260,766	17,907	266,466	33,343	1,578,485	2,206,000	1.40	1,457	88	185	1,730	128	7.11
Warrick	861,367	112,156	34,320	11,359	1,019,202	1,069,000	1.05	628	140	132	900	184	6.15
Total 1932	12,186,044	⁴ 206,519	730,880	200,130	13,323,573	17,267,000	1.30	7,629	1,592	1,418	10,639	145	³ 8.65
Total 1931	13,135,525	920,239	239,401	239,401	14,295,165	20,735,000	1.45	9,441	1,635	1,235	12,311	14	³ 7.95

² Includes 208,709 tons, part of which went less than 10 miles from the mines; separation not possible.

³ Much of the output of the State is obtained from strip pits or by the use of loading machines, in which types of operations the production per man per day is large.

⁴ Includes 66,122 tons, part of which went less than 10 miles from the mines; separation not possible.

TABLE 36.—Production, value, men employed, days operated, and output per man per day at bituminous-coal mines in specified States and counties in 1932—Continued

County	Net tons					Value			Number of employees			Average number of days mines operated	Average tons per man per day	
	Loaded at mines for shipment	Trucked to distant points	Sold to local trade, used by employees, and near-by trucking	Used at mines for power and heat	Made into coke at mines	Total quantity	Total	Average per ton	Surface		Total			
									Underground	In strip pits				All others
Adams.....		4,000	11,733	127		15,860	\$48,000	\$3.03	56		9	65	132	1.85
Appanoose.....	540,079	18,745	55,624	790		615,238	1,419,000	2.31	1,584		234	1,818	133	2.55
Boone.....	14,300	296,147	89,498	3,650		403,595	1,320,000	3.27	983		67	1,050	143	2.68
Dallas.....	349,765	5,556	24,472	1,984		381,777	928,000	2.43	611		38	649	156	3.77
Davis and Lucas.....	479,433		6,084	4,228		489,745	1,112,000	2.27	636	5	43	684	155	4.62
Greene.....		16,000	14,008	270		30,278	85,000	2.81	85		11	96	99	3.19
Guthrie.....		2,600	9,784	51		12,435	44,000	3.54	58		8	66	148	1.27
Jasper.....		35,231	26,920	2,055		64,206	147,000	2.29	143		20	163	192	2.05
Jefferson and Keokuk.....		280	9,528	30		9,838	20,000	2.03			6	28	126	2.79
Mahaska.....	8,005	8,100	44,152	1,139		61,396	119,000	1.94	109	23	31	163	155	2.43
Marion.....	465,947	8,544	50,438	4,956		529,905	1,082,000	2.04	694	21	78	793	157	4.26
Monroe.....	357,933	3,043	32,343	2,238		395,557	860,000	2.17	616		61	677	187	3.13
Page.....	400	26,424	11,059			37,883	116,000	3.06	89		10	99	215	1.78
Polk.....	117,628	1,463	390,625	4,308		514,024	1,234,000	2.40	896		83	979	152	3.45
Taylor.....	450	8,000	4,355	28		12,833	38,000	2.96	73		7	80	125	1.29
Van Buren.....	147	1,350	5,023	110		6,630	16,000	2.41	23		5	28	143	1.65
Wapello.....	1,715	22,112	66,801	2,072		92,700	192,000	2.07	200	7	37	244	166	2.28
Warren.....	28,985	60,727	45,912	3,839		139,463	342,000	2.45	206	17	24	247	154	3.66
Wayne.....	5,120	11,200	10,829	350		27,499	61,000	2.22	94		15	109	117	2.15
Webster.....		530	21,016	27		21,573	71,000	3.29	27	12	9	48	142	3.16
Total 1932.....	2,651,754	248,225	930,204	32,252		3,862,435	9,254,000	2.40	7,183		107	8,086	151	3.17
Total, 1931.....	2,442,377	907,308		38,670		3,388,355	8,575,000	2.53	7,227		670	7,897	142	3.02

KANSAS														
Bourbon.....		2,244	15,460	506		18,210	\$17,000	\$0.93	5	21	4	30	155	3.93
Cherokee.....	241,238	8,554	29,608	531		280,231	508,000	1.81	223	86	47	356	133	5.94
Crawford.....	1,394,262	5,394	64,290	19,298		1,483,244	2,446,000	1.65	1,729	497	169	2,395	104	5.98
Labette.....	9,481		8,168	552		18,201	36,000	1.98		13	2	15	145	8.39
Linn.....		1,400	16,676	80		18,156	35,000	1.93	65	4	14	83	110	1.99
Osage.....	15,235	12,067	22,386	30		49,718	146,000	2.94	270	4	33	307	114	1.43

Other counties (Franklin and Leavenworth).....	35,734	3,000	46,391	-----	-----	85,125	232,000	2.73	338	-----	67	405	296	.71
Total 1932.....	1,695,950	32,659	202,979	21,297	-----	1,952,885	3,420,000	1.75	2,630	625	336	3,591	130	4.19
Total 1931.....	1,747,815	215,831	-----	23,224	-----	1,986,870	3,771,000	1.90	2,926	523	364	3,813	123	4.24

KENTUCKY

Eastern district:														
Bell.....	1,063,946	3,896	73,147	7,111	-----	1,148,100	\$1,126,000	\$0.98	1,780	-----	293	2,073	147	3.77
Boyd.....	40,698	4,150	7,055	2,189	-----	54,092	57,000	1.05	104	-----	27	131	136	3.04
Breathitt.....	76,058	-----	2,800	7,850	-----	86,708	111,000	1.28	159	-----	18	177	140	3.49
Carter.....	4,772	-----	10,313	-----	-----	15,085	39,000	2.59	48	-----	6	54	90	3.12
Clay.....	16,614	6	1,840	-----	-----	17,960	15,000	.84	84	-----	18	102	84	2.10
Floyd.....	2,825,811	750	18,845	5,321	-----	2,850,727	2,853,000	1.00	2,755	-----	513	3,268	175	4.99
Harlan.....	6,818,595	8	62,232	8,040	-----	6,888,875	7,765,000	1.13	6,653	-----	1,185	7,838	156	5.63
Jackson.....	-----	3,451	12,136	-----	-----	15,587	23,000	1.48	76	-----	12	88	69	2.56
Johnson.....	700,108	-----	9,124	3,783	-----	713,015	942,000	1.32	1,064	-----	165	1,229	104	5.56
Knott.....	615,664	-----	2,210	3,987	-----	621,861	526,000	.85	544	-----	92	636	199	4.90
Knox.....	332,568	-----	5,400	5,500	-----	343,468	321,000	.93	358	-----	102	460	201	3.72
Laurel.....	-----	1,114	15,653	-----	-----	16,767	23,000	1.37	62	-----	15	77	128	1.70
Letcher.....	3,453,874	-----	37,016	57,140	-----	3,548,030	4,107,000	1.16	3,906	-----	509	4,415	156	5.16
Martin.....	243,353	-----	1,324	85	-----	244,762	198,000	.81	229	-----	48	277	140	6.30
Perry.....	4,388,526	-----	28,349	12	-----	4,416,887	4,123,000	.93	3,693	-----	942	4,635	170	5.62
Pike.....	3,962,705	-----	28,094	11,420	-----	4,002,219	3,747,000	.94	3,533	-----	806	4,339	164	5.64
Rockcastle.....	-----	-----	912	-----	-----	912	1,000	1.10	20	-----	5	25	22	1.66
Whitley.....	197,504	46	6,484	11,589	-----	215,623	280,000	1.30	587	-----	91	678	85	3.74
Other counties (Lee, McCreary, Magoffin, and Morgan).....	545,489	800	4,912	7,655	-----	558,856	664,000	1.19	840	-----	121	961	124	4.69
Total 1932.....	25,286,285	14,221	327,346	131,682	-----	25,759,534	26,921,000	1.05	26,495	-----	4,968	31,463	156	5.24
Total 1931.....	30,770,237	459,083	-----	154,801	-----	31,384,121	42,055,000	1.34	31,437	-----	5,104	36,541	168	5.11
Western district:														
Butler.....	4,341	-----	25,216	-----	-----	29,557	29,000	.98	71	-----	21	92	175	1.84
Davess.....	-----	-----	83,186	795	-----	83,981	78,000	.93	104	-----	22	126	193	3.45
Henderson.....	51,389	22,678	67,383	8,691	-----	150,141	157,000	1.05	228	-----	46	274	150	3.64
Hopkins.....	2,690,658	18,054	88,483	10,619	-----	2,807,814	2,633,000	.94	2,675	-----	373	3,048	149	6.19
Muhlenberg.....	3,133,197	-----	80,672	63,593	-----	3,277,462	2,650,000	.81	2,991	30	497	3,518	141	6.63
Ohio.....	802,524	-----	15,708	5,262	-----	823,494	521,000	.63	790	-----	119	909	168	5.36
Union.....	618,746	10,887	29,298	20,570	-----	679,481	565,000	.83	644	-----	151	795	192	4.46
Webster.....	1,580,227	2,000	36,185	4,084	-----	1,622,496	1,281,000	.79	1,566	-----	251	1,817	144	6.21
Other counties (Christian and McLean).....	62,077	-----	3,020	525	-----	65,622	57,000	.87	196	-----	29	225	74	3.93
Total 1932.....	8,943,159	53,599	429,151	114,139	-----	9,540,048	7,971,000	.84	9,265	30	1,509	10,804	149	5.92
Total 1931.....	8,064,668	386,093	-----	128,739	-----	8,579,500	8,690,000	1.01	9,756	85	1,384	11,225	130	5.88
Total all Kentucky, 1932.....	34,229,444	67,820	756,497	245,821	-----	35,299,582	34,892,000	.99	35,760	30	6,477	42,267	155	5.41
Total all Kentucky, 1931.....	38,834,905	845,176	-----	283,540	-----	39,963,621	50,745,000	1.27	41,193	85	6,488	47,766	159	5.26

* Includes 20,848 tons, part of which went less than 10 miles from the mines; separation not possible.

* Includes 15,278 tons, part of which went less than 10 miles from the mines; separation not possible.

TABLE 36.—Production, value, men employed, days operated, and output per man per day at bituminous-coal mines in specified States and counties in 1932—Continued

County	Net tons						Value		Number of employees			Average number of days mines operated	Average tons per man per day	
	Loaded at mines for shipment	Trucked to distant points	Sold to local trade, used by employees, and nearby trucking	Used at mines for power and heat	Made into coke at mines	Total quantity	Total	Average per ton	Underground	Surface				Total
										In strip pits	All others			
Allegany.....	802,036	10,658	113,818	265	-----	926,777	\$1,210,000	\$1.31	2,001	-----	246	2,247	152	2.72
Garrett.....	485,570	443	8,920	7,227	-----	502,160	617,000	1.23	747	-----	111	858	145	4.03
Total 1932.....	1,287,606	11,101	122,738	7,492	-----	1,428,937	1,827,000	1.28	2,748	-----	357	3,105	150	3.07
Total 1931.....	1,894,369	100,807	10,597	-----	-----	2,005,773	2,907,000	1.45	2,874	-----	350	3,224	190	3.27
MARYLAND														
Bay, Midland, and Saginaw.....	341,416	37,667	47,260	19,806	-----	446,149	\$1,219,000	\$2.73	852	-----	88	940	159	2.98
Total 1932.....	341,416	37,667	47,260	19,806	-----	446,149	1,219,000	2.73	852	-----	88	940	159	2.98
Total 1931.....	329,364	18,087	-----	11,952	-----	359,403	1,094,000	3.04	1,277	-----	95	1,372	96	2.74
MICHIGAN														
MISSOURI														
Adair.....	104,898	5,657	31,433	4,220	-----	146,208	\$269,000	\$1.84	386	-----	59	445	154	2.13
Audrain.....	-----	225	4,636	-----	-----	4,861	11,000	2.26	23	-----	5	28	185	.94
Barton.....	1,126,341	-----	2,123	2,350	-----	1,130,814	1,713,000	1.51	3	337	32	372	143	\$ 21.19
Bates.....	801,848	12,891	4,467	4,304	-----	823,510	760,000	.92	47	241	9	297	213	\$ 13.01
Boone.....	-----	1,900	52,327	50	-----	54,277	111,000	2.05	95	27	19	141	210	1.84
Caldwell and Platte.....	7,006	-----	20,660	2,982	-----	30,648	123,000	4.01	146	-----	16	162	103	1.84
Callaway.....	-----	3,500	32,560	16	-----	36,076	85,000	2.36	68	20	18	106	196	1.74
Chariton and Howard.....	-----	100	1,700	-----	-----	1,800	4,000	2.22	12	-----	3	15	139	.87
Clay.....	26,539	27,079	16,510	1,536	-----	71,664	187,000	2.61	253	-----	20	273	166	1.58
Grundy, Harrison, and Schuyler.....	2,400	1,892	9,889	150	-----	14,331	39,000	2.72	70	-----	10	80	126	1.42
Henry.....	408,219	3,410	63,424	4,038	-----	479,091	786,000	1.64	50	132	75	257	174	\$ 10.72
Johnson.....	-----	480	4,075	-----	-----	4,555	11,000	2.41	8	-----	2	25	133	1.37
Lafayette.....	349,481	20,486	43,511	5,050	-----	418,528	841,000	2.01	946	-----	87	1,033	190	2.13

Linn.....	18,672	200	25,438	115	44,425	110,000	2.48	220	35	255	137	1.27
Macon.....	126,167		33,245	4,415	163,827	304,000	1.86	320	68	388	145	2.92
Monroe and Ralls.....	4,278	4,611	1,840		10,729	26,000	2.42	39	7	46	196	1.19
Putnam.....	630	1,589	17,017	55	19,291	30,000	1.56	88	20	108	112	1.59
Randolph.....	299,600	4,804	89,653	2	344,059	615,000	1.79	372	80	64	516	2.06
Ray.....	177,514	7,664	53,989	2,177	241,344	580,000	2.40	954	123	1,077	122	1.83
Vernon.....	16,463		6,677	560	23,700	40,000	1.69	9	30	3	42	7.76
Other counties (Jasper and Lincoln).....			5,860		5,860	9,000	1.54	2	8	1	11	105
Total 1932.....	3,470,056	96,488	471,034	32,020	4,069,598	6,654,000	1.64	4,111	890	676	5,677	161
Total 1931.....	3,134,936	449,885		35,676	3,620,497	7,248,000	2.00	3,948	919	495	5,362	142

MONTANA

Blaine, Chouteau, and Toole.....			9,341		9,341	\$29,000	\$3.10	30		6	36	135	1.93
Carbon.....	335,422	4,518	12,474	5,414	357,828	702,000	1.96	363		180	493	114	6.39
Cascade.....	275,777	2,591	24,793	72	303,233	460,000	1.52	241		36	277	168	6.52
Daniels, Roosevelt, and Valley.....		1,310	5,025	50	6,385	9,000	1.41	8	2	1	11	189	3.08
Dawson and McCone.....			2,010		2,010	3,000	1.49	2	2		4	150	3.35
Fergus and Judith Basin.....		1,520	4,013		5,533	16,000	2.89	11		4	15	178	2.07
Hill.....			4,068	71	4,139	10,000	2.42	14		3	17	138	1.77
Musselshell.....	634,612		11,600	3,925	650,137	1,105,000	1.70	408		181	539	163	7.90
Richland.....	11,100		5,812		16,912	34,000	2.01	22		4	26	147	4.43
Rosebud.....	744,502	800	175	770	746,247	1,119,000	1.50	4	40	14	58	189	67.94
Sheridan.....			11,155	55	11,210	16,000	1.43	17		5	22	207	2.47
Wibaux.....			8,909	50	8,959	17,000	1.90	11		2	13	212	3.25
Other counties (Park and Powder River).....			3,291		3,291	7,000	2.13	8	3	3	14	73	3.23
Total 1932.....	2,001,413	110,739	102,666	10,407	2,125,225	3,527,000	1.66	1,139	47	389	1,525	145	
Total 1931.....	2,234,392	125,714		17,946	2,378,052	4,299,000	1.81	1,264	56	352	1,672	153	

⁷ Includes some coal which went less than 10 miles from the mines; separation not possible.

⁸ The output is chiefly obtained from strip pits in which the production per man per day is large.

⁹ Includes 12,863 tons, part of which went less than 10 miles from the mines; separation not possible.

¹⁰ The output is obtained from strip pits in which the production per man per day is large.

¹¹ Includes 4,518 tons, part of which went less than 10 miles from the mines; separation not possible.

COAL

TABLE 36.—Production, value, men employed, days operated, and output per man per day at bituminous-coal mines in specified States and counties in 1932—Continued

County	Net tons						Value		Number of employees			Average number of days mines operated	Average tons per man per day	
	Loaded at mines for shipment	Trucked to distant points	Sold to local trade, used by employees, and nearby trucking	Used at mines for power and heat	Made into coke at mines	Total quantity	Total	Average per ton	Underground	Surface				Total
										In strip pits	All others			
Colfax.....	591,375	1,082	18,766	15,000	-----	626,223	\$1,626,000	\$2.60	927	-----	141	1,068	101	5.81
Lincoln and Socorro.....	3,250	540	1,465	-----	-----	5,255	19,000	3.62	14	-----	3	17	188	1.64
McKinley.....	425,035	1,687	24,003	29,879	-----	480,504	1,198,000	2.49	911	-----	132	1,043	127	3.61
Rio Arriba.....	16,009	31	3,717	212	-----	19,969	41,000	2.05	34	-----	10	44	191	2.38
Sandoval and Santa Fe.....	112,097	-----	5,783	9,861	-----	127,741	432,000	3.38	323	-----	87	410	188	1.66
San Juan.....	-----	1,085	2,609	-----	-----	3,694	5,000	1.35	16	-----	4	20	81	2.28
Total 1932.....	1,147,766	4,325	56,343	54,952	-----	1,263,386	3,321,000	2.63	2,225	-----	377	2,602	127	3.82
Total 1931.....	1,434,784	64,484	-----	53,554	-----	1,552,822	4,597,000	2.96	2,417	-----	413	2,830	145	3.78
NORTH CAROLINA														
Total 1932.....	150	450	1,100	200	-----	1,900	\$6,000	\$3.16	20	-----	6	26	55	1.33
Total 1931.....	1,600	583	-----	180	-----	2,363	9,000	3.81	23	-----	9	32	83	1.89
NORTH DAKOTA (LIGNITE)														
Adams.....	31,869	500	19,004	2,156	-----	53,529	\$87,000	\$1.63	42	-----	20	62	147	5.85
Bowman.....	1,460	2,000	7,249	-----	-----	10,709	15,000	1.40	13	-----	2	3	18	3.08
Burke.....	182,983	250	10,658	80	-----	193,971	217,000	1.12	-----	-----	43	17	60	14.46
Burleigh.....	181,697	3,900	27,581	325	-----	213,503	252,000	1.18	37	-----	28	22	87	11.11
Divide.....	137,821	5,196	13,366	-----	-----	156,383	205,000	1.31	8	-----	20	20	48	13.39
Grant.....	15,000	2,875	15,436	220	-----	33,331	51,000	1.53	18	-----	21	11	50	3.49
Hettinger.....	2,100	1,500	14,555	-----	-----	18,155	25,000	1.38	21	-----	23	6	50	2.54
McLean.....	73,295	4,000	25,981	3,765	-----	107,041	153,000	1.43	44	-----	76	29	149	4.79
Mercer.....	455,587	-----	4,705	48,931	-----	509,223	627,000	1.23	221	-----	30	86	337	8.11
Morton.....	15,289	769	8,019	-----	-----	24,077	40,000	1.66	27	-----	4	5	36	3.87
Mountrail.....	200	200	4,722	-----	-----	5,122	8,000	1.56	8	-----	7	1	16	2.38

Stark	3,150	9,880	27,456	2,200	42,686	59,000	1.38	62	12	74	174	3.31	
Ward	241,501	10,043	86,107	314	337,965	411,000	1.22	131	37	61	229	6.59	
Williams	2,669	577	26,374	6	29,626	45,000	1.52	61	2	17	80	2.65	
Other counties (Golden Valley, McKenzie, and Oliver)		200	4,137		4,337	5,000	1.15	3	11	1	15	2.38	
Total 1932	1,344,621	¹² 41,690	295,350	57,997	1,739,653	2,200,000	1.26	696	304	311	1,311	186	7.12
Total 1931	1,147,142	355,262		16,903	1,519,307	2,155,000	1.42	772	275	253	1,300	166	7.04

OHIO

Athens	1,205,781	5,231	20,785	9,023	1,240,820	\$1,375,000	\$1.11	3,634	450	4,084	76	3.99	
Belmont	3,639,373	6,964	21,203	17,586	3,875,126	3,675,000	.95	5,716	649	6,365	121	5.01	
Carroll	200,874	24,920	42,082	33	267,909	297,000	1.11	308	45	353	179	4.24	
Columbiana	70,520	2,580	62,557	273	135,930	177,000	1.30	231	42	273	164	3.03	
Coshocton	63,143	10,473	42,554	377	116,547	127,000	1.09	206	45	251	110	3.89	
Guernsey	1,133,424	350	92,689	4,724	1,231,187	1,366,000	1.11	1,237	129	1,366	172	5.25	
Harrison	1,770,031		11,297	8,522	1,739,850	1,861,000	1.04	801	201	1,146	100	8.20	
Hocking	73,802	6,482	39,394	13	119,691	135,000	1.13	467	96	563	57	3.72	
Holmes			8,817	135	8,952	15,000	1.68	18	5	26	176	1.96	
Jackson	8,334	3,425	37,667	29	49,455	73,000	1.48	124	7	152	118	2.75	
Jefferson	2,003,026	3,840	266,002	10,327	2,283,795	2,774,000	1.21	2,903	386	3,349	148	4.61	
Lawrence		2,080	51,540		53,620	92,000	1.72	133	21	154	111	3.12	
Mahoning		5,000	87,932	30	92,962	177,000	1.90	237	48	285	133	2.45	
Medina and Wayne		1,050	17,456	1,870	20,376	45,000	2.21	36	8	44	127	3.65	
Meigs	210,319	11,080	30,712	2,000	254,111	287,000	1.13	578	68	646	116	3.38	
Muskingum	317,000	17,035	57,642	4,349	396,026	567,000	1.43	278	62	397	204	4.90	
Noble	409,704		6,650	6,258	422,612	487,000	1.15	392	30	422	198	5.06	
Perry	273,082	11,008	38,304	301	322,695	363,000	1.12	1,036	150	1,186	71	3.84	
Portage		4,508	6,506	852	11,866	29,000	2.44	23	6	29	175	2.34	
Stark	41,718	23,144	243,345	1,232	314,439	453,000	1.44	411	13	70	494	3.09	
Summit		12,928	4,422	300	17,650	38,000	2.15	53	12	65	156	1.75	
Tuscarawas	442,908	75,332	245,089	1,701	765,030	867,000	1.13	891	14	1,028	181	4.12	
Vinton	14,786	537	2,154	473	17,950	20,000	1.11	179	28	207	29	2.97	
Other counties (Gallia, Morgan, and Scioto)	95,020		5,832		100,852	118,000	1.17	362	33	395	88	2.92	
Total 1932	11,972,845	227,967	1,638,231	70,408	13,909,451	15,413,000	1.11	20,254	300	2,726	23,280	127	4.71
Total 1931	18,535,771	1,766,367		108,857	20,410,995	25,371,000	1.24	22,134	400	2,551	25,085	174	4.68

COAL

⁸ The output is chiefly obtained from strip pits in which the production per man per day is large.
¹² Includes 3,990 tons, part of which went less than 10 miles from the mines; separation not possible.

TABLE 36.—Production, value, men employed, days operated, and output per man per day at bituminous-coal mines in specified States and counties in 1932—Continued

OKLAHOMA

County	Net tons					Total quantity	Value		Number of employees				Average number of days mines operated	Average tons per man per day
	Loaded at mines for shipment	Trucked to distant points	Sold to local trade, used by employees, and near-by trucking	Used at mines for power and heat	Made into coke at mines		Total	Average per ton	Underground	Surface		Total		
										In strip pits	All others			
Coal.....	38,982	800	3,104	-----	-----	42,886	\$116,000	\$2.70	85	-----	12	97	171	2.59
Craig.....	-----	700	3,116	610	-----	4,426	6,000	1.36	11	5	3	19	114	2.05
Haskell.....	82,887	-----	4,376	1,000	-----	88,263	174,000	1.97	95	27	23	145	155	3.93
Latimer.....	80,326	175	115	3,343	-----	83,959	187,000	2.23	209	-----	40	249	123	2.75
LeFlore.....	316,505	100	5,079	1,383	-----	323,067	790,000	2.45	877	-----	178	1,055	106	2.89
Muskogee and Wagoner.....	118,838	-----	2,245	1,247	-----	122,330	211,000	1.72	-----	103	-----	103	124	10 9.60
Okmulgee.....	253,120	-----	550	1,063	-----	254,733	433,000	1.70	484	-----	72	556	114	4.00
Pittsburg.....	184,056	74	12,583	6,332	-----	203,045	453,000	2.23	510	2	83	695	137	2.49
Rogers.....	20,112	-----	1,346	640	-----	22,098	35,000	1.72	-----	39	14	53	47	10 8.89
Tulsa.....	95,275	15	12,678	2,693	-----	110,659	238,000	2.15	118	41	32	191	130	4.46
Total 1932.....	1,190,101	1,864	45,190	18,311	-----	1,255,466	2,646,000	2.11	2,389	217	457	3,063	120	3.40
Total 1931.....	1,825,893	61,434	-----	21,067	-----	1,908,394	4,614,000	2.42	3,885	285	464	4,634	115	3.59

PENNSYLVANIA (BITUMINOUS)

Allegheny.....	9,564,955	454,733	1,638,043	62,843	-----	11,720,574	\$14,509,000	\$1.24	11,031	43	1,166	12,240	196	4.88
Armstrong.....	2,232,050	1,829	65,255	408	-----	2,299,542	2,615,000	1.14	3,144	-----	386	3,530	123	5.31
Beaver.....	1,985	-----	61,375	64	-----	63,424	110,000	1.73	120	-----	23	143	165	2.69
Bedford.....	174,318	25,570	133,610	950	-----	334,448	600,000	1.79	644	-----	81	725	132	3.48
Blair.....	85,792	85,793	63,912	12	345	235,764	395,000	1.68	508	-----	54	562	177	2.37
Bradford and Lycoming.....	22,808	6,784	9,723	-----	-----	39,315	90,000	2.29	98	-----	12	110	211	1.70
Butler.....	373,488	3,093	125,711	1,270	-----	503,562	640,000	1.27	1,016	-----	124	1,140	130	3.40
Cambria.....	9,828,163	75,030	773,550	114,765	43,951	10,835,759	16,399,000	1.51	14,949	-----	1,785	16,734	152	4.26
Center.....	409,189	28,317	998	-----	-----	487,752	689,000	1.41	967	-----	97	1,064	140	3.27
Clarion.....	1,079,968	12,552	14,915	2,263	-----	1,109,698	1,552,000	1.40	1,371	-----	143	1,514	190	3.85
Clearfield.....	2,535,660	2,059	46,748	3,977	-----	2,588,444	3,320,000	1.28	4,710	-----	449	5,159	133	3.78
Clinton.....	54,000	11,612	9,229	558	-----	75,399	105,000	1.39	143	-----	16	159	180	2.63
Elk.....	665,723	8,803	13,827	13,331	-----	701,684	963,000	1.37	1,342	-----	133	1,475	129	3.69
Fayette.....	7,615,792	8,004	163,046	119,170	468,752	8,374,764	11,916,000	1.42	10,699	-----	1,468	12,167	131	5.25

Greene.....	3, 134, 862	247	16, 804	19, 041	-----	3, 170, 954	4, 133, 000	1. 30	2, 526	-----	442	2, 968	197	5. 41
Huntingdon.....	490, 847	25, 725	10, 687	11, 145	-----	538, 404	925, 000	1. 72	875	-----	91	966	201	2. 77
Indiana.....	4, 680, 416	161	190, 685	52, 922	27, 304	4, 951, 488	6, 797, 000	1. 37	6, 354	-----	777	7, 131	131	5. 29
Jefferson.....	1, 646, 217	4, 163	28, 641	9, 030	-----	1, 688, 051	2, 265, 000	1. 34	2, 204	10	210	2, 424	160	4. 36
Lawrence.....	82, 292	5, 100	17, 994	13, 266	-----	118, 052	251, 000	2. 13	301	-----	47	348	115	2. 96
Mercer.....	95, 384	49, 001	29, 732	12, 521	-----	186, 638	372, 000	1. 99	396	-----	61	457	156	2. 58
Somerset.....	5, 334, 228	6, 385	103, 785	84, 913	-----	5, 529, 311	7, 740, 000	1. 40	7, 092	-----	1, 030	8, 122	147	4. 64
Tioga.....	125, 637	31, 678	30, 522	4, 552	-----	192, 289	519, 000	2. 70	425	-----	71	496	151	2. 56
Washington.....	10, 170, 402	57, 813	251, 126	27, 481	-----	10, 506, 822	12, 719, 000	1. 21	11, 604	44	1, 253	12, 901	170	4. 78
Westmoreland.....	7, 442, 783	127, 335	430, 637	100, 966	236, 248	8, 337, 969	10, 413, 000	1. 25	10, 151	-----	1, 556	11, 707	138	5. 18
Other counties (Fulton, McKean, and Venango).....	175, 934	2, 957	6, 253	611	-----	185, 755	324, 000	1. 74	257	-----	33	290	222	2. 89
Total 1932.....	68, 022, 893	¹³ 1, 055, 485	4, 263, 827	657, 057	776, 600	74, 775, 862	100, 361, 000	1. 34	92, 927	97	11, 508	104, 532	154	4. 66
Total 1931.....	89, 830, 912	5, 816, 448	-----	739, 434	1, 271, 904	97, 658, 698	155, 060, 000	1. 59	103, 760	194	12, 772	116, 726	169	4. 96

SOUTH DAKOTA (LIGNITE)

Corson and Ziebach.....	160	2, 886	200	-----	-----	3, 246	\$6, 000	\$1. 85	-----	4	-----	4	162	5. 02
Dewey.....	26, 334	6, 500	2, 892	-----	-----	35, 726	62, 000	1. 74	-----	37	15	52	117	5. 87
Harding.....	-----	500	1, 180	-----	-----	1, 680	3, 000	1. 79	4	3	1	8	61	3. 43
Meade.....	-----	500	750	5	-----	1, 255	5, 000	3. 98	6	-----	1	7	161	1. 12
Perkins.....	-----	500	6, 647	20	-----	7, 167	11, 000	1. 53	6	5	2	13	170	3. 24
Total 1932.....	26, 494	⁷ 10, 886	11, 669	25	-----	49, 074	87, 000	1. 77	16	49	19	84	126	4. 65
Total 1931.....	7, 023	20, 462	-----	-----	-----	27, 485	64, 000	2. 33	17	34	5	56	127	3. 86

TENNESSEE

Anderson.....	635, 165	-----	8, 272	3, 250	-----	646, 687	\$794, 000	\$1. 23	-----	-----	182	1, 000	134	4. 82
Campbell.....	792, 297	3, 662	21, 392	7, 618	-----	824, 969	1, 063, 000	1. 29	1, 538	-----	230	1, 768	139	3. 36
Clairborne.....	636, 943	1, 202	13, 295	4, 380	-----	655, 820	903, 000	1. 38	1, 152	-----	189	1, 341	125	3. 92
Fentress.....	111, 953	-----	2, 605	4, 909	-----	119, 467	113, 000	. 95	315	-----	67	382	101	3. 10
Hamilton.....	8, 562	17, 032	7, 668	160	-----	33, 422	41, 000	1. 23	44	-----	6	50	229	2. 91
Marion.....	237, 156	11, 795	3, 838	-----	-----	249, 789	437, 000	1. 75	420	-----	109	529	201	2. 35
Morgan.....	281, 072	-----	995	7, 627	15, 778	305, 472	311, 000	1. 02	753	-----	105	858	254	1. 40
Other counties (Bledsoe, Cumberland, Grundy, Overton, Putnam, Rhea, Scott, Sequatchie, Van Buren, and White).....	640, 503	7, 668	33, 459	14, 084	6, 542	702, 256	1, 008, 000	1. 44	1, 405	-----	192	1, 597	121	3. 64
Total 1932.....	3, 343, 651	41, 359	88, 524	42, 028	22, 320	3, 537, 882	4, 670, 000	1. 32	6, 445	-----	1, 080	7, 525	148	3. 18
Total 1931.....	4, 542, 520	105, 824	-----	39, 281	33, 923	4, 721, 548	6, 942, 000	1. 47	6, 453	-----	995	7, 448	171	3. 72

⁷ Includes some coal which went less than 10 miles from the mines; separation not possible.

¹⁰ The output is obtained from strip pits in which the production per man per day is large.

¹³ Includes 150,978 tons, part of which went less than 10 miles from the mines; separation not possible.

COAL

433

TABLE 36.—Production, value, men employed, days operated, and output per man per day at bituminous-coal mines in specified States and counties in 1932—Continued

County	Net tons						Value		Number of employees			Average number of days mines operated	Average tons per man per day	
	Loaded at mines for shipment	Trucked to distant points	Sold to local trade, used by employees, and nearby trucking	Used at mines for power and heat	Made into coke at mines	Total quantity	Total	Average per ton	Underground	Surface				Total
										In strip pits	All others			
Bituminous: Brewster, Palo Pinto, and Webb.....	18,141	626	2,375	1,800	-----	22,942	\$55,000	\$2.40	156	-----	59	215	100	1.07
Total bituminous 1932.....	18,141	626	2,375	1,800	-----	22,942	55,000	2.40	156	-----	59	215	100	1.07
Total bituminous 1931.....	57,232	1,475	1,700	-----	-----	60,407	190,000	3.15	388	-----	71	459	137	.96
Lignite:														
Anderson, Henderson, and Houston.....	376,779	-----	103	3,474	-----	380,356	649,000	1.71	196	13	18	227	203	8.25
Bastrop, Bexar, and Milam.....	139,827	-----	300	2,022	-----	142,149	92,000	.65	144	14	13	171	135	6.15
Rains, Titus, and Wood.....	89,325	-----	1,445	373	-----	91,143	108,000	1.18	69	-----	17	86	180	5.89
Total lignite 1932.....	605,931	-----	1,848	5,869	-----	613,648	849,000	1.38	409	27	48	484	175	7.25
Total lignite 1931.....	646,245	1,191	8,177	-----	-----	655,613	880,000	1.34	616	24	49	689	142	6.70
State total 1932.....	624,072	626	4,223	7,669	-----	636,590	904,000	1.42	565	27	107	699	152	6.00
State total 1931.....	703,477	2,666	9,877	-----	-----	716,020	1,070,000	1.49	1,004	24	120	1,148	140	4.46
UTAH														
Carbon.....	2,458,721	17,595	20,996	4,125	13,098	2,514,535	\$5,002,000	\$1.99	1,886	-----	608	2,494	176	5.74
Emery.....	206,750	1,600	8,453	664	-----	217,467	432,000	1.99	119	-----	36	155	187	7.49
Summit.....	29,320	-----	5,956	300	-----	35,576	71,000	2.00	51	-----	9	60	190	3.13
Uintah.....	-----	850	1,685	46	-----	2,581	10,000	3.87	11	-----	4	15	180	.96
Other counties (Grand, Iron, Kane, and Sevier).....	73,754	-----	3,701	4,513	-----	81,968	170,000	2.07	88	-----	30	118	165	4.22
Total 1932.....	2,768,545	20,045	40,791	9,648	13,098	2,852,127	5,685,000	1.99	2,155	-----	687	2,842	176	5.69
Total 1931.....	3,273,762	61,936	6,911	7,435	-----	3,350,044	7,442,000	2.22	2,576	-----	692	3,268	140	7.34

VIRGINIA

Dickenson.....	754,252		15,132	342		769,726	\$780,000	\$1.01	691		119	810	131	7.26
Lee.....	1,525,689		15,543	1,270		1,542,502	1,767,000	1.15	1,728		259	1,987	149	5.21
Montgomery.....	152,272		3,502	1,107		156,881	534,000	3.40	361		105	466	160	2.11
Russell.....	653,845	3,443	12,907	3,874		674,069	698,000	1.04	859		203	1,062	124	5.12
Tazewell.....	1,780,434		27,152			1,807,586	2,062,000	1.14	1,740		380	2,120	165	5.16
Wise.....	2,555,635	2,393	23,410	23,609	95,486	2,700,533	3,353,000	1.24	3,215		500	3,715	136	5.36
Other counties (Buchanan and Pulaski).....	39,254		379	1,250		40,883	86,000	2.10	166		50	216	130	1.45
Total 1932.....	7,461,381	5,836	98,025	31,452	95,486	7,692,180	9,280,000	1.21	8,760		1,616	10,376	144	5.16
Total 1931.....	9,392,255	102,918		39,386	164,121	9,698,680	14,060,000	1.45	9,720		1,637	11,357	175	4.88

WASHINGTON

King.....	297,857	69,517	114,717	472		482,563	\$1,365,000	\$2.83	637		159	796	209	2.91
Kittitas.....	655,961	15,353	15,707	10,879		697,900	2,132,000	3.05	999		214	1,213	139	4.13
Lewis.....	34,073	6,269	18,858	1,364		60,564	135,000	2.23	103	4	39	146	125	3.33
Pierce.....	145,187	2,586	6,034	1,238	1,206	156,251	560,000	3.58	277		54	331	171	2.75
Thurston.....	70,097	132	3,393			73,622	158,000	2.15	62		19	81	152	5.97
Whatcom.....	96,853		19,836	2,964		119,653	406,000	3.39	198		40	238	127	3.97
Other counties (Chelan and Cowitz).....		100	751	22		873	3,000	3.44	8		3	11	117	.68
Total 1932.....	1,300,028	¹⁴ 93,957	179,296	16,939	1,206	1,591,426	4,759,000	2.99	2,284	4	528	2,816	161	3.51
Total 1931.....	1,622,947	197,540		25,017	957	1,846,461	5,800,000	3.14	2,233		420	2,662	170	4.09

¹⁴ Includes 33,611 tons, part of which went less than 10 miles from the mines; separation not possible.

COAL

435

TABLE 36.—Production, value, men employed, days operated, and output per man per day at bituminous-coal mines in specified States and counties in 1932—Continued

WEST VIRGINIA

County	Net tons					Value			Number of employees			Average number of days mines operated	Average tons per man per day	
	Loaded at mines for shipment	Trucked to distant points	Sold to local trade, used by employees, and nearby trucking	Used at mines for power and heat	Made into coke at mines	Total quantity	Total	Average per ton	Underground	Surface				Total
										In strip pits	All others			
Barbour.....	913, 134	300	16, 375	1, 108	-----	930, 917	\$746, 000	\$0. 80	1, 101	-----	137	1, 238	119	6. 34
Boone.....	2, 227, 269	-----	15, 484	4, 969	-----	2, 247, 722	2, 555, 000	1. 14	1, 845	-----	367	2, 212	175	5. 80
Brooke.....	464, 741	-----	549, 857	9, 936	-----	1, 024, 534	1, 472, 000	1. 44	822	-----	130	952	182	5. 92
Clay.....	497, 501	-----	18, 015	12, 640	-----	528, 156	432, 000	. 82	539	-----	95	634	178	4. 67
Fayette.....	9, 250, 259	1, 450	94, 336	24, 348	52, 602	9, 422, 995	12, 811, 000	1. 36	8, 960	-----	1, 381	10, 341	187	4. 86
Gilmer.....	11, 444	560	2, 662	200	-----	14, 866	16, 000	1. 08	44	-----	16	60	71	3. 51
Grant and Tucker.....	476, 651	-----	12, 081	25, 948	-----	514, 680	725, 000	1. 41	883	-----	147	1, 030	123	4. 06
Greenbrier.....	1, 335, 999	-----	15, 503	8, 156	-----	1, 359, 658	1, 474, 000	1. 08	1, 284	-----	195	1, 479	186	4. 93
Hancock.....	-----	-----	14, 812	212	-----	15, 024	19, 000	1. 26	37	-----	9	46	220	1. 49
Harrison.....	3, 092, 977	-----	145, 810	637	419	3, 239, 843	2, 712, 000	. 84	2, 280	-----	349	2, 629	173	7. 13
Kanawha.....	4, 418, 171	5, 260	93, 609	4, 835	-----	4, 521, 875	4, 584, 000	1. 01	4, 413	-----	572	4, 985	165	5. 49
Lewis.....	-----	-----	12, 200	-----	-----	12, 200	13, 000	1. 07	17	-----	3	20	206	2. 96
Logan.....	13, 058, 228	-----	93, 939	6, 480	-----	13, 158, 647	12, 431, 000	. 94	8, 129	-----	1, 455	9, 584	174	7. 89
McDowell.....	13, 028, 989	3	161, 689	106, 493	-----	13, 297, 174	14, 651, 000	1. 10	12, 906	-----	3, 072	15, 978	135	6. 15
Marion.....	4, 711, 566	-----	132, 513	29, 451	-----	4, 873, 530	4, 540, 000	. 93	3, 419	-----	493	3, 912	179	6. 91
Marshall.....	552, 499	-----	215, 647	2, 506	-----	770, 652	809, 000	1. 05	789	-----	109	898	185	4. 64
Mason.....	6, 285	3, 063	38, 099	2, 095	-----	49, 542	50, 000	1. 01	80	-----	27	107	180	2. 57
Mercer.....	3, 072, 975	-----	6, 197	6, 197	2, 876	3, 120, 546	3, 342, 000	1. 07	2, 607	-----	712	3, 319	169	5. 56
Mineral.....	202, 702	12, 995	13, 402	1, 626	-----	230, 725	299, 000	1. 30	422	-----	62	484	159	2. 99
Mingo.....	2, 916, 659	-----	23, 506	2, 250	-----	2, 942, 415	2, 815, 000	. 96	2, 699	-----	611	3, 310	139	6. 41
Monongalia.....	4, 787, 162	570	54, 790	90	-----	4, 842, 612	3, 475, 000	. 72	2, 949	-----	494	3, 443	189	7. 46
Nicholas.....	61, 109	-----	2, 675	4, 700	-----	68, 484	163, 000	2. 23	130	-----	40	170	119	3. 37
Ohio.....	1, 666, 048	-----	162, 215	6, 951	-----	1, 836, 214	1, 693, 000	. 92	1, 439	-----	129	1, 568	256	4. 57
Preston.....	631, 607	855	9, 544	8, 675	27, 714	678, 395	703, 000	1. 04	1, 340	-----	206	1, 546	115	3. 81
Putnam.....	304, 291	-----	7, 609	-----	-----	311, 900	299, 000	. 96	476	-----	119	595	119	4. 40
Raleigh.....	11, 675, 710	-----	100, 794	82, 173	-----	11, 858, 677	13, 998, 000	1. 18	9, 724	-----	1, 574	11, 298	192	5. 49
Randolph.....	257, 936	1, 000	32, 061	10, 877	-----	301, 944	337, 000	1. 12	375	-----	91	466	136	4. 75
Taylor.....	1, 082, 024	302	13, 719	200	-----	1, 096, 245	866, 000	. 79	816	-----	96	912	202	5. 96
Upshur.....	118, 908	600	8, 367	4, 235	-----	131, 730	109, 000	. 83	169	-----	39	208	135	4. 68
Webster.....	535, 249	-----	29, 350	3, 263	-----	567, 862	718, 000	1. 26	586	-----	84	670	172	4. 92
Wyoming.....	1, 478, 285	436	16, 484	27, 742	-----	1, 522, 947	1, 828, 000	1. 20	1, 313	-----	253	1, 566	169	5. 76

73501-34-31

Other counties (Braxton, Lincoln, and Wayne).....	116,044	241	139	550	-----	116,974	111,000	.95	86	-----	19	105	186	5.99	
Total 1932.....	82,952,472	32,086	2,141,023	399,543	83,611	85,608,735	90,786,000	1.06	72,679	-----	13,086	85,765	168	5.93	
Total 1931.....	98,316,214	2,546,451		420,316	190,191	101,473,172	132,762,000	1.31	83,572	-----	7	14,208	97,787	176	5.88

WYOMING

Big Horn and Park.....		700	2,863	350	-----	3,913	\$13,000	\$3.32	8	-----	3	11	195	1.82
Campbell and Converse.....	81,393	8,658	3,465	8,056	-----	101,572	109,000	1.07	8	10	19	37	252	¹⁵ 10.90
Carbon.....	386,900	5,621	13,416	16,989	-----	422,926	1,030,000	2.44	223		87	310	190	7.18
Fremont.....	17,988	4,331	1,510	3,922	-----	27,751	69,000	2.49	29		9	38	86	¹⁶ 8.49
Hot Springs.....	160,206	6,928	8,749	25,901	-----	201,784	568,000	2.81	406		73	479	108	3.90
Johnson.....	126	1,752	8,109	559	-----	10,546	17,000	1.61	14		3	17	118	5.26
Lincoln.....	417,408		5,066	25,628	-----	448,102	1,059,000	2.36	445		109	554	149	5.43
Sheridan.....	426,153	3,000	55,457	2,483	-----	487,093	748,000	1.54	302		80	382	134	¹⁸ 9.53
Sweetwater.....	2,362,031	2,672	24,615	65,811	-----	2,455,132	5,670,000	2.31	1,915		404	2,319	156	6.80
Other counties (Teton and Uinta).....	5,893	503	5,738	10	-----	12,144	34,000	2.80	20		6	26	214	2.18
Total 1932.....	3,858,098	34,165	128,991	149,709	-----	4,170,963	9,317,000	2.23	3,370	10	793	4,173	150	6.65
Total 1931.....	4,690,401	145,286		157,999	-----	4,993,686	11,996,000	2.40	3,923	25	811	4,759	154	6.81

¹⁸ Much of the output is obtained from strip pits or by the use of loading machines, in which types of operations the production per man per day is large.

COAL PRODUCED AND CONSUMED IN ALASKA

TABLE 37.—Coal produced and consumed in Alaska, 1928-32

Year	Produced in Alaska, chiefly subbituminous and lignite ¹		Imported from States, chiefly bituminous coal from Washington ² (net tons)	Imported from foreign countries, chiefly bituminous coal from British Columbia ² (net tons)	Total coal consumed (net tons)
	Net tons	Value			
1928	126,100	\$662,000	39,408	32,518	198,026
1929	100,600	528,000	36,693	27,073	164,366
1930	120,100	631,000	37,128	23,892	181,120
1931	105,900	556,000	30,772	17,796	154,468
1932	102,700	514,000	28,422	12,463	143,585

¹ Compiled by the Alaska branch of the U. S. Geological Survey.

² Compiled from records of the Bureau of Foreign and Domestic Commerce.

DETAILED STATISTICS OF ANTHRACITE AND SEMIANTHRACITE OUTSIDE OF PENNSYLVANIA

Table 38 analyzes the production of anthracite and semianthracite from fields outside of Pennsylvania. Although statistics for these coals are included with those for bituminous coal in the primary tables of this report they are shown here separately. For a detailed analysis of the hard-coal industry outside of Pennsylvania, see Coal in 1930, pages 721 to 726.

TABLE 38.—Production, value, men employed, days worked, and output per man per day at the principal hard-coal mines outside of Pennsylvania in 1932

	Virginia	Arkansas, Colorado, and New Mexico	Total
Production:			
Loaded at mines for shipment.....net tons.....	187,676	241,303	428,979
Trucked to distant points.....do.....		450	450
Sold to local trade, used by employees, and nearby trucking.do.....	3,366	12,807	16,673
Used at mines for power and heat.....do.....	2,357	5,569	7,926
Total production.....do.....	193,399	260,129	454,028
Value:			
Total.....	\$617,000	\$960,000	\$1,577,000
Average per ton.....	\$3.18	\$3.69	\$3.47
Number of employees:			
Underground.....	503	1,439	1,942
Surface.....	146	266	412
Total employees.....	649	1,705	2,354
Average number of days worked.....			
Average number of days worked.....	154	75	97
Average production per man per day.....net tons.....	1.94	2.04	1.99

Part 2.—PENNSYLVANIA ANTHRACITE

(DETAILED STATISTICS)

By W. H. YOUNG, H. L. BENNETT, AND F. G. TRYON

The essential facts of the statistical record in Pennsylvania anthracite in 1932 are presented in the following tables. The reader is referred to the chapter on Coal in the Minerals Yearbook, 1932-33, pages 407 to 418, for a discussion of the developments in the anthracite industry in 1932.

STATISTICAL SUMMARY

TABLE 1A.—*Salient statistics of the Pennsylvania anthracite industry, 1928-32*

	1928	1929	1930		1931	1932
Production:						
Loaded at mines for shipment:						
Breakers.....net tons.....	64, 551, 767	64, 203, 900	59, 839, 838	51, 264, 291	42, 994, 291	
Washeries.....do.....	1, 394, 615	766, 288	994, 199	1, 295, 190	648, 086	
Dredges.....do.....	541, 219	324, 390	368, 020	199, 288	252, 346	
Sold to local trade and used by employees.....net tons.....	3, 184, 825	3, 233, 024	3, 144, 434	2, 901, 117	2, 810, 337	
Used at collieries for power and heat net tons.....do.....	5, 675, 643	5, 300, 593	5, 038, 346	3, 985, 786	3, 150, 161	
Total production.....do.....	75, 348, 069	73, 828, 195	69, 384, 837	59, 645, 652	49, 855, 221	
Value at breaker, washery, or dredge.....	\$393, 638, 000	\$385, 643, 000	\$354, 574, 000	\$296, 355, 000	\$222, 375, 000	
Average sales realization per net ton on breaker shipments:			1929¹ basis	Actual² reports		
Stove.....do.....	\$7.79	\$7.79	\$7.73	\$7.68	\$7.37	\$6.53
Pea.....do.....	\$4.46	\$4.16	\$4.13	\$4.18	\$4.76	\$4.55
Total domestic.....do.....	\$7.22	\$7.14	\$7.08	\$7.05	\$6.87	\$6.09
Buckwheat no. 1.....do.....	\$2.46	\$2.35	\$2.46	\$2.49	\$2.79	\$2.83
Buckwheat no. 2.....do.....	\$1.65	\$1.58	\$1.51	\$1.51	\$1.52	\$1.52
Total steam.....do.....	\$1.89	\$1.82	\$1.85	\$1.87	\$2.00	\$1.98
All sizes.....do.....	\$5.70	\$5.63	\$5.54	\$5.52	\$5.35	\$4.74
Percentage by sizes in total breaker shipments:						
Broken.....percent.....	0.7	0.6	0.5	0.3	0.3	0.3
Egg.....do.....	11.7	11.4	10.5	9.6	9.1	9.1
Stove.....do.....	25.6	25.8	25.7	23.6	23.7	23.7
Chestnut.....do.....	25.4	25.6	25.7	25.0	24.3	24.3
Pea.....do.....	7.8	8.1	8.2	10.3	9.9	9.9
Steam sizes.....do.....	28.8	28.5	29.4	31.2	32.7	32.7
Exports.....net tons.....	3, 336, 000	3, 406, 000	2, 552, 000	1, 778, 000	1, 303, 000	
Imports.....do.....	385, 000	487, 000	675, 000	638, 000	607, 000	
Consumption (calculated).....do.....	73, 651, 000	71, 457, 000	67, 627, 000	58, 408, 000	50, 500, 000	
Capacity in operation (calculated).....do.....	105, 000, 000	100, 000, 000	101, 000, 000	100, 000, 000	94, 000, 000	
Average number of days worked.....do.....	217	225	208	181	162	
Man-days lost on account of strikes and lockouts.....do.....	400, 682	272, 511	112, 398	570, 664	289, 523	
Number of men on strike during year.....do.....	36, 128	39, 777	18, 202	65, 907	34, 259	
Average number of men employed.....do.....	160, 681	151, 501	150, 804	139, 431	121, 243	
Output per man per day.....net tons.....	2.17	2.17	2.21	2.37	2.54	
Output per man per year.....do.....	469	487	460	428	411	
Quantity mined by cutting machines net tons.....do.....	1, 289, 809	1, 159, 910	1, 410, 123	1, 587, 265	1, 674, 223	
Quantity mined by stripping.....do.....	2, 422, 924	1, 911, 766	2, 536, 288	3, 813, 237	3, 980, 973	
Distribution:						
Total receipts in New England ³ net tons.....do.....	9, 376, 000	9, 039, 000	8, 387, 000	7, 064, 000	5, 639, 000	
Exports to Canada.....do.....	3, 296, 000	3, 376, 000	2, 532, 000	1, 772, 000	1, 301, 000	
Loaded into vessels at Lake Erie ⁴ net tons.....do.....	1, 421, 000	1, 321, 000	1, 232, 000	761, 000	294, 000	
Receipts at Duluth-Superior ⁵ do.....do.....	652, 000	401, 000	461, 000	300, 000	66, 000	

¹ Includes 122,894 tons of coal stored at collieries in 1931 and 33,060 tons in 1932.

² The figures under the heading "1929 basis" are so calculated as to be exactly comparable with 1929; those under the heading "Actual reports" are affected by a change in status of a company that formerly sold its output direct and in 1930 was merged with a larger company selling through a separately incorporated sales company.

³ From records of the Massachusetts Department of Labor and Industries, division on the necessities of life.

⁴ From records of the Ore and Coal Exchange.

⁵ From records of the United States Engineer Office, Duluth, Minn.

TABLE 2A.—Statistical summary of monthly developments in Pennsylvania anthracite industry in 1932

[All tonnage figures represent thousand net tons]

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total 1932	Total 1931
Production, including mine fuel, local sales, and dredge coal:														
Monthly total.....	3,937	4,061	4,838	5,686	3,311	2,576	3,052	3,500	4,151	5,287	4,315	5,141	49,855	59,646
Average per working day.....	157.5	165.8	179.2	227.4	132.4	99.1	122.1	129.6	166.0	211.5	179.8	197.7	163.7	196.5
Shipments, breakers and washeries only: ¹ Monthly total, all sizes.....	3,370	3,575	4,313	5,014	2,901	2,227	2,778	3,050	3,664	4,758	3,881	4,512	44,043	53,624
Distribution:														
Lake loadings.....				10	56	35	26	46	67	44	10		294	761
Receipts at Duluth-Superior.....				25	7	28	10			21			66	300
Shipments from lake docks.....	41	42	37	25	19	22	42	51	67	65	56	45	512	720
New England receipts:														
By tide.....	112	109	90	188	206	114	127	139	133	151	161	129	1,659	1,939
By rail.....	330	326	390	398	280	190	251	294	349	425	350	397	3,980	5,125
Exports.....	107	96	152	118	103	69	112	92	126	125	103	100	1,303	1,778
Imports.....	81	71	37	59	97	44	30	22	42	43	49	32	607	638
Stocks at end of period shown:														
Producers' stocks.....	2,741	2,265	1,794	1,733	1,906	2,076	2,081	2,250	2,263	2,261	2,164	1,732	1,732	3,073
Retail stocks, representative dealers.....	1,193	609	272	647	(²)	675	757	(²)	805	832	(²)	636	636	1,150
Upper lake docks.....	595	553	519	504	506	546	519	508	491	480	434	389	389	632
Prices at mines, average per net ton: ³														
Company stove.....	\$8.00	\$7.75	\$6.90	\$6.50	\$6.65	\$6.65	\$6.65	\$6.85	\$7.05	\$7.25	\$7.25	\$7.25	\$7.06	\$7.79
Independent stove.....	7.60	7.60	7.38	6.50	6.40	6.40	6.40	6.40	6.60	7.25	7.25	7.25	6.93	7.62
Company buckwheat no. 1.....	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.11
Independent buckwheat no. 1.....	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.23
Retail prices (average per net ton, 25 cities): ⁴														
Stove.....	15.00	14.98	14.54	13.62	13.30	13.36	13.37	13.50	13.74	13.79	13.83	13.87	13.91	14.80
Chestnut.....	14.97	14.95	14.45	13.46	13.11	13.16	13.16	13.28	13.52	13.58	13.60	13.65	13.74	14.72
Employment at collieries: Index of men on pay rolls at 159 mines ⁵	76.2	71.2	73.7	70.1	66.9	53.0	44.5	49.2	55.8	63.9	62.7	62.3	62.5	80.5

¹ As reported by the Anthracite Bureau of Information.² No data.³ Quoted by trade journals in New York market.⁴ Bureau of Labor Statistics, white ash, sidewalk delivery.⁵ Bureau of Labor Statistics. Index number—1929 average=100.0.

COMPETITION FROM OTHER FUELS

TABLE 3A.—Total supplies of fuels commonly used for domestic purposes in the United States, 1924 and 1929-32

[Wherever available the figures represent the quantity actually consumed for domestic heating or for heating offices, apartments, hotels, schools, hospitals, etc. Where such figures are not available but where the fuel is known to be used chiefly for domestic purposes, the total production (or imports) is shown to indicate the trend of growth]

	1924	1929	1930	1931	1932
<i>Solid fuels (net tons)</i>					
Pennsylvania anthracite production:					
Shipments of domestic sizes.....	56, 576, 296	46, 141, 575	42, 508, 088	35, 437, 946	29, 096, 962
Shipments of buckwheat no. 1.....	9, 510, 508	8, 597, 053	8, 670, 032	7, 956, 978	6, 735, 313
Shipments of smaller steam sizes.....	11, 160, 695	10, 555, 951	10, 123, 937	9, 240, 931	8, 029, 388
Local sales.....	3, 043, 939	3, 233, 023	3, 144, 434	2, 901, 117	2, 810, 337
Total commercial production.....	80, 291, 438	68, 527, 602	64, 346, 491	55, 536, 972	46, 672, 000
Anthracite exported.....	4, 017, 785	3, 406, 369	2, 551, 659	1, 778, 308	1, 303, 355
Anthracite imported, chiefly from United Kingdom and Russia.....	117, 951	487, 172	674, 812	637, 951	607, 097
Fuel briquets produced.....	580, 470	1, 212, 415	1, 028, 865	698, 316	470, 604
Fuel briquets imported.....	38	89, 458	73, 418	60, 950	80, 288
Byproduct coke sold for domestic use.....	2, 812, 771	7, 376, 320	7, 886, 432	8, 376, 652	9, 422, 343
Beehive coke sold for domestic use.....	139, 886	134, 703	141, 391	118, 665	207, 857
Coke imported.....	82, 833	119, 724	132, 674	103, 563	117, 275
Gas-house coke sold.....	¹ 1, 400, 000	1, 400, 000	¹ 1, 300, 000	1, 273, 000	¹ 1, 250, 000
Petroleum coke produced ²	761, 100	1, 820, 600	1, 940, 000	2, 032, 000	1, 789, 000
Anthracite and semianthracite produced outside of Pennsylvania.....	704, 513	842, 313	708, 221	507, 140	454, 000
Bituminous coal for domestic use.....	(³)	(³)	(³)	(³)	(³)
<i>Oil (barrels)⁴</i>					
Oil used for heating houses.....	² 5, 021, 000	19, 581, 000	25, 771, 000	24, 659, 000	(⁵)
Oil used for heating offices, hotels, apartments, schools, hospitals, and buildings other than houses.....	(⁶)	17, 820, 000	17, 508, 000	15, 731, 000	(⁶)
<i>Gas (million cubic feet)</i>					
Natural gas consumed for domestic use ⁷	285, 152	359, 853	376, 407	380, 897	385, 887
Manufactured gas sold for domestic purposes.....	(⁸)	⁸ 285, 552	(⁸)	⁸ 260, 520	(⁸)

¹ A considerable part of the buckwheat no. 1 is used for domestic purposes.

² Partly estimated.

³ How much petroleum coke was used for house fuel prior to 1928 is not known. For that year 235,000 tons were reported to have been consumed for domestic heating, according to E. B. Swanson in Economic Paper 9, Bureau of Mines.

⁴ Between 56,000,000 and 77,000,000 tons a year.

⁵ Based on surveys by E. B. Swanson, Bureau of Mines.

⁶ Data not available.

⁷ Includes heating of apartments and commercial buildings.

⁸ From Census of Manufactures.

ANTHRACITE USED IN MANUFACTURING

The consumption of anthracite by manufacturing industries, by counties, in 1929, is shown in figure 6. The map is based upon a special analysis of the United States Bureau of Census entitled "Consumption of Fuel and Electric Energy in Manufacturing Industries."

PRODUCTION BY WEEKS AND MONTHS

The following tables summarize the statistics of the weekly and monthly production of anthracite first published in the Bureau of Mines weekly coal reports. The weekly output is estimated from records of cars of anthracite loaded by the nine railroads that serve the region. In table 4A the original weekly estimates have been adjusted to the annual total ascertained by direct canvass of the operators at the end of the year.

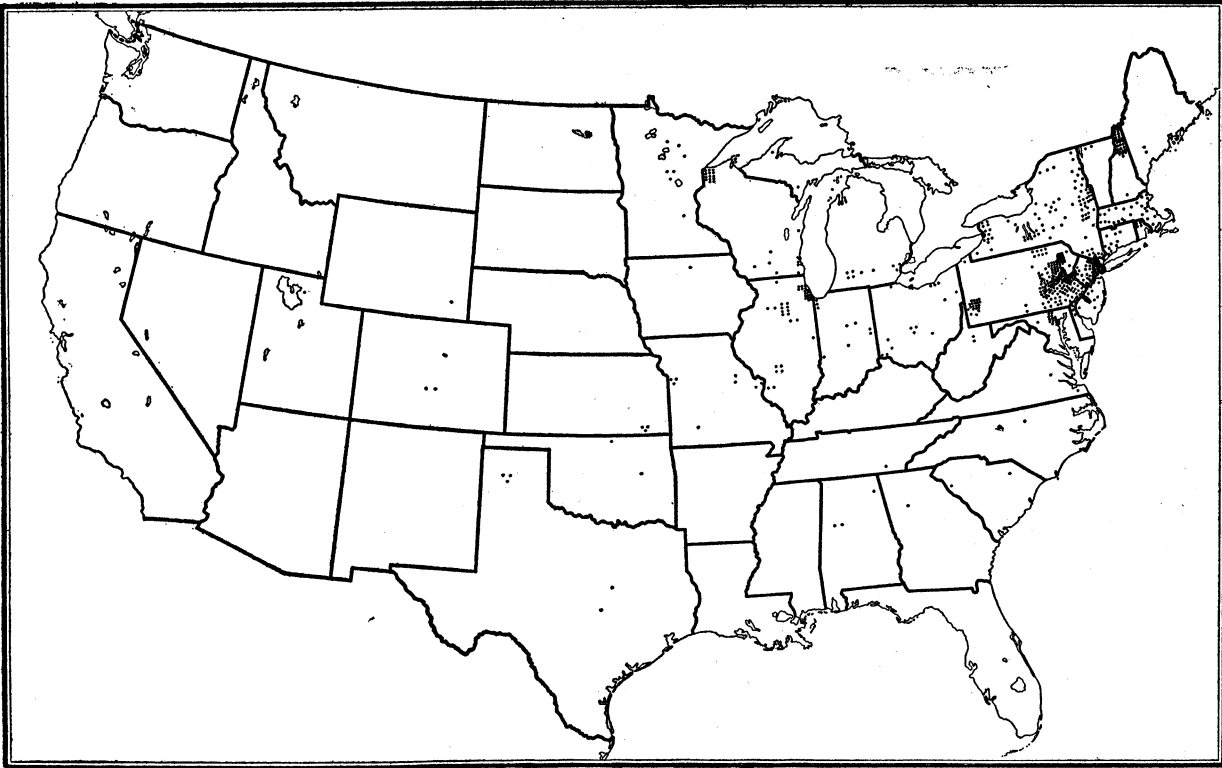


FIGURE 6.—Anthracite consumed in each county in manufacturing industries in 1929. Each dot represents 10,000 tons.

TABLE 4A.—Estimated weekly production of anthracite in 1932, in net tons

Week ended—	Weekly production	Number of working days	Daily average	Week ended—	Weekly production	Number of working days	Daily average
Jan. 2.....	1 179,000	1 1	1 194,800	July 16.....	603,000	6	100,500
Jan. 9.....	1,143,000	6	190,500	July 23.....	714,000	6	119,000
Jan. 16.....	971,000	6	161,800	July 30.....	1,059,000	6	176,500
Jan. 23.....	827,000	6	137,800	Aug. 6.....	767,000	6	127,800
Jan. 30.....	816,000	6	136,000	Aug. 13.....	673,000	6	112,200
Feb. 6.....	1,074,000	6	179,000	Aug. 20.....	628,000	6	104,700
Feb. 13.....	875,000	6	145,800	Aug. 27.....	812,000	6	135,300
Feb. 20.....	883,000	6	147,200	Sept. 3.....	1,080,000	6	180,000
Feb. 27.....	1,054,000	5.5	191,600	Sept. 10.....	640,000	5	128,000
Mar. 5.....	799,000	6	133,200	Sept. 17.....	893,000	6	148,800
Mar. 12.....	1,182,000	6	197,000	Sept. 24.....	990,000	6	165,000
Mar. 19.....	1,273,000	6	212,200	Oct. 1.....	1,407,000	6	234,500
Mar. 26.....	1,071,000	6	178,500	Oct. 8.....	1,201,000	6	200,200
Apr. 2.....	881,000	5	176,200	Oct. 15.....	1,268,000	6	211,300
Apr. 9.....	1,306,000	6	217,700	Oct. 22.....	1,381,000	6	230,200
Apr. 16.....	1,335,000	6	222,600	Oct. 29.....	1,011,000	5	202,200
Apr. 23.....	1,421,000	6	236,800	Nov. 5.....	904,000	6	150,700
Apr. 30.....	1,430,000	6	238,300	Nov. 12.....	841,000	5	168,200
May 7.....	978,000	6	163,000	Nov. 19.....	1,091,000	6	181,800
May 14.....	773,000	6	128,800	Nov. 26.....	936,000	5	197,200
May 21.....	705,000	6	117,500	Dec. 3.....	1,259,000	6	209,800
May 28.....	736,000	6	122,700	Dec. 10.....	945,000	6	157,500
June 4.....	528,000	5	105,600	Dec. 17.....	1,250,000	6	208,300
June 11.....	565,000	6	94,200	Dec. 24.....	1,467,000	6	244,500
June 18.....	579,000	6	96,500	Dec. 31.....	901,000	5	180,200
June 25.....	608,000	6	101,300				
July 2.....	567,000	6	94,500				
July 9.....	525,000	5	105,000				
					49,855,000	304.5	163,700

¹ Figures represent the output and number of working days in that part of the week included in the calendar year 1932. Figures of total production for the week of Jan. 2, 1932, are 974,000 tons.

² Average daily production for the entire week and not for the working days that fell in the calendar year 1932.

TABLE 5A.—Estimated monthly production of anthracite, 1929-32 ¹

[Production figures represent thousands of net tons]

Month	1929			1930			1931			1932		
	Month-ly production	Number of working days	Daily average	Month-ly production	Number of working days	Daily average	Month-ly production	Number of working days	Daily average	Month-ly production	Number of working days	Daily average
January....	7,068	26	272	6,996	26	269	6,183	26	238	3,937	25	157
February....	6,425	23.5	273	6,190	23.5	260	5,400	23.5	230	4,061	24.5	166
March.....	4,859	26	187	4,524	26	174	4,754	26	183	4,838	27	179
April.....	6,205	25	248	4,887	25	196	5,709	25	228	5,686	25	227
May.....	6,077	26	234	5,911	26	227	5,013	25	201	3,311	25	132
June.....	4,883	25	195	5,152	25	206	4,552	26	175	2,576	26	99
July.....	4,810	26	185	5,624	26	216	3,960	26	152	3,052	25	122
August.....	5,735	27	212	6,153	26	237	4,324	26	166	3,500	27	130
September..	6,543	24	273	5,261	25	210	4,362	25	175	4,151	25	166
October....	8,026	26	309	7,531	26	301	6,561	26	252	5,287	25	212
November..	5,820	24	243	5,176	23	199	4,149	23	180	4,315	24	180
December..	7,377	25	295	6,050	26	233	4,679	26	180	5,141	26	198
	73,828	303.5	243	69,385	303.5	229	59,646	303.5	197	49,855	304.5	164

¹ Production is estimated from weekly car loadings as reported by the American Railway Association and includes mine fuel, coal sold locally, dredge coal, and the output of the Bernice Basin in Sullivan County. In computing the average rates per working day, New Year's, Eight-Hour Day (Apr. 1), Memorial Day, Independence Day, Labor Day, Mitchell Day (Oct. 29), Thanksgiving Day, Christmas, and, since the war, Armistice Day have been counted as holidays. Beginning with 1927, Washington's Birthday is counted as a half holiday. No allowance, however, has been made for church holy days, which are observed by many of the miners. Monthly statistics from 1905 to 1922 will be found in Coal in 1925, pp. 427-428, and from 1923 to 1928 in Coal in 1928, p. 581.

PRODUCTION BY REGIONS

TABLE 6A.—Anthracite produced, by regions, 1931 and 1932

Region	Shipments		Local sales		Colliery fuel		Total	
	Net tons	Value ¹	Net tons	Value	Net tons	Value	Net tons	Value ¹
1931								
Lehigh:								
Breaker product...	7,860,415	\$39,749,202	272,598	\$1,430,083	536,775	\$863,023	8,669,788	\$42,042,308
Washery product...	(?)		(?)	(?)	(?)	(?)	(?)	
Dredge product...	33,014						33,014	
	7,893,429	39,749,202	272,598	1,430,083	536,775	863,023	8,702,802	42,042,308
Schuylkill:								
Breaker product...	15,285,622	74,188,700	768,995	3,668,020	1,030,687	1,585,312	17,200,056	80,130,618
Washery product...	963,233	1,979,538	11,599	32,694	6,137	9,400	980,999	2,021,632
Dredge product...	166,254	98,326	259,426	242,935	56	100	425,736	341,361
	16,415,109	76,266,564	1,040,020	3,943,649	1,036,880	1,594,812	18,606,761	82,493,611
Wyoming:								
Breaker product...	27,960,343	159,282,808	1,559,553	7,377,716	2,347,877	3,557,221	31,875,915	170,277,917
Washery product...	331,957	1,062,124	19,979	96,809	50,834	77,151	402,770	1,286,084
	28,292,300	160,344,932	1,579,532	7,474,525	2,398,711	3,634,372	32,278,685	171,514,001
Total breaker product (including Sullivan County).....	51,141,397	273,411,761	2,610,113	12,533,139	3,928,759	6,023,530	57,803,163	292,717,188
Total washery product.....	1,295,190	3,041,662	31,578	129,503	56,971	86,551	1,383,739	3,257,716
Total dredge product.....	199,268	136,647	259,426	242,935	56	100	458,750	379,682
Grand total.....	52,635,855	276,590,070	2,901,117	12,905,577	3,985,786	6,110,181	59,645,652	296,354,586
1932								
Lehigh:								
Breaker product...	6,944,868	31,109,280	275,250	1,328,543	459,299	697,647	7,679,417	33,135,470
Dredge product...	42,091	49,584					42,091	49,584
	6,986,959	31,158,864	275,250	1,328,543	459,299	697,647	7,721,508	33,185,054
Schuylkill:								
Breaker product...	12,270,801	52,717,646	833,667	3,909,792	788,630	1,161,184	13,893,098	57,788,622
Washery product...	459,993	795,404	7,560	18,728	2,700	3,947	470,253	818,079
Dredge product...	210,255	125,045	217,636	258,473	33	42	427,924	383,560
	12,941,049	53,638,095	1,058,863	4,186,993	791,363	1,165,173	14,791,275	58,990,261
Wyoming:								
Breaker product...	23,710,697	119,797,337	1,448,214	6,745,268	1,780,082	2,439,000	26,938,993	128,981,605
Washery product...	188,093	642,919	7,348	35,146	110,184	156,446	305,625	834,511
Dredge product...			9,735	12,355	300	300	10,035	12,655
	23,898,790	120,440,256	1,465,297	6,792,769	1,890,566	2,595,746	27,254,653	129,828,771
Total breaker product (including Sullivan County).....	42,994,291	203,927,747	2,568,058	12,042,229	3,036,944	4,306,764	48,599,293	220,276,740
Total washery product.....	648,086	1,438,323	14,908	53,874	112,884	160,393	775,878	1,652,590
Total dredge product.....	252,346	174,629	227,371	270,828	333	342	480,050	445,799
Grand total.....	43,894,723	205,540,699	2,810,337	12,366,931	3,150,161	4,467,499	49,855,221	222,375,129

¹ Value given for shipments is value at which coal left possession of producing company f.o.b. mines and does not include margins of separately incorporated sales companies.

² A small amount of washery product is included with breaker product to avoid disclosing individual operations.

³ Includes 122,894 tons of coal, with a value of \$748,758, stored at collieries.

⁴ Includes 33,060 tons of coal, with a value of \$99,821, stored at collieries.

PRODUCTION BY FIELDS AND COUNTIES

The classification by trade regions—Lehigh, Schuylkill, and Wyoming—is most commonly used by the trade. It is paralleled by the organization of the United Mine Workers, in which district 1 corresponds to the Wyoming trade region, district 7 to the Lehigh region, and district 9 to the Schuylkill region. In studies of costs of production and reserves, however, a classification adopted by geologists is more useful because it corresponds more closely to the natural conditions that largely govern mining costs. The geologic classification recognizes four fields. The Northern field is identical with the Wyoming region. That part of the Southern field lying east of Tamaqua, known as the Panther Creek Valley, and the Eastern Middle field make up the Lehigh region. That part of the Southern field west of Tamaqua and the Western Middle field compose the Schuylkill region. The Bernice Basin in Sullivan County is sometimes grouped with the Northern field.

Table 7A shows the production by fields. For those interested in production by political units figures by counties are given in table 8A.

TABLE 7A.—Anthracite produced, by fields, 1928–32, in net tons

[The figures of breaker product include a certain quantity of culm-bank coal, which in 1932 amounted to 784,000 tons. Data for 1913–18 will be found in Coal in 1925, p. 517, and for 1919–27 in Coal in 1930, p. 747]

	1928	1929	1930	1931	1932
Northern field:¹					
Breakers.....	41,185,000	41,679,000	37,756,000	31,933,000	27,026,778
Washeries.....	521,000	412,000	466,000	403,000	305,625
Dredges.....					10,035
Total.....	41,706,000	42,091,000	38,222,000	32,336,000	27,342,438
Eastern Middle field:					
Breakers.....	6,526,000	6,780,000	² 6,508,000	² 6,075,000	5,417,755
Washeries.....			(²)	(²)	
Total.....	6,526,000	6,780,000	6,508,000	6,075,000	5,417,755
Western Middle field:					
Breakers.....	14,457,000	13,575,000	13,918,000	11,912,000	9,153,447
Washeries.....	729,060	270,000	522,000	916,000	441,243
Dredges.....	404,000	224,000	265,000	161,000	190,067
Total.....	15,590,000	14,069,000	14,705,000	12,989,000	9,784,757
Southern field:					
Breakers.....	10,746,000	10,268,000	9,471,000	7,883,000	7,001,313
Washeries.....	241,000	127,000	100,000	65,000	29,010
Dredges.....	539,000	493,000	379,000	298,000	279,948
Total.....	11,526,000	10,888,000	9,950,000	8,246,000	7,310,271
Grand total.....	75,348,000	73,828,000	69,385,000	59,646,000	49,855,221

¹ Includes Sullivan County, which in 1932 contributed 88,000 tons of breaker product.

² A small amount of washery product is included with the breaker product.

TABLE 8A.—Anthracite produced, by counties, in 1932

County	Shipments		Local sales	
	Net tons	Value ¹	Net tons	Value
Carbon.....	1,550,711	\$6,421,715	52,326	\$263,383
Columbia.....	173,915	834,438	35,741	48,916
Dauphin.....	574,076	2,540,230	151,964	352,678
Lackawanna.....	10,148,914	50,708,296	679,724	3,355,247
Luzerne.....	17,293,718	85,946,027	950,085	4,215,451
Northumberland.....	3,976,115	15,440,090	208,605	716,905
Schuylkill.....	9,700,398	41,491,411	672,612	3,259,929
Sullivan.....	67,925	303,484	10,927	58,626
Susquehanna and Wayne.....	360,806	1,802,397	2,602	13,763
Berks, Cumberland, Lebanon, Lehigh, Montour, Northampton, and York ²	48,145	52,611	45,751	82,033
	43,894,723	205,540,699	2,810,337	12,366,931

County	Colliery fuel		Total		Men employed
	Net tons	Value	Net tons	Value ¹	
Carbon.....	59,048	\$129,007	1,662,085	\$6,814,105	3,858
Columbia.....	5,250	6,862	214,906	890,216	423
Dauphin.....	73,770	108,420	799,810	3,001,328	1,829
Lackawanna.....	740,469	1,025,060	11,569,107	55,088,603	29,998
Luzerne.....	1,455,630	1,979,790	19,699,433	92,141,268	51,590
Northumberland.....	142,688	165,054	4,327,408	16,322,049	8,329
Schuylkill.....	647,678	1,020,651	11,020,688	45,771,991	23,215
Sullivan.....	8,933	8,933	87,785	371,043	640
Susquehanna and Wayne.....	16,682	23,700	380,090	1,839,860	1,305
Berks, Cumberland, Lebanon, Lehigh, Montour, Northampton, and York ²	13	22	93,909	134,666	51
	3,150,161	4,467,499	49,855,221	222,375,129	121,243

¹ Value given for shipments is value at which coal left possession of producing company f.o.b. mines and does not include margins of separately incorporated selling companies.

² Counties producing dredge coal only.

FRESH-MINED AND CULM-BANK COAL, BREAKER AND WASHERY PRODUCT

Anthracite is now produced from three sources—from mines, from old culm banks, and from the rivers that drain the anthracite region. As all contribute to the country's supply, it is important to consider them all to ascertain the total production. A full explanation of the method used in reconciling figures on production from the three sources is given in Coal in 1926, pages 562 and 563. No difficulty is experienced in separating the figures of production by dredges. It is difficult to draw a sharp line that can be maintained throughout the statistics of the industry, however, between the fresh-mined and the culm-bank coal.

As the best solution of this problem the individual breaker, washery, or dredge is taken as the unit in compiling the statistics. Producing companies are asked to supply separate statements for each breaker, washery, or dredge, which are totaled to form the primary tables of this report and show the total quantity of breaker product, washery product, and dredge product, with related figures of value, number of employees, and time worked.

The figures on breaker and washery product, however, do not exactly equal those for fresh-mined and culm-bank coal because of the practice sometimes adopted of putting culm-bank coal through a breaker, either directly from the bank or after preliminary treatment in a washery. To obtain accurate statistics of culm-bank coal each company is now asked to recapitulate its total production of fresh-mined and culm-bank coal. The results are shown in tables 9A and 10A.

TABLE 9A.—Comparison of anthracite production, 1931 and 1932, classified as fresh-mined, culm-bank, and river coal and as breaker, washery, and dredge product, in net tons

[Data for 1923-30 will be found in Coal in 1930, p. 750. See Coal in 1923, pp. 697-700, for interpretation of the records of fresh-mined and washery coal before 1923]

	1931			1932		
	Classified by source of coal	Classified by type of preparation plant	Difference	Classified by source of coal	Classified by type of preparation plant	Difference
Fresh-mined coal.....	57, 272, 739		} +530, 424	47, 815, 133		} +784, 160
Breaker product.....		57, 803, 163			48, 599, 293	
Culm-bank coal.....	¹ 1,914,163		} -530, 424	¹ 1,560,038		} -784, 160
Washery product.....		1, 883, 739			775, 878	
River coal.....	458, 750			480, 050		
Dredge product.....		458, 750		480, 050		
Total.....	59, 645, 652	59, 645, 652		49, 855, 221	49, 855, 221	

¹ Includes 530,424 tons put through the breakers in 1931 and 784,160 tons in 1932.

TABLE 10A.—Culm-bank coal put through breakers, by fields, 1928-32, in net tons

Year	Northern ¹	Eastern Middle	Western Middle	Southern	Total
1928.....	86, 000	97, 000	313, 000	270, 000	766, 000
1929.....	73, 000	15, 000	116, 000	223, 000	427, 000
1930.....	75, 000	7, 000	58, 000	52, 000	192, 000
1931.....	96, 000	70, 000	57, 000	307, 000	530, 000
1932.....	159, 000	82, 000	328, 000	215, 000	784, 000

¹Includes Sullivan County.

SHIPMENTS BY REGIONS AND SIZES

TABLE 11A.—Anthracite shipped, by regions and sizes, in 1932¹

[Figures of shipments from breakers include a considerable tonnage of culm-bank coal handled in the breakers]

Size	Breaker shipments				Washery shipments	Dredge shipments	Grand total
	Lehigh region	Schuyl-kill region	Wyoming region	Total (including Sullivan County)			
<i>Net tons</i>							
Lump ² and broken.....	11, 637	45, 039	90, 967	147, 817	-----	-----	147, 817
Egg.....	448, 709	887, 695	2, 544, 579	3, 886, 273	9	-----	3, 886, 287
Stove.....	1, 563, 376	2, 512, 994	6, 092, 637	10, 182, 869	15, 325	-----	10, 198, 194
Chestnut.....	1, 565, 561	2, 758, 584	6, 108, 197	10, 450, 459	130, 095	-----	10, 580, 554
Pea.....	809, 526	1, 151, 009	2, 295, 124	4, 264, 990	19, 120	-----	4, 284, 110
Total domestic.....	4, 398, 709	7, 355, 321	17, 131, 504	28, 932, 413	164, 549	-----	29, 096, 962
Buckwheat no. 1.....	1, 182, 697	2, 143, 075	3, 305, 333	6, 633, 408	101, 905	-----	6, 735, 313
Buckwheat no. 2 (rice).....	634, 906	1, 181, 464	1, 885, 934	3, 702, 304	121, 788	300	3, 824, 392
Buckwheat no. 3 (barley).....	612, 011	1, 296, 526	1, 167, 283	3, 075, 820	243, 192	121, 997	3, 441, 009
Boiler.....	14, 827	-----	74, 928	90, 036	160	16, 119	106, 305
Other, including buckwheat no. 4.....	101, 718	280, 354	145, 045	527, 250	16, 502	113, 930	657, 682
Total steam.....	2, 546, 159	4, 901, 419	6, 578, 523	14, 028, 818	483, 537	252, 346	14, 764, 701
Grand total.....	6, 944, 868	12, 256, 740	23, 710, 027	42, 961, 231	648, 086	252, 346	43, 861, 663
<i>Value</i>							
Lump ² and broken.....	\$64, 951	\$271, 764	\$503, 781	\$841, 194	-----	-----	\$841, 194
Egg.....	2, 654, 962	5, 314, 079	15, 976, 369	23, 977, 869	\$62	-----	23, 977, 931
Stove.....	9, 969, 613	16, 205, 618	40, 239, 512	66, 496, 883	83, 527	-----	66, 580, 410
Chestnut.....	9, 672, 624	17, 040, 525	38, 565, 573	65, 389, 822	608, 899	-----	65, 998, 721
Pea.....	3, 697, 518	5, 156, 086	10, 513, 798	19, 411, 646	82, 124	-----	19, 493, 770
Total domestic.....	26, 059, 668	43, 988, 072	105, 799, 033	176, 117, 414	774, 612	-----	176, 892, 026
Buckwheat no. 1.....	3, 369, 590	5, 788, 437	9, 585, 867	18, 748, 782	249, 470	-----	18, 998, 252
Buckwheat no. 2 (rice).....	991, 448	1, 667, 070	2, 954, 961	5, 618, 479	182, 744	\$600	5, 796, 823
Buckwheat no. 3 (barley).....	619, 385	1, 070, 631	1, 290, 673	2, 986, 689	224, 417	84, 795	3, 285, 901
Boiler.....	8, 020	-----	64, 662	78, 058	120	10, 217	83, 395
Other, including buckwheat no. 4.....	61, 169	134, 459	92, 791	288, 504	6, 960	79, 017	374, 481
Total steam.....	5, 049, 612	8, 660, 597	13, 994, 954	27, 710, 512	663, 711	174, 629	28, 543, 852
Grand total.....	31, 109, 280	52, 648, 669	119, 793, 987	203, 827, 926	1, 433, 323	174, 629	205, 440, 878
<i>Average value per ton</i>							
Lump ² and broken.....	5. 58	6. 03	5. 54	5. 69	-----	-----	5. 69
Egg.....	5. 92	5. 99	6. 28	6. 17	6. 89	-----	6. 17
Stove.....	6. 38	6. 45	6. 60	6. 53	5. 45	-----	6. 53
Chestnut.....	6. 18	6. 18	6. 31	6. 26	4. 68	-----	6. 24
Pea.....	4. 57	4. 48	4. 58	4. 55	4. 30	-----	4. 55
Total domestic.....	5. 92	5. 98	6. 18	6. 09	4. 71	-----	6. 08
Buckwheat no. 1.....	2. 85	2. 70	2. 90	2. 83	2. 45	-----	2. 82
Buckwheat no. 2 (rice).....	1. 56	1. 41	1. 57	1. 52	1. 50	2. 00	1. 52
Buckwheat no. 3 (barley).....	1. 01	. 83	1. 11	. 97	. 92	. 70	. 96
Boiler.....	. 54	-----	. 86	. 81	. 80	. 63	. 78
Other, including buckwheat no. 4.....	. 60	. 48	. 64	. 55	. 42	. 69	. 57
Total steam.....	1. 98	1. 77	2. 13	1. 98	1. 37	. 69	1. 93
Grand total.....	4. 48	4. 30	5. 05	4. 74	2. 22	. 69	4. 68

¹ The difference between the totals shown in this table and those in tables 2A, etc., is due to the exclusion here of 33,060 tons of coal, with a value of \$99,821, stored at collieries.² The quantity of lump included is insignificant.

TRENDS IN SIZES SHIPPED

TABLE 12A.—*Sizes of anthracite shipped from breakers, by regions, 1929-32, in percent of total*

[Note that shipments of dredge and washery coal are not included]

Size of coal	Percent of total shipments							
	Lehigh region				Schuylkill region			
	1929	1930	1931	1932	1929	1930	1931	1932
Lump ¹ and broken.....	0.2	0.2	0.2	0.2	0.8	0.6	0.4	0.4
Egg.....	7.5	7.1	6.4	6.5	8.9	8.6	8.0	7.2
Stove.....	24.8	24.6	22.2	22.5	22.7	22.2	20.4	20.5
Chestnut.....	26.4	26.3	24.9	22.5	24.5	24.4	23.2	22.5
Pea.....	9.2	8.9	11.3	11.6	8.3	8.7	10.0	9.4
Total domestic.....	68.1	67.1	65.0	63.3	65.2	64.5	62.0	60.0
Buckwheat no. 1.....	13.7	15.3	16.0	17.0	15.6	15.4	17.0	17.5
Buckwheat no. 2 (rice).....	7.7	7.8	9.7	9.2	7.1	8.0	9.2	9.6
Buckwheat no. 3 (barley).....	9.9	9.1	8.6	8.8	10.4	10.8	10.4	10.6
Boiler.....			.7	.2	.2	.3	(²)	
Other.....	.6	.7	(²)	1.5	1.5	1.0	1.4	2.3
Total steam.....	31.9	32.9	35.0	36.7	34.8	35.5	38.0	40.0
	Wyoming region				Total, including Sullivan County			
Lump ¹ and broken.....	0.6	0.5	0.4	0.4	0.6	0.5	0.3	0.3
Egg.....	13.6	12.4	11.3	10.7	11.4	10.5	9.6	9.1
Stove.....	27.5	27.9	25.7	25.7	25.8	25.7	23.6	23.7
Chestnut.....	25.9	26.2	26.1	25.8	25.6	25.7	25.0	24.3
Pea.....	7.7	7.8	10.1	9.7	8.1	8.2	10.3	9.9
Total domestic.....	75.3	74.8	73.6	72.3	71.5	70.6	68.8	67.3
Buckwheat no. 1.....	12.0	13.0	13.5	13.9	13.2	14.0	14.9	15.5
Buckwheat no. 2 (rice).....	7.3	7.2	8.0	8.0	7.3	7.6	8.6	8.6
Buckwheat no. 3 (barley).....	4.6	4.2	4.2	4.9	7.0	6.8	6.7	7.2
Boiler.....	.1	(²)	.1	.3	.1	.1	.2	.2
Other.....	.7	.8	.6	.6	.9	.9	.8	1.2
Total steam.....	24.7	25.2	26.4	27.7	28.5	29.4	31.2	32.7

¹ The quantity of lump included is insignificant.² Less than 0.1 percent.

TRENDS IN VALUES AND PRICES

SOURCES OF INFORMATION AND METHODS OF ANALYSIS

Margins of sales agents not included.—The valuation figures in this study represent value at the breaker or washery reported by the operating companies. In making its report the company is requested to “estimate value of the products not sold” and to “exclude selling expenses”.

From this it will be seen that where a producing company sells its output to a separately organized sales company—the practice of many, including certain of the larger producers—the value reported will exclude the margin of the sales company and may therefore be somewhat less than the circular price at which the coal in question is placed on the general market. This fact should be borne in mind in considering the variations in value between different regions shown in the tables for the same sizes of coal. (See table 13A.)

Estimates included in figures of value.—The reports are furnished in writing and signed by responsible officers of the mining companies. Complete reports on tonnage produced and physical operation of the

mines have been received from all operators. A few companies did not reply on the value of the product, however, and estimates of these values have been made to round out the totals. The estimates represent only 13.6 percent of the value shown in 1932 because, aside from a few extremely small producers, only one company failed to report. The values for this company, a producer in the Wyoming region, were estimated in 1932 as follows: The tonnage it reported of each size from broken to pea was multiplied by the company's average circular price for that size as quoted in the trade journals for the year. The tonnage reported for buckwheat no. 1 and for each smaller size was multiplied by the average sales realization obtained on that size by all other producers in the Wyoming region.

AVERAGE SALES REALIZATIONS

The average sales realizations on each size from 1929 to 1932 are given in table 13A. To insure comparability the table is based on shipments of breaker coal only, the dredge and washery product being excluded.

TABLE 13A.—Average sales realization per net ton on anthracite shipments from breakers, by regions and sizes, 1929-32

[Value does not include margins of separately incorporated sales companies]

Size	Lehigh region				Schuylkill region			
	1929	1930	1931	1932	1929	1930	1931	1932
Lump ¹ and broken.....	\$7.11	\$6.86	\$6.35	\$5.58	\$7.29	\$7.12	\$6.76	\$6.03
Egg.....	7.33	7.22	6.87	5.92	7.38	7.23	6.84	5.99
Stove.....	7.72	7.71	7.26	6.38	7.85	7.71	7.26	6.45
Chestnut.....	7.42	7.26	7.16	6.18	7.36	7.24	7.13	6.18
Pea.....	4.11	4.08	4.77	4.57	4.06	3.96	4.55	4.48
Total domestic.....	7.07	7.00	6.74	5.92	7.11	6.96	6.71	5.98
Buckwheat no. 1.....	2.33	2.47	2.80	2.85	2.23	2.32	2.70	2.70
Buckwheat no. 2 (rice) ²	1.63	1.48	1.53	1.56	1.52	1.41	1.44	1.41
Buckwheat no. 3 (barley).....	1.19	1.13	1.05	1.01	1.15	1.05	.91	.83
Total steam ⁴	1.77	1.81	1.97	1.98	1.68	1.66	1.82	1.77
Total, all sizes.....	5.38	5.29	5.07	4.48	5.22	5.08	4.85	4.30
	Wyoming region				Total, including Sullivan County			
Lump ¹ and broken.....	\$6.95	\$6.96	\$6.79	\$5.54	\$7.08	\$7.02	\$6.74	\$5.69
Egg.....	7.28	7.27	7.11	6.28	7.30	7.26	7.01	6.17
Stove.....	7.78	7.65	7.44	6.60	7.79	7.68	7.37	6.53
Chestnut.....	7.36	7.26	7.26	6.31	7.37	7.25	7.21	6.26
Pea.....	4.23	4.35	4.89	4.58	4.16	4.18	4.76	4.55
Total domestic.....	7.17	7.10	6.97	6.18	7.14	7.05	6.87	6.09
Buckwheat no. 1.....	2.43	2.60	2.86	2.90	2.35	2.49	2.79	2.83
Buckwheat no. 2 (rice) ²	1.61	1.57	1.57	1.57	1.58	1.51	1.52	1.52
Buckwheat no. 3 (barley).....	1.23	1.24	1.20	1.11	1.19	1.13	1.03	.97
Total steam ⁴	1.94	2.04	2.15	2.13	1.82	1.87	2.00	1.98
Total, all sizes.....	5.88	5.83	5.70	5.05	5.63	5.52	5.35	4.74

¹ The quantity of lump included is insignificant.

² In 1930 a producer in the Lehigh and Wyoming regions, which formerly sold its output direct, was merged with a larger producer selling through a separately incorporated sales company. As the values do not include margins of separately incorporated sales companies, the averages for 1930, as reported above, are not exactly comparable with those for other years. The effect of this change is fully discussed in Coal in 1930, pp. 759-761, which also gives the figures recalculated to the 1929 basis. The discrepancy is not serious.

³ Includes birdseye.

⁴ Includes all other steam sizes.

AVERAGE VALUES OF SHIPMENTS, LOCAL SALES, AND COLLIERY FUEL

TABLE 14A.—Average value per net ton of anthracite shipped, local sales, colliery fuel, and total production, by regions, 1931 and 1932¹

[Note that values in this table include washery and dredge coal; data for 1919-30 will be found in Coal in 1930, p. 762]

Year and region	Shipments	Local sales	Colliery fuel	Total production	Year and region	Shipments	Local sales	Colliery fuel	Total production
1931					1932				
Lehigh.....	\$5.04	\$5.25	\$1.61	\$4.83	Lehigh.....	\$4.46	\$4.83	\$1.52	\$4.30
Schuylkill.....	4.65	3.79	1.54	4.43	Schuylkill.....	4.14	3.95	1.47	3.99
Wyoming.....	5.67	4.73	1.52	5.31	Wyoming.....	5.04	4.64	1.37	4.76
Total ²	5.25	4.45	1.53	4.97	Total ²	4.68	4.40	1.42	4.46

¹ Value given for shipments is value at which coal left possession of producing company f.o.b. mines and does not include margins of separately incorporated selling companies.

² Includes Sullivan County.

LABOR STATISTICS

The Bureau of Mines collected data on the days worked by various groups of employees for the first time in 1932. These data are shown in table 15A.

TABLE 15A.—Men employed and days worked in the anthracite field, by regions, in 1932

Region	Average number of men employed				Number of days operated			
	Under-ground	In strip pits	Other surface	Total	Under-ground	In strip pits	Other surface	Total
Lehigh:								
Breaker product.....	12,004	1,261	4,234	17,499	159	205	171	166
Dredge product.....			13	13			141	141
	12,004	1,261	4,247	17,512	159	205	171	166
Schuylkill:								
Breaker product.....	20,463	620	7,314	28,397	169	140	180	171
Washery product.....			179	179			237	237
Dredge product.....			313	313			142	142
	20,463	620	7,806	28,889	169	140	180	172
Wyoming:								
Breaker product.....	61,131	526	12,360	74,017	155	212	166	158
Washery product.....			179	179			137	137
Dredge product.....			6	6			150	150
	61,131	526	12,545	74,202	155	212	166	158
Sullivan County: Breaker product...	522		118	640	77		76	77
Total:								
Breaker product.....	94,120	2,407	24,028	120,553	159	190	171	162
Washery product.....			358	358			187	187
Dredge product.....			332	332			142	142
Grand total.....	94,120	2,407	24,716	121,243	159	190	171	162

¹ Includes a comparatively small number of washery employees who could not be separated from breaker employees.

TABLE 16A.—*Strikes, suspensions, and lockouts in the anthracite region in 1932*

[Data for 1923-31 will be found in Coal in 1930, pp. 765-766, and Coal in 1931, p. 507]

	Lehigh	Schuyl-kill	Wyoming	Sullivan County	Total
Total number employed.....	17,512	28,889	74,202	640	121,243
Men on strike.....	969	6,613	26,677	-----	34,259
Man-days lost on account of strike.....	11,174	64,880	213,469	-----	289,523
Average days lost:					
Per man employed.....	0.6	2.2	2.9	-----	2.4
Per man on strike.....	11.5	9.8	8.0	-----	8.5

EQUIPMENT AND METHODS OF MINING

Since 1929 the Bureau of Mines has collected data on the tonnage of anthracite produced by mechanized mining; however, the figures are now presented for the first time. (See table 17A.)

TABLE 17A.—*Tonnage of anthracite produced by mechanized mining, 1927-32*

Year	Scrapers and mobile loaders		Conveyors and pit-car loaders ¹		Total mechanized mining	
	Number of units	Net tons loaded	Number of units	Net tons handled	Number of units	Net tons handled
1927 ²	305	(³)	159	(³)	464	2,223,281
1928 ²	302	(³)	184	(³)	486	2,351,074
1929.....	350	2,450,279	355	1,019,879	705	3,470,158
1930.....	384	2,927,088	421	1,540,662	805	4,467,750
1931.....	462	2,462,370	576	1,922,410	1,038	4,384,780
1932.....	⁴ 490	⁴ 2,651,591	⁵ 859	⁵ 2,781,749	1,349	5,433,340

¹ Includes duckbills and other self-loading conveyors.² Figures for 1927 and 1928 as reported by the Pennsylvania Department of Mines.³ Not separately reported; see total.⁴ Includes 479 scraper units loading 2,591,030 tons and 11 mobile machines loading 60,561 tons.⁵ Includes 818 hand-loaded face-conveyor units handling 2,724,433 tons, 24 pit-car loaders handling 30,874 tons, and 17 duckbills or other self-loading conveyors loading 26,442 tons.TABLE 18A.—*Anthracite cut by machines, 1931 and 1932*

Region	1931				1932		
	Number of cutting machines		Net tons cut by machines		Number of cutting machines		Net tons cut by machines
	Permissible	All other types	Permissible	All other types	Permissible	All other types	
Lehigh.....					1	2	4,000
Schuylkill.....	4	3	7,804	15,024	3	5	30,653
Wyoming.....	121	65	653,524	874,913	137	54	1,626,035
Total (including Sullivan County).....	125	78	661,328	925,937	141	66	1,674,223

TABLE 19A.—Anthracite mined in strip pits, 1930-32

Region	1930		1931		1932	
	Number of power shovels	Net tons mined	Number of power shovels	Net tons mined	Number of power shovels	Net tons mined
Lehigh.....	31	1, 125, 533	75	1, 648, 582	100	1, 791, 305
Schuylkill.....	44	1, 187, 563	48	1, 573, 681	63	1, 512, 147
Wyoming.....	33	223, 192	66	590, 974	71	677, 521
	108	2, 536, 288	189	3, 813, 237	234	3, 980, 973

DREDGE OPERATIONS

Average receipts per net ton on all dredge coal sold, 1929-32

1929.....	\$0. 88	1931.....	\$0. 83
1930.....	. 84	1932.....	. 93

TABLE 20A.—Anthracite produced by dredges, by rivers, 1931 and 1932

River (including tributaries)	Number of dredges	Net tons	Value	River (including tributaries)	Number of dredges	Net tons	Value
1931				1932			
Lehigh.....	1	33, 014	\$110, 929	Lehigh.....	2	42, 091	\$49, 584
Schuylkill.....	8	90, 855		Schuylkill.....	5	105, 990	99, 313
Susquehanna.....	26	334, 881		Susquehanna.....	29	331, 969	296, 902
	35	458, 750	379, 682		36	480, 050	445, 799

IMPORTS AND EXPORTS

TABLE 21A.—Anthracite imported, by countries, 1931 and 1932, in net tons

[Compiled from records of the Bureau of Foreign and Domestic Commerce]

Country	1931	1932	Country	1931	1932
Belgium.....	14, 325	23, 050	Soviet Russia in Europe.....	243, 029	231, 961
Canada.....	2, 483		United Kingdom.....	342, 154	281, 727
Germany.....	35, 960	62, 628		637, 951	607, 097
French Indo-China.....		7, 731			

TABLE 22A.—Anthracite imported, by customs district, 1931 and 1932, in net tons

[Compiled from records of the Bureau of Foreign and Domestic Commerce]

Customs district	1931	1932	Customs district	1931	1932
Buffalo.....	459		Puerto Rico.....		8, 309
Connecticut.....	13, 703	7, 375	Rhode Island.....	122, 595	96, 599
Georgia.....	560		San Francisco.....		840
Hawaii.....	1, 290		Virginia.....		190
Maine and New Hampshire.....	61, 758	50, 261	Washington.....		1, 026
Massachusetts.....	412, 527	419, 468		637, 951	607, 097
New York.....	25, 059	23, 029			

TABLE 23A.—*Anthracite exported, by countries, 1931 and 1932, in net tons*

[Compiled from records of the Bureau of Foreign and Domestic Commerce]

Country	1931	1932	Country	1931	1932
North America:			North America—Continued.		
Bermudas.....	1,629	34	West Indies:		
Canada.....	1,772,284	1,301,020	British:		
Central America:			Jamaica.....	1	-----
Guatemala.....	54	-----	Other British.....	170	80
Honduras.....	78	95	Cuba.....	62	186
Nicaragua.....	21	-----	Dominican Republic.....	78	7
Salvador.....	10	-----	Netherlands.....	19	-----
Mexico.....	469	213	South America:		
Miquelon and St. Pierre			Guiana: British.....		245
Islands.....	268	271	Surinam.....	314	212
Newfoundland and Lab-			Venezuela.....		13
rador.....	2,848	979	Europe: France.....	3	-----
				1,778,308	1,303,355

TABLE 24A.—*Anthracite exported, by customs districts and ports, 1931 and 1932, in net tons*

[Compiled from records of the Bureau of Foreign and Domestic Commerce]

Customs district	1931	1932	Customs district	1931	1932
North Atlantic:			Rail gateways on Canadian		
Massachusetts.....	41	6	border:		
New York.....	58,160	30,673	Eastern:		
Philadelphia.....	34,925	46,075	Maine and New		
South Atlantic:			Hampshire.....	78	41
Florida.....	87	8	Vermont.....	3,861	2,896
Mobile.....	314	457	St. Lawrence.....	645,338	469,892
New Orleans.....	115	329	Rochester ¹	108,527	69,021
Mexican border:			Buffalo.....	909,551	673,988
Arizona.....	87	58	Michigan.....	1,522	374
El Paso.....	274	98	Western:		
San Antonio.....	47	-----	Duluth, Superior,		
Pacific coast:			and International		
San Francisco.....	4	-----	Falls.....	2,529	3,145
San Diego.....	19	8	Dakota.....	2,065	1,107
Lake Erie ports: Ohio ¹	10,764	5,179		1,778,308	1,303,355

¹ Chiefly Buffalo and Erie.² Rail, car ferry, and Lake Ontario.

GOLD AND SILVER

(DETAILED STATISTICS—GENERAL REPORT)

By J. P. DUNLOP

DOMESTIC PRODUCTION

Approximate distribution of the production of gold and silver in the United States in 1932, by producing States and Territories

[Figures supplied by U.S. Bureau of the Mint]

State or Territory	Gold		Silver		Increase or decrease from 1931	
	Fine ounces	Value ¹	Fine ounces	Value ²	Gold	Silver (fine ounces)
Alabama.....	34	\$700	8	\$2	-\$100	+2
Alaska.....	433, 193	8, 954, 900	256, 673	72, 382	-678, 300	-141, 276
Arizona.....	66, 666	1, 378, 100	2, 137, 259	602, 707	-1, 449, 900	-1, 933, 601
California.....	570, 404	11, 791, 300	608, 692	143, 451	+1, 018, 000	-268, 333
Colorado.....	270, 131	5, 584, 100	1, 653, 084	466, 170	+929, 900	-720, 622
Georgia.....	256	5, 300	30	8	+3, 700	+19
Idaho.....	40, 959	846, 700	6, 590, 951	1, 858, 648	+473, 400	-825, 093
Michigan.....			71, 408	20, 137		+69, 384
Missouri.....						-1, 800
Montana.....	38, 405	793, 900	2, 336, 100	658, 780	-51, 600	-1, 740, 772
Nevada.....	127, 530	2, 636, 300	1, 305, 062	368, 027	-241, 100	-1, 063, 562
New Mexico.....	20, 008	413, 600	1, 108, 164	312, 502	-247, 500	+37, 712
North Carolina.....	193	4, 000	10, 094	2, 847	-3, 100	-10, 099
Oregon.....	19, 921	411, 800	9, 027	2, 546	+95, 500	+1, 540
Pennsylvania.....	82	1, 700	783	221	-3, 200	-821
Philippine Islands.....	229, 728	4, 748, 900	149, 131	42, 055	+933, 800	+39, 123
Puerto Rico.....	106	2, 200	12	3	+2, 200	+12
South Carolina.....	98	1, 400	5	1	+900	+5
South Dakota.....	479, 154	9, 905, 000	125, 388	35, 360	+991, 300	+11, 978
Tennessee.....	160	3, 300	19, 300	5, 443	-4, 900	-22, 668
Texas.....	10	200	1, 414	399	+200	+1, 173
Utah.....	145, 952	3, 017, 100	7, 680, 378	2, 165, 867	-775, 400	-376, 637
Virginia.....	15	300			+300	
Washington.....	4, 407	91, 100	17, 512	4, 938	+21, 700	-7, 204
Wyoming.....	1, 650	34, 100	298	84	+33, 000	+263
	2, 449, 032	50, 626, 000	23, 980, 773	6, 762, 578	+1, 098, 800	-6, 951, 277

¹ Gold valued at \$20.67+ a fine ounce.

² Silver valued at 23.2 cents a fine ounce. Average New York price of bar silver.

The figures in the preceding table were obtained through cooperation between the United States Bureau of the Mint and the Bureau of Mines and were agreed upon after conference and adjustment between the two Bureaus. They are therefore final for both.

The totals are based on bullion deposits in the United States mints and assay offices and on returns to the Bureau of the Mint from the smelting and refining companies. The distribution is adjusted by means of information collected by the Bureau of Mines directly from the producing mines and tabulated for the mine reports discussed later. The data for the total production and in part for the distribution are obtained from records of (1) the unrefined domestic gold and

silver deposited in the United States mints and assay offices, (2) the domestic gold and silver in fine bars reported by private refineries, and (3) the unrefined domestic gold and silver contained in ore and matte exported for reduction. The last item is very small.

Domestic smelters recovered 670,835 fine ounces of gold and 47,860,653 fine ounces of silver from foreign ores and bullion, a decrease of 159,162 ounces of gold and 18,832,375 ounces of silver compared with 1931. As usual in recent years, the foreign ores and bullion came mainly from Mexico, Canada, and Peru.

More old gold was returned from industrial to monetary use in 1932 than was issued to the arts and industries, a distinct reversal of the normal trend; returns totaled \$26,594,769 and issues \$20,105,102, a net return of \$6,489,667 in old gold. The quantity of new silver used for industrial and artistic purposes was 14,461,011 fine ounces (60 percent of the domestic output) in 1932 compared with 24,335,838 ounces in 1931. The total quantity of silver (new and old) used in the arts and manufactures was 24,257,967 ounces (9,424,152 ounces less than in 1931). In addition to the gold and silver derived from foreign and domestic ore and bullion \$23,727,798 in gold and 7,290,509 ounces of silver were recovered from old or obsolete jewelry, silverware, dental waste, old film, and other material. Nearly all the silver recovered is now handled by private refineries, as purchases of silver bullion by United States mints and assay offices are confined to the quantity required for subsidiary coinage.

Gold and silver produced in the United States, 1792-1932

[The estimate for 1792-1872 is by R. W. Raymond, commissioner, and for the period since 1872 by the Director of the Mint]

Period	Gold		Silver	
	Fine ounces	Value	Fine ounces	Value
1792-1847.....	1, 186, 977	\$24, 537, 000	309, 500	\$404, 500
1848-72.....	58, 279, 781	1, 204, 750, 000	118, 568, 200	157, 749, 900
1873-1932.....	166, 858, 982	3, 449, 281, 300	3, 103, 318, 677	2, 362, 404, 089
	226, 325, 740	4, 678, 568, 300	3, 222, 196, 377	2, 520, 558, 489

The average commercial value per fine ounce of silver for the total recorded domestic production is \$0.782.

PRICES OF SILVER

The average monthly prices of fine bar silver in New York in 1932 follow:

Price of silver per fine ounce in 1932, by months

January.....	\$0. 30087	August.....	\$0. 28298
February.....	. 30449	September.....	. 28182
March.....	. 30123	October.....	. 27507
April.....	. 28610	November.....	. 27010
May.....	. 28067	December.....	. 25322
June.....	. 27778		
July.....	. 27012	Average.....	. 28204

Price of silver per fine ounce, 1928-32¹

1928.....	\$0. 585	1931.....	\$0. 290
1929.....	. 533	1932.....	. 282
1930.....	. 385		

The yearly price of silver showed a fairly regular downward trend—from \$1.337 and \$1.339 in 1865 and 1866 to \$0.507 in 1915. The World War caused the price to advance; the downward trend was steady from 1923 to 1927. There was an increase of about 2 cents an ounce in 1928, followed by a decrease of about 5 cents an ounce in 1929. The average yearly price decreased to \$0.385 for 1930, \$0.290 for 1931, and \$0.282 for 1932. The value of exports of silver in 1932 was \$12,635,359 less than in 1931. Exports of domestic bullion amounted to 36,680,390 ounces, including 756,602 ounces to India, 27,166,707 ounces to China, and 4,066,598 ounces to Germany and Great Britain.

More than half the world output of silver is derived from ores valued chiefly for metals other than silver, so that the price of silver has less weight in encouraging the bulk of silver production than that of other metals associated with it. Only about one third of the world silver output is derived from ores having silver as a highly predominant factor.²

Other information relating to the production and consumption of silver has been published by the Bureau of Mines.³

IMPORTS AND EXPORTS^a

Value of gold and silver imported into and exported from the United States, 1931 and 1932, by classes

	Imports	Exports	Excess of—	
			Imports	Exports
1931				
Gold:				
Contained in domestic ore and base bullion.....		\$33, 354		\$33, 354
Contained in foreign ore and base bullion.....	\$32, 694, 434		\$32, 694, 434	
Domestic bullion refined.....	55, 058, 583	385, 957, 242		330, 898, 659
Foreign bullion refined.....	111, 053, 605	5, 666	111, 047, 939	
United States coin.....	311, 766, 842	80, 783, 994	230, 982, 848	
Foreign coin.....	101, 545, 747	14, 203	101, 531, 544	
	612, 119, 211	466, 794, 459	476, 256, 765	330, 932, 013
Excess imports over exports.....			145, 824, 752	
Silver:				
Contained in domestic ore and base bullion.....		3, 380		3, 380
Contained in foreign ore and base bullion.....	11, 734, 914		11, 734, 914	
Domestic bullion refined.....	52, 350	21, 664, 216		21, 611, 866
Foreign bullion refined.....	11, 478, 777	2, 092, 870	9, 385, 907	
United States coin.....	3, 496, 197	51, 629	3, 444, 568	
Foreign coin.....	1, 901, 901	2, 673, 158		771, 257
	28, 664, 139	26, 485, 253	24, 565, 389	22, 386, 503
Excess imports over exports.....			2, 178, 886	

^a Figures on imports and exports compiled by C. Galther, of the Bureau of Mines, from records of the Bureau of Foreign and Domestic Commerce.

¹ Average New York price for all silver.

² Merrill, Charles White, *Economic Relations of Silver to Other Metals in Argentiferous Ores*: Econ. Paper 10, Bureau of Mines, 1930, 29 pp.

³ Merrill, Charles White, *Summarized Data of Silver Production*: Econ. Paper 8, Bureau of Mines, 1930, 58 pp.; *Consumption of Silver in the Arts and Industries of the United States*: Econ. Paper 14, Bureau of Mines, 1932, 18 pp.

Value of gold and silver imported into and exported from the United States, 1931 and 1932, by classes—Continued

	Imports	Exports	Excess of—	
			Imports	Exports
1932				
Gold:				
Contained in domestic ore and base bullion.....		\$55,752		\$55,752
Contained in foreign ore and base bullion.....	\$15,244,602		\$15,244,602	
Domestic bullion refined.....	1,033,229	710,196,647		709,163,418
Foreign bullion refined.....	254,799,204	4,491,629	250,307,575	
United States coin.....	38,658,595	85,790,248		47,131,653
Foreign coin.....	53,579,497	8,993,248	44,586,249	
	363,315,127	809,527,524	310,138,426	756,350,823
Excess exports over imports.....				446,212,397
Silver:				
Contained in domestic ore and base bullion.....		6,940		6,940
Contained in foreign ore and base bullion.....	6,775,674		6,775,674	
Domestic bullion refined.....	373	10,160,831		10,160,458
Foreign bullion refined.....	9,982,644	1,582,101	8,400,543	
United States coin.....	1,771,807	36,701	1,735,106	
Foreign coin.....	1,119,445	2,063,321		943,876
	19,649,943	13,849,894	16,911,323	11,111,274
Excess imports over exports.....			5,800,049	

DOMESTIC SUPPLY

The total excess of imports of gold over exports from 1916 to 1932, inclusive, was \$1,724,775,473. The only years since 1916 in which exports of gold exceeded imports were 1919, when the excess was \$292,000,000; 1925, when the excess was \$134,000,000; 1928, when the excess was \$391,862,000; and 1932, when the excess was \$446,212,000. The large gain in the domestic supply of gold is illustrated best by the following figures, which show the excess of imports over exports: 1916, \$530,000,000; 1917, \$180,000,000; 1918, \$21,000,000; 1920, \$95,000,000; 1921, \$667,000,000; 1922, \$238,000,000; 1923, \$294,000,000; 1924, \$258,000,000; 1926, \$98,000,000; 1927, \$6,000,000; 1929, \$175,000,000; 1930, \$280,000,000; and 1931, \$145,325,000.

The domestic supply of new gold comes chiefly from dry and siliceous ore and from placer gravel worked largely by dredges. These two sources yielded 90.2 percent of the domestic gold in 1915, 79.86 percent in 1930, 86.5 percent in 1931, and 92.9 percent in 1932. The proportionate output of gold from copper ore was 7.2 percent in 1915, 16.4 percent in 1926, 22.2 percent in 1929, 9.65 percent in 1931, and only 4.24 percent in 1932.

In 1915 dry and siliceous ore yielded 36 percent of the total silver, copper ore 26 percent, lead ore 27 percent, and lead-zinc ore only 9 percent. In 1932 dry and siliceous ore yielded 17.3 percent, copper ore 22.8 percent, lead ore 21.5 percent, and lead-zinc ore 23.3 percent. Thus, the largest gain in the output of silver has been from lead-zinc ore and the greatest loss from dry and siliceous ore.

WORLD PRODUCTION

GOLD

According to the Bureau of the Mint, the estimated value of the gold produced in the world from 1860 to 1932, inclusive, is \$18,508,415,693. For 1932 alone the production of the world is estimated as \$499,048,746, an increase of about \$37,456,500 over 1931.

In a Bureau of Mines publication ⁵ the world output of gold from 1493 to 1927, inclusive, is estimated as approximately 1,003,560,000 ounces, of which 51.5 percent was produced from 1901 to 1927.

In 1932 production of gold in the United States (Philippine Islands excluded) increased \$115,000 over 1931. The following large increases were recorded: Transvaal, Cape Colony, and Natal, \$14,072,500; Canada, \$7,346,000; Russia, \$5,976,700; Australia, \$2,362,900; New Guinea, \$1,165,400; Colombia, \$1,115,900; Philippine Islands, \$987,000; Southern Rhodesia, \$868,700; New Zealand, \$757,300; Venezuela, \$718,900; British West Africa, \$692,200; Belgian Congo, \$639,400; and Yugoslavia, \$531,700.

The following table shows the output of gold by countries, as given by the Bureau of the Mint:

World production of gold, 1927-32

Country	1927	1928	1929	1930	1931	1932
North America:						
Canada.....	\$38,300,500	\$39,082,000	\$39,861,700	\$43,557,100	\$55,715,100	\$63,061,106
Central America.....	1,500,000	1,250,000	1,100,000	1,200,000	1,400,000	1,700,000
Mexico.....	14,990,700	14,451,700	13,535,900	13,860,200	12,878,600	12,082,419
United States ¹	43,767,500	44,335,300	42,514,300	43,419,000	45,762,100	45,877,085
South America:						
Argentina.....	20,000	20,000	20,700	20,700	-----	132,920
Bolivia.....	5,000	10,500	31,000	340,700	358,200	253,871
Brazil.....	2,120,100	2,069,600	2,219,800	2,000,000	2,387,000	2,386,584
Chile.....	1,240,300	595,500	221,900	344,900	442,000	787,555
Colombia.....	1,500,000	833,600	1,000,000	3,281,200	4,015,900	5,131,762
Ecuador.....	1,328,000	1,541,500	1,391,800	1,447,000	1,232,400	1,356,659
Guiana:						
British.....	118,100	110,100	132,000	143,300	143,500	386,858
French.....	999,600	939,700	850,300	900,000	899,900	930,439
Netherland.....	158,800	113,700	61,500	81,600	95,000	185,426
Peru.....	1,915,400	1,383,000	2,524,800	1,861,500	1,523,300	1,148,424
Venezuela.....	813,800	997,600	893,100	1,156,500	874,600	1,593,513
Europe:						
Austria.....	2,700	6,600	-----	-----	-----	5,313
Czechoslovakia.....	155,000	143,500	103,700	49,900	22,600	47,194
France.....	930,400	1,116,500	1,116,500	881,900	881,900	897,199
Germany.....	119,600	112,300	120,300	125,600	85,100	86,388
Great Britain.....	-----	2,700	200	-----	-----	124
Greece.....	10,000	10,000	10,000	10,000	10,000	9,964
Italy.....	44,500	38,600	31,900	35,600	44,700	37,871
Rumania.....	1,367,800	1,294,600	1,470,800	1,775,800	1,994,400	1,994,460
Russia.....	16,743,000	18,584,100	22,436,800	29,636,500	35,162,000	41,138,708
Spain.....	20,000	15,000	10,000	10,000	10,000	10,000
Sweden.....	305,700	289,400	206,700	1,240,300	1,860,500	1,860,455
Yugoslavia.....	256,500	299,100	381,500	478,500	451,900	983,607
Asia:						
China.....	2,067,200	2,067,200	1,033,600	2,000,000	2,000,000	2,000,000
Chosen.....	3,706,800	3,440,000	2,843,200	3,299,400	4,312,700	4,312,683
East Indies: Netherland.....	2,337,400	2,278,900	2,230,500	2,282,900	2,068,900	1,611,659
Federated Malay States.....	221,300	386,400	505,000	611,800	558,600	561,426
India, British.....	7,943,500	7,773,800	7,521,800	6,805,800	6,831,700	6,814,098
Indo-China.....	6,600	5,300	10,600	10,600	6,000	5,974
Japan.....	6,383,900	6,905,700	7,360,200	8,036,000	8,972,300	8,972,347
Philippine Islands.....	1,639,600	2,204,500	3,320,400	3,704,500	3,761,900	4,748,899
Sarawak.....	5,000	4,100	29,000	35,700	122,000	169,054
Taiwan.....	303,700	186,300	311,800	322,000	1,910,700	1,910,694
Turkey.....	19,900	18,600	18,600	18,600	18,600	18,605
Africa:						
-----	228,870,700	233,033,400	235,346,900	242,884,900	246,572,800	263,276,049
Australasia:						
-----	14,251,000	13,063,700	12,090,100	12,854,900	16,205,400	20,561,344
	396,490,600	400,995,500	404,969,000	430,724,900	461,592,300	499,048,746

¹ Philippine Islands excluded.

⁵ Ridgway, Robert H., Summarized Data of Gold Production: Econ. Paper 6, Bureau of Mines, 1929 63 pp.

SILVER

The Bureau of the Mint estimates the world production of silver from 1860 to 1932, inclusive, as 10,180,308,308 fine ounces valued at \$7,565,300,258. The output in 1932 was 31,163,000 ounces less than that in 1931. The largest decreases were: Mexico, 16,761,400 ounces; United States (Philippine Islands excluded), 6,990,400 ounces; Peru, 4,207,500 ounces; Canada, 2,201,800 ounces; and Bolivia, 1,657,100 ounces. The only large increase was made by Australia, chiefly from the Mount Isa mine in Queensland.

World production of silver, 1927-32, in fine ounces

Country	1927	1928	1929	1930	1931	1932
North America:						
Canada.....	22,736,700	21,936,400	23,143,300	26,435,900	20,558,200	18,356,933
Central America.....	3,154,000	2,553,500	3,000,000	3,900,000	4,000,000	4,300,000
Mexico.....	104,573,900	108,537,300	108,571,400	105,410,900	86,064,500	69,303,054
United States ¹	60,394,200	53,426,000	61,233,300	50,627,200	30,822,000	23,831,642
South America:						
Argentina.....	15,000	15,000	15,000	15,000	-----	50,154
Bolivia.....	5,402,800	5,633,800	4,816,200	7,091,100	5,772,300	4,115,200
Brazil.....	15,600	25,600	21,000	20,000	10,000	10,000
Chile.....	2,900,000	1,436,700	328,500	732,400	320,200	103,780
Colombia.....	131,400	68,200	60,000	60,000	40,000	50,000
Ecuador.....	37,600	79,800	96,500	106,100	104,800	114,167
Guyana.....	3,000	7,500	7,500	7,500	6,000	6,000
Peru.....	18,295,400	21,607,700	21,495,200	15,500,400	10,942,500	6,735,039
Venezuela.....	3,200	4,000	4,000	4,200	4,200	6,000
Europe:						
Austria.....	9,700	18,900	10,600	10,200	10,200	27,938
Czechoslovakia.....	750,000	767,700	723,000	890,600	899,300	947,139
France.....	308,600	360,100	360,100	652,000	652,000	643,000
Germany.....	5,293,400	5,220,800	5,512,800	5,485,400	5,784,600	5,465,500
Great Britain.....	46,700	32,800	36,000	41,000	34,000	16,043
Greece.....	241,100	241,100	241,100	241,100	192,900	192,900
Italy.....	537,100	514,400	518,700	571,700	719,300	801,499
Norway.....	315,100	398,700	282,900	337,800	297,400	289,499
Poland.....	250,000	235,100	360,600	558,700	558,700	482,250
Rumania.....	140,700	100,000	90,700	142,000	155,800	155,739
Russia.....	321,500	380,000	300,000	300,000	350,000	400,000
Spain.....	3,056,600	2,526,500	2,659,200	2,659,200	3,098,700	3,374,335
Sweden.....	80,400	75,000	75,000	75,000	80,000	80,000
Yugoslavia.....	53,800	62,700	80,000	100,300	94,700	133,230
Asia:						
Burma.....	6,000,000	7,400,000	7,273,300	7,047,000	5,898,000	6,001,000
China.....	100,000	100,000	50,000	50,000	60,000	60,000
Chosen.....	51,400	56,100	60,100	68,800	203,500	209,332
East Indies, Netherland.....	2,285,800	2,032,000	1,967,900	2,094,200	1,473,100	842,362
India, British.....	24,800	25,800	25,000	25,000	25,000	25,737
Indo-China.....	10,200	53,200	3,200	3,200	1,600	2,724
Japan.....	4,531,500	5,144,900	5,674,700	5,628,600	6,183,300	6,360,643
Philippine Islands.....	28,400	36,400	101,500	110,300	97,100	149,131
Taiwan.....	18,100	11,700	13,000	15,200	17,200	17,713
Turkey.....	225,100	220,000	220,000	220,000	200,000	200,000
Africa:						
Algeria.....	118,100	117,400	166,900	167,000	150,000	58,899
Bechuanaland.....	400	100	100	400	700	1,672
Belgian Congo.....	10,600	10,600	12,000	13,000	15,000	18,000
British West Africa (Gold Coast, Ashanti, Nigeria, Sierra Leone).....	-----	-----	-----	200	252,900	86,402
East Africa, Portuguese.....	700	300	100	40	100	257
Rhodesia.....	131,600	103,900	100,500	73,360	76,500	114,893
Tanganyika and Kenya Colony.....	900	1,700	1,200	1,400	1,900	4,431
Transvaal, Cape Colony, Natal.....	1,011,700	1,031,400	1,031,800	1,050,000	1,063,000	1,120,668
Australasia.....	10,309,300	10,304,400	9,926,100	10,165,000	8,628,800	9,492,726
	253,981,100	257,925,200	260,970,000	248,708,400	195,920,000	164,757,002

¹ Philippine Islands excluded.

MINE REPORT

METHOD OF COLLECTING STATISTICS

The first table in this report presents the final official figures of the production of gold and silver in the United States in 1932, as agreed upon by the Bureau of the Mint and the Bureau of Mines. With the comparatively unimportant exceptions of domestic gold and silver contained in ore and matte exported for reduction during the year, these figures record the production of gold and silver bullion from domestic ore in marketable form as metals, either refined or unrefined.

To trace this total gold and silver produced back to its source by States, counties, and mining districts, the Bureau of Mines systematically investigates the "mine production" of ores containing gold and silver and the output of the placer mines, the output being classified by methods of production and by kinds of ore, as well as by mining districts. The resulting figures form the basis of the mine reports.

Of the two plans for ascertaining the production of gold and silver, one is a measure of the metallurgic industry and the other of the mining industry; one reports the metal actually recovered in marketable form and the other the mine output and its recoverable content. The two methods will not produce exactly corresponding results, but the figures for a period of years sufficiently long to compensate for overlap or lag should agree within allowable limits of error.

Gold and silver produced in the United States, 1905-32, according to mint and mine returns

Year	Mint		Mine	
	Gold	Silver	Gold	Silver
1905-28.....	\$1,787,435,300	<i>Fine ounces</i> 1,493,633,559	\$1,774,263,214	<i>Fine ounces</i> 1,487,330,295
1929.....	45,651,400	61,327,868	45,883,477	60,961,491
1930.....	47,247,600	50,748,127	47,916,142	47,835,181
1931.....	49,527,200	30,932,050	49,751,668	29,953,728
1932.....	50,626,000	23,980,773	53,218,073	22,899,865
	1,980,487,500	1,660,622,377	1,971,032,574	1,648,980,560

According to mint reports, these figures show a total excess of gold for the 28 years of about \$9,454,900 (a difference of 0.48 percent) and a total excess of silver of about 11,641,800 ounces (a difference of 0.70 percent).

UNITS OF MEASUREMENT

In the measurement of ores and concentrates the short ton of 2,000 pounds is used. Throughout 1932 and earlier years the price of gold was fixed by law at \$20.67 + per fine ounce. The annual average prices for silver from 1928 to 1932 are given on page 457.

MINES PRODUCING

LEADING GOLD PRODUCERS

About \$33,865,400 in gold (70 percent of the mine output of the United States, Philippine Islands and Puerto Rico excluded) in 1932 represented the yield of 25 companies, none of which produced less than \$288,000. The Homestake mine of South Dakota was the largest producer; the Alaska Juneau ranked second; and the Fairbanks Exploration Co. of Alaska, which made the largest output from gold dredging, ranked third. The Benguet Consolidated Mining Co. (including the Balatoc mine, controlled by Benguet stockholders) in the Philippine Islands ranked second only to the Homestake mine as a gold producer, having an output considerably larger than that of the Alaska Juneau property.

Of the largest producers 9 were in California, 4 each in Alaska and Colorado, 3 in Utah, and 1 each in Arizona, Idaho, Nevada, New Mexico, and South Dakota. Of these companies 16 produced gold from dry and siliceous ores, 5 from gravel by dredging, and the other 4 mainly from copper, lead, and lead-zinc ores.

Larger producers of gold in the United States in 1932, in order of output

Rank	Operator	State	Mining district	Source of gold
1	Homestake Mining Co.....	South Dakota	Whitewood.....	Dry and siliceous ore.
2	Alaska Juneau Gold Mining Co....	Alaska	Juneau.....	Do.
3	Fairbanks Exploration Co.....	do	Fairbanks.....	Dredging gravel.
4	Golden Cycle Mining & Reduction Co. ¹	Colorado	Cripple Creek.....	Dry and siliceous ore.
5	Empire Star Mines Co., Ltd.....	California	Grass Valley.....	Do.
6	Amer Gold Mining Co.....	Colorado	Mosquito Creek.....	Do.
7	Natomas Co.....	California	Natomas.....	Dredging gravel.
8	Hammon Consolidated Gold Fields.	Alaska	Nome.....	Do.
9	London Gold Mines Co.....	Colorado	Mosquito Creek.....	Dry and siliceous ore.
10	Idaho Maryland Mines Co.....	California	Grass Valley.....	Do.
11	Yuba Consolidated Gold Fields.....	do	Yuba River.....	Dredging gravel.
12	Eureka Standard Mining Co.....	Utah	Tintic.....	Dry and siliceous ore.
13	Capital Dredging Co.....	California	Folsom.....	Dredging gravel.
14	Willow Creek Mines, Inc.....	Alaska	Willow Creek.....	Dry and siliceous ore.
15	Shenandoah-Dives Mining Co....	Colorado	San Juan.....	Do.
16	Utah Copper Co.....	Utah	West Mountain.....	Copper ore and siliceous ore.
17	Argonaut Mining Co.....	California	Jackson.....	Dry and siliceous ore.
18	United States Smelting, Refining & Mining Co.	Utah	West Mountain.....	Copper ore, siliceous ore, lead ore, and lead-zinc ore.
19	Mountain Copper Co., Ltd.....	California	Iron Mountain.....	Dry and siliceous ore.
20	Phelps Dodge Corporation (Copper Queen).	Arizona	Warren.....	Copper ore and lead ore.
21	Original Sixteen to One Mines, Inc.	California	Alleghany.....	Dry and siliceous ore.
22	Kennedy Mining & Milling Co....	do	Jackson.....	Do.
23	St. Joseph Lead Co.....	Idaho	Middle Boise.....	Do.
24	Elkoro Mines Co.....	Nevada	Jarvis.....	Do.
25	American Metal Co.....	New Mexico	Willow Creek.....	Lead-zinc ore.

¹ Custom mill. Includes ore from Cresson, Portland, United Gold, and other mines.

Besides the output of these 25 large operators, a total of about \$14,301,000 in gold came from more than 6,300 placer and lode mines, of which the majority produced only small quantities; some, however, had an output of more than \$200,000. Only two companies in the United States exceeded the output of the Benguet mine in the Philippine Islands, and only the Homestake property in South Dakota exceeded the combined output of the Benguet mine and the Balatoc mine (controlled by Benguet stockholders).

LEADING SILVER PRODUCERS

The output of silver from the 25 leading producing companies in 1932 was 19,643,000 ounces, or 86 percent of the total (excluding the Philippine Islands and Puerto Rico). Eight of these properties each produced more than 1,000,000 ounces, and none yielded less than 120,000 ounces. Three mines in Utah, 2 in Idaho, and 1 each in Arizona, Colorado, and Montana produced more than 1,000,000 ounces of silver. Of the 25 large producers 7 were in Utah, 5 in Idaho, 3 each in Arizona, Nevada, and New Mexico, 2 in Colorado, and 1 each in California and Montana, and most of the silver was derived from base ores.

Larger producers of silver in the United States in 1932, in order of output

Rank	Operator	State	Mining district	Source of silver
1	Sunshine Mining Co.....	Idaho.....	Evolution.....	Copper-lead ore.
2	Silver King Coalition Mines Co...	Utah.....	Uintah.....	Lead ore and lead-zinc ore.
3	Tintic Standard Mining Co.....	.....do.....	Tintic.....	Lead ore and siliceous ore.
4	Bunker Hill & Sullivan Mining & Concentrating Co. (Sullivan-Last Chance).	Idaho.....	Yreka.....	Lead ore.
5	Anaconda Copper Mining Co.....	Montana.....	Summit Valley (Butte).	Copper ore.
6	United States Smelting, Refining & Mining Co.	Utah.....	West Mountain.....	Lead ore, lead-zinc ore, siliceous ore, and copper ore.
7	Empire Zinc Co.....	Colorado.....	Battle Mountain.....	Copper ore.
8	Phelps Dodge Corporation (Copper Queen and New Cornelia).	Arizona.....	Warren and Ajo.....	Copper ore and lead ore.
9	Hecla Mining Co.....	Idaho.....	Lelande.....	Lead ore.
10	Magma Copper Co.....	Arizona.....	Pioneer.....	Copper ore.
11	Shenandoah-Dives Mining Co.....	Colorado.....	San Juan.....	Dry and siliceous ore.
12	American Metal Co.....	New Mexico.....	Willow Creek.....	Lead-zinc ore.
13	Asarco Mining Co.....	.....do.....	Central.....	Do.
14	Tonopah Mining Co.....	Nevada.....	Tonopah.....	Dry and siliceous ore.
15	Park City Consolidated Mines Co.	Utah.....	Park City.....	Mainly lead-zinc ore; some siliceous ore.
16	Niagara Mining & Smelting Co...	.....do.....	West Mountain.....	Lead-zinc ore and dry and siliceous ore.
17	Federal Mining & Smelting Co. (Morning mine).	Idaho.....	Hunter.....	Lead ore and lead-zinc ore.
18	United Verde Extension Mining Co.	Arizona.....	Verde.....	Copper ore.
19	Eureka Standard Mining Co.....	Utah.....	Tintic.....	Dry and siliceous ore.
20	Bunker Hill & Sullivan Mining & Concentrating Co. (Crescent group).	Idaho.....	Yreka.....	Copper-lead ore.
21	Elkoro Mines Co.....	Nevada.....	Jarbridge.....	Dry and siliceous ore.
22	Utah Copper Co.....	Utah.....	West Mountain.....	Copper ore.
23	Red Mountain Mines Syndicate (Santa Fe group).	California.....	Randsburg.....	Dry and siliceous ore.
24	Wright Leasing Co.....	New Mexico.....	Mogollon.....	Do.
25	Tonopah Belmont Development Co.	Nevada.....	Tonopah.....	Do.

NUMBER OF MINES

The following table indicates the number of mines that produced gold and silver in 1932. The placers are those in which the gold and the silver in natural alloy with the gold and, in a few placers, with platinum are recovered from gravel and sand, whether by hand washing, sluicing, hydraulicking, drifting (in frozen ground or ancient buried river channels), or dredging. The lode mines are those producing gold and silver (from ore as distinguished from gravel) mainly from underground workings, including those which yield ore valuable chiefly for copper, lead, or zinc but which contribute precious metals

as byproducts. In addition to producing mines enumerated here, many properties were being prospected and developed, and many other mining claims were being held by assessment work only.

The enumeration of placer mines is less satisfactory than that of lode mines, because some are operated only temporarily and are individually small and because much of the production is made by transitory miners not regularly working placer ground. So far as possible the unit is, as for lode mines, not the operator but the mining claim or group of claims.

The number of gold mines active in all the States in which gold is obtained by placer mining increased greatly. Many of the operations were on a very small scale, and gold dredges accounted for most of the increase in placer gold.

The number of lode mines operated increased noticeably in 1932 in all the large gold-producing States but Utah. The increased activity was entirely in mines yielding siliceous ore, as the number producing base ores containing gold or silver was much smaller in 1932 than in 1931 or 1930.

Number of mines in the United States producing gold and silver in 1932, by States¹

State	Placer	Lode	Total	State	Placer	Lode	Total
Alabama.....		1	1	North Carolina.....	6	9	15
Alaska ²	660	30	690	Oregon.....	169	99	268
Arizona.....	179	341	520	Pennsylvania ³		1	1
California.....	828	718	1,546	South Carolina.....	3	2	5
Colorado.....	335	478	813	South Dakota.....	217	8	225
Georgia.....	11	3	14	Tennessee ³		1	1
Idaho.....	280	178	458	Texas.....		2	2
Illinois ³		2	2	Utah.....	19	86	105
Michigan ³		1	1	Virginia ³		1	1
Missouri ³		1	1	Washington.....	55	40	95
Montana.....	232	390	622	Wyoming.....	21	10	31
Nevada.....	103	382	485				
New Mexico.....	378	87	465		3,496	2,871	6,367

¹ Philippine Islands and Puerto Rico excluded.

² Estimate for both placer and lode mines.

³ Number of mines contributing to production of gold and silver.

Number of mines in the United States producing gold and silver, 1928-32¹

Year	Placer	Lode	Total	Year	Placer	Lode	Total
1928.....	1,202	1,985	3,187	1932.....	3,496	2,871	6,367
1929.....	1,219	2,060	3,279				
1930.....	1,799	1,984	3,783	Average.....	1,959	2,178	4,137
1931.....	2,081	1,988	4,069				

¹ Philippine Islands and Puerto Rico excluded.

MINE PRODUCTION

Mine production of gold and silver in the United States in 1932, by States

State	Gold		Silver		Increase or decrease from 1931	
	Fine ounces	Value	Fine ounces	Value	Gold	Silver (fine ounces)
Alabama.....	68.84	\$1,423	10	\$3	+\$1,016	+7
Alaska.....	493,860.38	10,209,000	234,050	66,002	+702,000	-117,950
Arizona.....	66,789.67	1,380,665	2,082,823	587,356	-1,227,830	-1,162,488
California.....	569,166.99	11,765,726	493,533	139,176	+951,564	-374,285
Colorado.....	317,927.95	6,572,154	1,860,408	524,635	+1,749,420	-335,506
Georgia.....	278.65	5,760	30	9	+3,933	+18
Idaho.....	46,885.39	969,207	6,716,968	1,894,185	+589,644	-503,955
Illinois.....	-----	-----	257	72	-----	-1,043
Michigan.....	-----	-----	71,408	20,137	-----	+69,971
Missouri.....	-----	-----	1,128	318	-----	-38,872
Montana.....	40,602.01	839,318	1,686,213	475,512	+10,126	-2,143,624
Nevada.....	129,719.83	2,681,547	1,304,365	367,831	-259,926	-1,257,706
New Mexico.....	23,208.05	479,753	1,142,351	322,143	-164,407	+100,492
North Carolina.....	367.22	7,591	10,045	2,832	-7	-10,288
Oregon.....	19,861.21	410,568	8,616	2,430	+93,253	+1,362
Pennsylvania.....	80.30	1,660	830	234	-3,540	-1,770
Philippine Islands.....	244,297.82	5,050,084	160,184	45,173	+1,287,651	+63,084
Puerto Rico.....	106.44	2,200	12	4	+2,200	+12
South Carolina.....	71.01	1,468	5	1	+998	+4
South Dakota.....	480,337.58	9,929,459	126,195	35,587	+997,668	+12,633
Tennessee.....	160.36	3,315	19,300	5,443	-5,010	-21,700
Texas.....	8.66	179	1,422	401	+179	+1,422
Utah.....	135,256.35	2,795,997	6,962,097	1,963,311	-1,312,326	-1,328,869
Virginia.....	30.81	637	8	2	+637	+8
Washington.....	5,082.13	105,057	17,412	4,910	+45,022	-4,998
Wyoming.....	256.63	5,305	195	55	+4,140	+178
	2,574,424.28	53,218,073	22,899,865	6,457,762	+3,466,405	-7,053,863

The preceding table gives the quantity and value of the mine production of gold and silver in 1932 by States, as reported to the Bureau of Mines by the producing mines.

The notable increases in output of gold were in those States that produce gold from placers or dry and siliceous ore. The decreases in Arizona, Nevada, New Mexico, and Utah were due largely to a much lower output of base ores containing gold and silver. The increases in silver were relatively small and were due almost entirely to increased silver from mill bullion. The total output of silver from Arizona, Montana, Nevada, and Utah was nearly 6,000,000 ounces less in 1932 than in 1931.

ORE PRODUCTION, CLASSIFICATION, AND AVERAGE VALUE

The best index of lode mining is the quantity, metallic content, and value of ore mined rather than the number of mines or operators. The next table states the production of ore from mines producing gold and silver and the average extraction value of precious metals per ton.

The classification adopted is necessarily arbitrary in part. The complex nature of western ores especially and the gradations from one well-recognized class to another render a fixed terminology essential. The dry and siliceous ores comprise gold and silver ores proper, as well as fluxing ores carrying considerable quantities of iron and manganese oxides and very small quantities of gold and silver, and precious metal-bearing ores carrying copper, lead, or zinc in quantities

too low to permit classifying them as copper, lead, zinc, or mixed ores. The distinction between gold and silver ores is not made here. The total number of silver mines and the total production of true silver ore are both comparatively small. The copper ores include those containing 2.5 percent or more of copper, or less than this percentage in the great disseminated copper deposits of the West and in the Lake Superior ores. In general, the lead ores are those containing 5 percent (dry assay) or more of lead, and the zinc ores are those containing 16 percent or more of zinc, both irrespective of their precious-metal content. However, ores of lower grades in lead and especially in zinc are treated profitably in many districts; and, of course, they are then classified as lead or zinc ores, as the case may be. The mixed ores are combinations of those enumerated.

The lead, zinc, and lead-zinc ores in most districts in the Eastern and Central States carry no appreciable quantity of gold or silver, and such ores are excluded from this report.

The total quantity of ore from which gold or silver was produced, sold or treated annually, decreased from 68,000,000 tons in 1918 to 21,500,000 tons in 1921, then increased steadily until 1926 when the total was 65,787,864 tons. In 1927 the total quantity of ore was 64,526,920 tons; in 1928, 69,747,193 tons; in 1929, 75,653,924 tons, much the largest output ever recorded; in 1930, 53,972,449 tons; in 1931, 41,985,920 tons; and in 1932, 21,451,974 tons.

Ore produced in the United States and average extraction value of gold and silver per ton in 1932, by States ¹

State	Dry and siliceous ore		Copper ore		Lead ore		Zinc ore		Copper - lead and copper-lead-zinc ores		Lead-zinc ore		Total (short tons)
	Short tons	Average value	Short tons	Average value	Short tons	Average value	Short tons	Average value	Short tons	Average value	Short tons	Average value	
Alabama.....	800	\$1.78											800
Alaska.....	4,068,000	1.16	56,900	\$0.40									4,124,900
Arizona.....	60,129	7.15	4,343,070	.30	11,362	\$12.54				18	\$1.94		4,414,579
California.....	973,218	7.20	78,031	.52	4,112	13.62							1,060,361
Colorado.....	885,087	7.53	49,404	7.31	837	25.57		542		25	16.44		935,895
Georgia.....	440	4.64											440
Idaho.....	108,122	6.82	12	19.00	585,841	1.28			165,400	5.69	173,388	\$1.02	1,032,853
Michigan.....			258,500	.08									258,500
Montana.....	65,586	9.07	668,679	.93	1,907	10.08	20,858	\$0.04	104	18.70	7,880	.25	765,014
Nevada.....	493,191	5.25	1,357,464	.21	3,262	17.83	36		484	3.64	594		1,855,031
New Mexico.....	29,878	5.18	1,184,528	.06	607	2.25	19,974		977	6.04	228,754	2.36	1,464,718
North Carolina.....	555	8.03	20,105	.27									20,660
Oregon.....	4,973	15.29	176	7.59	1	56.00					45	.71	5,195
Pennsylvania.....			69,811	2.42									69,811
South Carolina.....	150	6.32											150
South Dakota.....	1,409,893	7.05											1,409,893
Tennessee.....			221,485	.04				(²)				(²)	221,485
Texas.....			104	2.38	81	4.11							185
Utah.....	111,984	13.77	3,196,677	.23	88,780	7.41			8	8.25	371,093	4.91	3,768,542
Virginia.....	50	12.78											50
Washington.....	8,496	11.91			353	.20		(²)			33,423	.02	42,272
Wyoming.....	615	5.94			25	2.72							640
Percentage.....	8,226,167	4.21	11,504,946	.30	697,168	2.45	41,410	.02	167,106	5.70	815,177	3.12	21,451,974
	38.35		53.63		3.25		0.19		0.78		3.80		100.00
1931: Total.....	8,329,009	3.80	30,966,550	.23	894,636	2.39	97,950	.02	213,245	3.91	1,484,530	2.29	41,985,920
Percentage.....	19.84		73.75		2.13		0.23		0.51		3.54		100.00

¹ Illinois, Missouri, Philippine Islands, and Puerto Rico excluded; quantity of crude ore containing gold and silver unknown.

² Includes only copper ore that yielded silver.

³ Current slag fumed.

⁴ Ore is pyritiferous magnetite yielding 784 tons of copper concentrates; value given is per ton of concentrates.

⁵ Zinc ore and lead-zinc ore yielded no gold or silver.

About 5,740 tons more siliceous ore were treated in South Dakota in 1932 than in 1931, and 67 cents more gold was recovered per ton; 30,193 tons less were treated in California, and about 68 cents more gold was recovered per ton; 127,000 tons less were treated in Alaska, and about 4 cents more gold was recovered per ton; and 73,468 tons more were treated in Colorado, and about \$1.49 more gold was recovered per ton. These four States yielded nearly 90 percent of the total dry and siliceous ore treated and nearly 84 percent of the total gold from such ores in 1932. About 50,636,000 tons less copper ore containing gold or silver were sold or treated in 1932 than in 1929; the quantity of lead ore containing gold or silver was less than half that in 1929, and the quantity of zinc and lead-zinc ores decreased even more. The only increase was in dry and siliceous ores, which aggregated 8,226,167 tons in 1932 compared with 7,671,150 tons in 1929.

The value of the gold and silver recovered from 13,225,807 tons of base ores in 1932 was \$8,706,876 (\$2,875,205 less than in 1931), an average of 66 cents a ton, of which about 26 cents represents gold. The average recovery from dry and siliceous ore in 1932 was \$4.07 in gold a ton, so that 1 ton of such ore yielded 15.7 times as much gold as was derived from 1 ton of ore of all other classes combined. Copper ore constituted 53.6 percent of the total quantity of ores containing gold and silver in 1932, and the large decrease in the quantity of copper ore mined reduced the gold from this source by \$2,394,427 compared with 1931.

*Ore produced in the United States and average extraction value of gold and silver per ton, 1928-32*¹

Year	Dry and siliceous ore		Copper ore		Lead ore	
	Short tons	Average value	Short tons	Average value	Short tons	Average value
1928.....	8,094,743	\$3.86	55,870,147	\$0.31	1,686,631	\$5.09
1929.....	7,671,150	3.67	62,140,833	.31	1,592,043	4.40
1930.....	7,767,289	3.81	41,723,797	.29	1,380,641	2.85
1931.....	8,329,009	3.80	30,966,550	.23	894,636	2.39
1932.....	8,226,167	4.21	11,504,946	.30	697,168	2.45

Year	Zinc ore		Copper-lead and copper-lead-zinc ores		Lead-zinc ore		Total (short tons)
	Short tons	Average value	Short tons	Average value	Short tons	Average value	
1928.....	161,311	\$0.44	351,141	\$4.09	3,583,220	\$3.09	69,747,193
1929.....	494,372	1.76	259,126	6.15	3,496,400	2.84	75,653,924
1930.....	249,366	.72	246,430	5.04	2,604,926	2.46	53,972,449
1931.....	97,950	.02	213,245	3.91	1,484,530	2.29	41,985,920
1932.....	41,410	.02	167,106	5.70	815,177	3.12	21,451,974

¹ Illinois, Missouri, Philippine Islands, and Puerto Rico excluded; quantity of crude ore containing gold and silver not known.

GOLD, BY SOURCES

As the following table indicates, 92.9 percent of the domestic output of gold in 1932 was obtained from dry and siliceous ores—normally gold quartz and gold-silver quartzose ores—and from placers compared with 86.52 percent in 1931. The total contribution of gold

from the great copper, lead, and zinc mines of the country was only 7.1 percent in 1932 compared with 13.48 percent in 1931.

*Mine production of gold in the United States in 1932, by States, in fine ounces*¹

State	Placers	Dry and siliceous ore	Copper ore	Lead ore	Copper-lead and copper-lead-zinc ores	Lead-zinc ore	Total
Alabama.....		68.84					68.84
Alaska.....	267,126.75	226,733.63					493,860.38
Arizona.....	3,479.76	19,604.88	38,631.14	5,073.71	0.18		66,789.67
California.....	230,529.86	335,550.84	1,561.28	1,525.01			569,166.99
Colorado.....	2,498.81	312,220.31	2,402.30	794.23	12.30		317,927.95
Georgia.....	179.96	98.69					278.65
Idaho.....	12,439.68	34,214.82	10.53	112.95		107.41	46,885.39
Montana.....	3,537.42	27,659.30	8,657.76	710.70	17.30	19.53	40,602.01
Nevada.....	5,408.22	108,541.46	13,459.14	2,308.46	7.55		129,719.33
New Mexico.....	1,270.28	5,214.80	2,718.65	38.33	10.58	13,955.41	23,208.05
North Carolina.....	21.72	214.89	130.61				367.22
Oregon.....	16,201.90	3,621.47	35.00	2.51		.33	19,861.21
Pennsylvania ²			80.30				80.30
South Carolina.....	25.20	45.81					71.01
South Dakota.....	1,095.16	479,242.42					480,337.58
Tennessee.....			160.36				160.36
Texas.....			.68	7.98			8.66
Utah.....	152.04	62,167.60	31,066.35	5,217.55	.52	36,652.29	135,256.35
Virginia.....		30.81					30.81
Washington.....	386.95	4,695.18					5,082.13
Wyoming.....	79.19	176.44		1.00			256.63
Value.....	544,432.90	1,620,102.19	98,914.10	15,787.43	48.43	50,734.97	2,330,020.02
Percentage.....	\$11,254,427	\$33,490,485	\$2,044,736	\$326,355	\$1,001	\$1,048,785	\$48,165,789
	23.37	69.53	4.24	0.68		2.18	100.00
1931: Total.....	452,862.46	1,471,737.77	214,744.49	17,647.99	1,175.31	66,561.20	2,224,729.22
Value.....	\$9,361,498	\$30,423,520	\$4,439,163	\$364,816	\$24,296	\$1,375,942	\$45,989,235
Percentage.....	20.36	66.16	9.65	0.79	0.05	2.99	100.00

¹ Philippine Islands and Puerto Rico excluded. The Bureau of Science, Manila, P.I., reports that bullion from lode mines of the Philippine Islands yielded 242,403.36 ounces of gold and placer mines 1,894.46 ounces.

² From pyritiferous magnetite ore.

Examination of the data on domestic mine production of gold from different sources shows that the recovery from placer mines was 27 percent of the total output from 1906 to 1910, inclusive. In recent years placer mines have yielded the following percentages of the total output of gold: 1929, 19.83; 1930, 20.59; 1931, 20.36; and 1932, 23.37. From 1911 to 1915, inclusive, the gold recovered from dry and siliceous ore was 67 percent of the total output; in 1930, 59.27 percent; in 1931, 66.16 percent; and in 1932, 69.53 percent. The domestic gold recovered from copper ore increased from 5.8 percent of the total from 1906 to 1908, inclusive, to 22.24 percent in 1929 and decreased to 4.24 percent in 1932. The recovery of gold from all other base ores (about 2.3 percent of the total from 1906 to 1910, inclusive, and nearly 6 percent in 1927) decreased to 2.86 percent in 1932. There have, however, been increased operations at placer and lode gold mines, as the lower cost of labor and supplies has encouraged more extended prospecting and the reopening of many large and small mines.

Gold produced in the United States, by sources, as reported by mines, 1922-32, in fine ounces¹

Year	Placers	Dry and siliceous ore	Copper ore	Lead ore	Zinc ore	Copper-lead and copper-lead-zinc ores	Lead-zinc ore	Total
1922-28.....	3,302,574	9,741,580	2,208,689	287,037	9,617	26,717	361,277	15,937,491
1929.....	408,260	1,074,254	457,853	37,230	1,348	3,940	76,108	2,058,995
1930.....	440,294	1,207,610	332,999	26,584	350	3,268	67,619	2,138,724
1931.....	452,862	1,471,738	214,745	17,648	-----	1,175	66,561	2,224,729
1932.....	544,433	1,620,102	93,914	15,738	-----	48	50,735	2,330,020

¹ Philippine Islands and Puerto Rico excluded.

PLACERS

Although the number of placer operations increased about 68 per cent in 1932, the gold recovered from this source increased only about 20 per cent, more than half of the increase being due to the larger output by 57 dredges. In nearly all States the output from placers increased. As Alaska, California, Idaho, and Oregon produced 526,298 ounces of gold from placers the 1,559 placer mines in other States had a combined yield of only 18,135 ounces. The States showing the largest increases were California, 36,026 ounces; Alaska, 32,895 ounces; Idaho, 7,226 ounces; and Oregon, 5,083 ounces.

Placer gold is derived chiefly from dredging (which yielded 76 per cent of the total in 1932), from placers operated by hydraulicking, and from those worked by drift mining or by sluicing. The last two methods are relatively unimportant, except in Alaska, California, and Oregon. There is also a small annual output of gold from dry placer mining in Arizona, California, and New Mexico and of gold and platinum from ocean-beach mining in California and Oregon.

Dredging.—The value of gold recovered by dredges in the United States (Philippine Islands excluded) from the inception of the industry as a commercial factor in 1896 to the end of 1932 is recorded as \$256,240,763, divided as follows: California, \$174,528,580; Alaska, \$50,962,074; Montana, \$9,592,435; Colorado, \$8,299,956; Idaho, \$6,407,084; Oregon, \$5,815,684; and other States, \$634,950. The output of gold from dredges was \$8,551,653 in 1932, compared with \$7,592,379 in 1931. In 1932, 57 dredges were operated and in 1931, 58. Of the total for 1932 California produced \$3,903,481 from 22 dredges; Alaska, \$4,293,000 from 25 dredges; Idaho, \$171,130 from 5 dredges; Oregon, \$160,848 from 4 dredges; and Colorado, \$23,194 from 1 dredge.

One dredge operating in the Philippine Islands in 1932 recovered about \$39,000.

GOLD AND SILVER

471

Gold dredges operated in the United States in 1932

ALASKA

Name	Address	District	Number of dredges
Northern Star Dredging Co.....	Council.....	Council.....	1
Ophir Gold Dredging Co.....	Nome.....	do.....	1
Fairbanks Exploration Co.....	Fairbanks.....	Fairbanks.....	5
J. R. Murphy, lessee from Fairbanks Gold Dredging Co., Ltd.	Meehan.....	do.....	2
Forsgren & Vollmer Dredging Co.....	Deering.....	Fairhaven.....	1
Keewalik Mining Co.....	Candle.....	do.....	1
American Creek Dredging Co.....	Fairbanks.....	Hot Springs.....	1
North American Dredge Co.....	Flat.....	Iditarod.....	1
J. E. Riley Investment Co.....	do.....	do.....	1
Anderson, Pontella, Utilla & Larson, lessees	Ophir.....	Innoko.....	1
Henry Creek Gold Dredging Co.....	Taylor.....	Kougarok.....	1
Dry Creek Dredging Co.....	Nome.....	Nome.....	1
Hammon Consolidated Gold Fields.....	do.....	do.....	3
McCarthy & Panos.....	do.....	do.....	1
Goldsmith Dredging Co.....	do.....	Solomon.....	1
Ruby Dredging Co.....	Solomon.....	do.....	1
Spruce Creek Dredging Co.....	do.....	do.....	1
New York Alaska Gold Dredging Corporation.....	Akiak.....	Tuluksak-Aniak.....	1

CALIFORNIA

Charles Stahel.....	Cottonwood.....	Cottonwood.....	1
Capital Dredging Co.....	San Francisco.....	Folsom.....	3
Milton Mining Co.....	Turlock.....	Jenny Lind.....	1
LaGrange Gold Dredging Co.....	San Francisco.....	LaGrange.....	1
Lancha Plana Gold Dredging Co.....	Camanche.....	Lancha Plana.....	1
Placer Development Co., Ltd.....	San Francisco.....	Lewiston.....	1
Trinity Dredging Co.....	Lewiston.....	do.....	1
Natomas Co.....	Sacramento.....	Natoma.....	6
Gold Bar Dredging Co.....	Lewiston.....	New River.....	1
Shasta Butte Gold Dredging Co.....	Oroville.....	Oroville.....	1
Snelling Gold Dredging Co.....	San Francisco.....	Snelling.....	1
Yuba Consolidated Gold Fields.....	do.....	do.....	1
Do.....	do.....	Yuba River.....	3

COLORADO

Continental Dredging Co.....	Breckenridge.....	Breckenridge.....	1
------------------------------	-------------------	-------------------	---

IDAHO

Crooked River Mining Co.....	Nampa.....	Banner.....	1
New York-Idaho Dredging Co.....	Seattle, Wash.....	Pierce.....	1
American Gold Dredging Corporation.....	Boise.....	Steele.....	1
Idaho Gold Dredging Co.....	Warren.....	Warren.....	1
Warren Creek Dredging Co.....	do.....	do.....	1

OREGON

Empire Gold Dredging & Mining Co.....	Prairie City.....	Canyon.....	1
Rogue River Gold Co.....	Rogue River.....	Foots Creek.....	1
Oregon Dredging Co. (Superior).....	Baker.....	Mormon Basin.....	1
J. E. Leonard.....	Holland.....	Waldo.....	1

Gold produced in the United States by dredges, 1928-32

Year	Dredges	California	Alaska	Other States ¹	Total
1928.....	57	\$4,430,913	\$2,185,000	\$276,418	\$6,892,331
1929.....	63	3,589,259	2,932,000	310,042	6,831,301
1930.....	60	3,451,801	3,912,600	373,821	7,738,222
1931.....	58	3,619,355	3,749,000	224,024	7,592,379
1932.....	57	3,903,481	4,293,000	355,172	8,551,653

¹ Colorado, Idaho, Oregon, and Washington.

Further information on this subject may be found in issues of Mineral Resources, in reports of the Director of the Mint, and in reports of geological surveys or mining officials of the various States.

DRY AND SILICEOUS ORES

The siliceous ore comprises free-milling (amalgamating) ore, as in Alaska, California, and Oregon; both amalgamating and concentrating ore, as in many States; concentrating ore, as in parts of Colorado and Arizona; all-sliming and cyaniding ore, as in Nevada; and smelting ore. Tailings both from old dumps and from current millings are largely reworked by concentration and subsequent cyanidation or smelting. The material smelted consists mainly of concentrates and siliceous and pyritic ores, which are also valuable as fluxes. Figures of relative output by methods and States are given on page 475.

Nearly all the siliceous ore in three of the largest gold-producing States—Alaska, California, and South Dakota—yields only a small quantity of silver and is classed as gold ore. The siliceous ore from Colorado includes some silver and gold-silver ore.

Siliceous ore treated and gold recovered per ton of ore treated, 1928-32

Year	Alaska		California		South Dakota		Colorado	
	Ore treated	Recovery per ton	Ore treated	Recovery per ton	Ore treated	Recovery per ton	Ore treated	Recovery per ton
	<i>Short tons</i>	<i>Ounce</i>	<i>Short tons</i>	<i>Ounce</i>	<i>Short tons</i>	<i>Ounce</i>	<i>Short tons</i>	<i>Ounce</i>
1928.....	3,736,500	0.045	797,441	0.339	1,422,138	0.223	894,455	0.266
1929.....	3,900,000	.045	573,724	.357	1,463,159	.217	640,442	.302
1930.....	3,936,000	.045	730,712	.344	1,365,156	.298	710,491	.274
1931.....	4,195,000	.054	1,008,411	.310	1,404,153	.308	811,619	.281
1932.....	4,068,000	.056	978,218	.343	1,409,893	.340	885,087	.353

COPPER ORE

The gold obtained as a byproduct in the treatment of copper ore decreased about \$2,394,400 in 1932, following decreases of \$2,444,500 in 1931 and \$2,581,000 in 1930. No State made any important increase in gold from copper ore in 1932. The largest decreases were in California, Nevada, Utah, Arizona, and Montana; of these, all but Montana suffered losses of more than 50 percent.

LEAD ORE

The production of gold from lead ore decreased about \$38,500 in 1932, following a decrease of about \$184,700 in 1931. Mines in Arizona and Montana registered increases in gold from lead ore, but mines in Utah a large decrease.

ZINC, LEAD-ZINC, AND MIXED ORES

The combined output of gold from lead-zinc and mixed ores was \$1,049,786 in 1932, or about \$350,000 less than in 1931; Utah and New Mexico yielded nearly all the gold from these sources. No gold was reported derived from zinc ore in 1932 or 1931.

SILVER, BY SOURCES

The combined yield of silver from placers and dry and siliceous ores decreased from 4,415,721 ounces in 1931 to 3,994,988 ounces in 1932, or 9.5 percent. The silver derived from base ores dropped from 25,440,907 to 18,744,681 ounces, or 26.3 percent.

Mine production of silver in the United States in 1932, by States, in fine ounces ¹

State	Placers	Dry and siliceous ore	Copper ore	Lead ore	Zinc ore	Copper-lead and copper-lead-zinc ores	Lead-zinc ore	Total
Alabama		10						10
Alaska	37,600	115,300	81,150					234,050
Arizona	454	86,384	1,862,366	133,509		110		2,082,823
California	16,600	361,441	28,726	86,760				493,533
Colorado	571	737,791	1,103,829	17,661		556		1,860,408
Georgia	19							30
Idaho	3,826	108,257	34	2,648,034		3,339,227	617,590	6,716,968
Illinois ²				257				257
Michigan			71,408					71,408
Missouri				1,128				1,128
Montana	422	81,518	1,574,071	16,084	3,025	5,629	5,464	1,686,213
Nevada	1,743	1,217,038	42,553	58,820		5,693		1,304,365
New Mexico	181	166,124		2,035		20,160	895,031	1,142,351
North Carolina		44	10,000					10,045
Oregon	2,245	4,098	2,170	14			89	8,616
Pennsylvania ²			830					830
South Carolina	1	4						5
South Dakota	85	126,110						126,195
Tennessee			19,300					19,300
Texas			826	596				1,422
Utah	14	912,488	324,693	1,951,098		195	3,773,609	6,962,097
Virginia		8						8
Washington	75	14,497		251			2,589	17,412
Wyoming	7	21		167				195
Value	63,844	3,931,144	5,180,776	4,894,938	3,025	3,371,570	5,294,372	22,739,669
Percentage	\$18,004	\$1,108,582	\$1,460,979	\$1,380,372	\$853	\$950,782	\$1,493,013	\$6,412,555
	0.28	17.29	22.73	21.53	0.01	14.83	23.28	100.00
1931: Total	46,521	4,369,200	9,573,651	6,114,975	6,023	2,791,101	6,955,157	29,856,628
Value	\$13,491	\$1,267,068	\$2,776,359	\$1,773,343	\$1,747	\$809,419	\$2,016,996	\$8,658,423
Percentage	0.16	14.63	32.07	20.48	0.02	9.35	23.29	100.00

¹ Philippine Islands and Puerto Rico excluded. The Bureau of Science, Manila, P.I., reports that bullion from gold lode mines of the Philippine Islands yielded 159,884 ounces of silver and placer bullion 300 ounces.

² From fluor spar-lead ores.

³ From pyritiferous magnetite ore.

Silver produced in the United States, by sources, as reported by mines, 1922-32, in fine ounces ¹

Year	Placers	Dry and siliceous ore	Copper ore	Lead ore	Zinc ore	Copper-lead and copper-lead-zinc ores	Lead-zinc ore	Total
1922-28	366,070	130,239,442	105,777,796	119,240,706	6,170,885	9,977,218	70,557,714	442,329,831
1929	45,125	11,107,873	17,948,845	11,699,491	1,576,715	2,336,912	15,645,050	60,860,011
1930	44,811	8,740,561	13,617,566	8,778,685	449,983	3,051,604	13,041,693	47,724,903
1931	46,521	4,369,200	9,573,651	6,114,975	6,023	2,791,101	6,955,157	29,856,628
1932	63,844	3,931,144	5,180,776	4,894,938	3,025	3,371,570	5,294,372	22,739,669

¹ Philippine Islands and Puerto Rico excluded.

PLACERS

The increase of about 17,300 ounces in recovery of silver from the refining of placer bullion reflects the large increase in gold from placer mining. Mines in Alaska, California, Idaho, and Oregon yielded 94 percent of the placer silver.

DRY AND SILICEOUS ORES

The largest decreases in silver from dry and siliceous ores were in Utah, Arizona, Nevada, Alaska, and California. States that made good increases in silver from this source in 1932 were Idaho, Colorado, Montana, South Dakota, New Mexico, and Washington.

COPPER ORE

Nearly all the silver produced from copper ore is obtained in the electrolytic refining of blister copper. The silver tenor of much of the copper ore, especially that of the Santa Rita district, New Mexico, of Bingham, Utah, and of Ely, Nev., is notably low. The yield of silver from copper ore in 1932 was about 4,392,900 ounces less than in 1931 and about 8,436,800 ounces less than in 1930. States with increases in 1932 were Michigan, Oregon, and Texas. Arizona, Colorado, Montana, and Utah yielded 94 percent of the silver from copper ore in 1932 but produced about 3,797,000 ounces less than in 1931; in some States the decrease was more than 50 percent.

LEAD ORE

Most of the silver from lead ore is obtained from desilverization of lead bullion from the smelting of western concentrates. The mine production of silver from argentiferous lead ore in 1932 was about 1,220,000 ounces less than in 1931 and 3,883,700 ounces less than in 1930. The largest increases in 1932 were in Arizona, Nevada, Texas, and Wyoming, and the notable decreases were in California, Idaho, and Utah. Idaho and Utah mines yielded 94 percent of the silver from lead ore in 1932.

LEAD-ZINC ORE

The output of silver from lead-zinc ores in 1932 was about 1,660,800 ounces less than in 1931. There was an unusual increase in New Mexico in 1932 and a decrease of less than 100,000 ounces in Utah. The largest decreases were in Nevada, Idaho, and Colorado.

ZINC AND MIXED ORES

None of the zinc ore treated in States east of Colorado yielded any gold or silver, and the mine production of silver from zinc material in 1932 was credited entirely to Montana and came from current slag fumed. Silver from copper-lead and copper-lead-zinc ores increased from 2,791,101 ounces in 1931 to 3,371,570 ounces in 1932, of which 3,339,227 ounces came from mines in Idaho where the output increased 667,320 ounces. The silver content of the copper-lead and copper-lead-zinc ores treated averaged 13.1 ounces to the ton in 1931 and 20.2 ounces in 1932.

GOLD AND SILVER, BY METHODS OF TREATMENT

The following table gives the production of gold and silver from ore, old tailings, etc., treated in 1931 and 1932:

Gold and silver produced in the United States from ore, old tailings, etc., in 1932, by States and by methods of recovery ¹

State	Total quantity of crude ore, old tailings, etc., treated (short tons)	Ore, old tailings, etc., to gold and silver mills				Ore and old tailings to concentrating mills (short tons)	Concentrates from all sources			Crude ore to smelters			Ore leached, old tailings and slag smelted, etc.		
		Ore (short tons)	Old tailings, etc. (short tons)	Gold (fine ounces)	Silver (fine ounces)		Short tons	Gold (fine ounces)	Silver (fine ounces)	Short tons	Gold (fine ounces)	Silver (fine ounces)	Short tons	Gold (fine ounces)	Silver (fine ounces)
Alaska.....	4, 124, 900	4, 064, 842		¹ 179, 982	² 32, 277	59, 123	12, 682	46, 320	157, 218	935	432	6, 955			
Arizona.....	4, 414, 579	25, 888	15, 065	8, 690	7, 981	3, 307, 224	200, 366	12, 772	478, 084	525, 179	41, 047	1, 586, 884	³ 3, 294	801	9, 420
California.....	1, 060, 361	⁴ 878, 074	37, 905	258, 620	76, 722	93, 561	14, 873	74, 171	261, 342	7, 397	5, 426	138, 444	⁵ 43, 424	420	425
Colorado.....	935, 895	653, 317	(⁶)	177, 842	44, 401	205, 875	16, 684	48, 592	630, 046	76, 703	88, 995	1, 185, 390			
Idaho.....	1, 032, 853	96, 434	225	16, 045	10, 532	922, 698	152, 785	17, 208	6, 381, 167	12, 969	700	320, 915	527	493	528
Montana.....	765, 014	50, 379	2, 044	12, 586	11, 906	640, 424	140, 583	10, 085	1, 522, 610	36, 555	13, 445	137, 434	35, 612	949	13, 841
Nevada.....	1, 855, 031	157, 638	289, 190	73, 779	583, 050	1, 353, 455	59, 171	16, 336	49, 201	51, 194	33, 357	638, 567	3, 554	840	31, 804
New Mexico.....	1, 464, 718	1, 155		556	601	1, 438, 676	120, 867	18, 557	1, 051, 965	24, 887	2, 825	89, 604			
Oregon.....	5, 195	3, 275		2, 324	1, 267	1, 445	75	390	1, 117	475	945	3, 987			
South Dakota.....	1, 409, 893	1, 402, 275	(⁷)	479, 199	122, 805	7, 600	53	28	3, 288	18	15	17			
Texas.....	185									185	9	1, 422			
Utah.....	3, 768, 542	900		125	24	3, 561, 125	280, 982	62, 830	4, 369, 490	206, 472	71, 890	2, 591, 267	45	259	1, 302
Washington.....	42, 272	3, 327		1, 804	281	33, 423	5, 027	26	2, 616	5, 484	2, 779	14, 302	38	86	138
Wyoming.....	640	615		176	21					25	1	167			
Eastern States.....	⁸ 313, 396	1, 995		459	77	⁹ 179, 921	⁹ 11, 369	160	10, 330	131, 480	211	19, 800			
Total, 1931.....	21, 193, 474 41, 985, 920	7, 340, 114 7, 322, 067	344, 429 301, 811	1, 212, 187 1, 127, 010	891, 945 1, 403, 368	11, 804, 550 29, 831, 301	1, 015, 517 2, 030, 003	307, 475 394, 172	14, 918, 474 19, 843, 565	1, 079, 958 1, 974, 457	262, 077 247, 474	6, 735, 155 8, 422, 211	¹⁰ 86, 494 ¹⁰ 144, 330	3, 845 3, 211	57, 458 98, 226

GOLD AND SILVER

475

¹ Illinois, Michigan, Missouri, Philippine Islands, and Puerto Rico excluded.

² Exclusive of bullion from 2,357 tons of concentrates amalgamated, which is included under "Concentrates from all sources."

³ Exclusive of 537,929 tons of ore leached, containing no gold or silver.

⁴ Also 7,541 tons of concentrates from ore first treated in gold and silver mills and 726 tons from ore treated in concentrating mills were cyanided. The figures are included under "Concentrates from all sources."

⁵ Includes 43,278 tons of pyrites roasted for the manufacture of sulphuric acid; residue leached amounted to 30,387 tons.

⁶ Sands and slimes (288,806 tons) from ore and concentrates first treated by amalgamation were cyanided.

⁷ Sands and slimes (1,396,330 tons) from ore first treated by amalgamation were cyanided.

⁸ Includes low-grade pyritiferous magnetite ore from Pennsylvania; excludes ore containing no gold or silver.

⁹ Includes only ore or concentrates yielding gold and silver.

¹⁰ Exclusive of ore leached, containing no gold or silver, as follows: 1932, 537,929 tons; 1931, 2,411,954 tons.

Many gold and silver mills employ concentrating apparatus, and in the preceding table the concentrates obtained are combined with those from straight concentrating mills under the heading "Concentrates from all sources." The gold and silver included in this item are recovered partly by amalgamation (particularly in Alaska and California) and cyanidation, although most of the concentrates are smelted.

The figures for the quantity of ore treated by concentration include the large quantities of copper, lead, zinc, and mixed ores whose concentrates are smelted primarily for these metals, the gold and silver being recovered in refining the copper and lead bullion and smelting the zinc residues. The quantity of concentrates produced and the recoverable gold and silver content represent not only the concentrates from these straight concentrating mills but also the comparatively small quantity from gold and silver mills.

The States that increased substantially the ore, old tailings, etc., sent direct to gold and silver mills in 1932 were California, Idaho, Colorado, and Montana; those with notable decreases were Alaska, Arizona, and Oregon. The increase in 1932 in gold recovered at gold and silver mills was large. The only States with much decrease in output were Arizona, Nevada, and Oregon. The largest increases were in South Dakota, Colorado, California, Idaho, and Montana.

The quantity of ore and old tailings sent direct to concentrating plants decreased 60 percent in 1932. Oregon and South Dakota had small increases, but all other States had decreases. Some of the large decreases, due to the much smaller quantities of base ores concentrated, follow: Arizona, 6,777,339 tons; California, 507,096 tons; Idaho, 332,310 tons; Montana, 1,258,353 tons; Nevada, 1,683,044 tons; New Mexico, 1,446,234 tons; and Utah, 5,099,158 tons.

In 1932, 10.9 tons of ore were concentrated for every ton of crude ore shipped direct to smelters compared with 15.1 tons in 1931. In 1919 the ratio was only 5.6:1.

The figures for the quantity and the recoverable gold and silver content of crude ore shipped from the mines direct to the smelters include, in general, the richer gold, silver, copper, and lead ores from which the gold and silver are eventually recovered by refining the copper or lead bullion that collects the precious metals in the smelting. About 45 percent less crude ore was smelted in 1932 than in 1931. Arizona mines contributed nearly half the total, but 54 percent less than in 1931. Although Colorado shipped to smelters only about one seventh as much crude ore as Arizona, the Colorado ore yielded more than twice as much gold as that from Arizona. Utah, with 71,890 ounces in 1932 and 93,782 ounces in 1931, was the largest producer in both years of gold from crude ore smelted. The chief decreases in 1932 in silver from crude ore smelted were Arizona, 665,679 ounces; Utah, 424,135 ounces; Colorado, 324,682 ounces; Idaho, 198,105 ounces; and New Mexico, 112,620 ounces. Nevada made the only large increase in silver from crude ore smelted.

In Arizona 537,929 tons of ore leached in 1932 yielded no gold or silver. In California 43,278 short tons of pyrites roasted for sulphuric acid yielded 49 ounces of silver.

The old materials, mainly tailings and slag, re-treated (with which are included figures for ore and old tailings leached) are partly smelted, often for their fluxing as well as their metal value. Most of the gold and silver derived from old tailings is included under recoveries by amalgamation and cyanidation at gold and silver mills.

Gold and silver produced at mills in the United States and percentage of gold and silver recovered by smelting and from placers, 1928-32¹

Year	Ore, old tailings, etc., treated (short tons)	Bullion recovered from all sources (fina ounces)				Percent of gold and silver from all sources							
		Amalgamation		Cyanidation		Amalgamation		Cyanidation		Placers		Smelting ²	
		Gold	Silver	Gold	Silver	Gold	Silver	Gold	Silver	Gold	Silver	Gold	Silver
1928---	7,242,870	675,222	211,633	374,900	4,256,994	31.4	6.4	17.5	7.4	19.4	0.1	31.7	92.1
1929---	6,907,140	619,776	218,642	324,819	3,229,296	30.1	.4	15.8	5.3	19.8	.1	34.3	94.2
1930---	7,079,131	700,318	230,406	380,148	2,728,841	33.2	.5	17.9	5.7	20.6	.1	28.4	92.7
1931---	7,623,878	806,317	274,850	396,390	1,294,866	36.2	.9	17.8	4.2	20.4	.2	25.6	94.7
1932---	7,684,543	851,391	260,447	434,869	753,228	36.5	1.1	18.7	3.3	23.4	.3	21.4	95.3

¹ Philippine Islands and Puerto Rico excluded.

² Both crude ores and concentrates.

The bulk of the gold continues to come from the gold mills, but the proportion so recovered was only 55.2 percent of the total in 1932 compared with 60 percent in 1919.

The total yield of gold by amalgamation in the United States (Philippine Islands and Puerto Rico excluded) as reported to the Bureau of Mines was 851,391 ounces in 1932 compared with 1,120,344 ounces in 1911, the first year for which figures are available.

The output of gold by cyanidation was 434,869 ounces in 1932 compared with 1,444,077 ounces in 1915, the year of largest recorded output. Thus, the quantity of gold recovered by cyanidation has decreased at a much higher rate than that by amalgamation.

In 1932 gold and silver valued together at \$17,673,260 were produced by amalgamation compared with \$9,201,950 by cyanidation.

Gold and silver bullion produced at mills in the United States in 1932, by States ¹

State	Ore, old tailings, etc., treated (short tons)	Bullion recovered from all sources (fine ounces)				Percent of gold and silver from all sources in State			
		Amalgamation		Cyanidation		Amalgamation		Cyanidation	
		Gold	Silver	Gold	Silver	Gold	Silver	Gold	Silver
Alaska.....	4,064,842	² 200,809	² 106,847	11,368	1,000	40.7	45.7	2.3	0.4
Arizona.....	40,953	3,190	1,069	5,500	6,912	4.8	.05	8.2	.3
California.....	915,979	224,054	41,720	³ 76,444	³ 81,162	39.4	8.5	13.4	16.4
Colorado.....	⁴ 653,317	66,319	9,337	111,523	35,064	20.9	.5	35.1	1.9
Idaho.....	96,659	14,325	9,501	1,720	1,031	30.6	.14	3.7	-----
Montana.....	52,423	5,378	4,254	7,208	7,652	13.2	.3	17.8	.5
Nevada.....	446,828	21,372	13,216	52,407	569,834	16.5	1.0	40.4	43.7
New Mexico.....	1,155	524	204	32	397	2.26	.02	.14	.03
Oregon.....	3,275	2,324	1,267	-----	-----	11.7	14.7	-----	-----
South Dakota.....	⁵ 1,402,275	310,638	72,639	168,561	50,166	64.7	57.6	35.1	39.8
Utah.....	900	125	24	-----	-----	.1	-----	-----	-----
Washington.....	3,327	1,804	281	-----	-----	35.5	1.6	-----	-----
Wyoming.....	615	139	21	37	-----	54.1	10.8	14.4	-----
Eastern States.....	1,995	390	67	69	10	36.9	.2	6.5	.03
	7,684,543	851,391	260,447	434,869	753,228	36.5	1.1	18.7	3.3
Value.....	-----	\$17,599,314	\$73,446	\$8,989,540	\$212,410	-----	-----	-----	-----
1931: Total.....	7,623,878	806,317	274,850	396,390	1,254,866	36.2	.9	17.8	4.2
Value.....	-----	\$16,668,052	\$79,707	\$8,194,109	\$363,911	-----	-----	-----	-----

¹ Philippine Islands and Puerto Rico excluded.² Includes bullion from 2,357 tons of concentrates amalgamated.³ Includes bullion from 8,267 tons of concentrates cyanided.⁴ Also 283,806 tons of sands and slimes from ore and concentrates first treated by amalgamation were cyanided.⁵ Also 1,396,330 tons of sands and slimes from ore first treated by amalgamation were cyanided.

The largest increases in 1932 in gold recovered by amalgamation were: South Dakota, 22,482 ounces; Colorado, 13,946 ounces; California, 10,540 ounces; Idaho, 4,690 ounces; Nevada, 4,686 ounces; and Montana, 3,591 ounces; the smaller increases were in Arizona, Washington, New Mexico, Eastern States, Wyoming, and Utah. The decreases were in Alaska and Oregon.

The total increase in 1932 in gold recovered by cyanidation was due mainly to the following State increases: South Dakota (24,738 ounces), California (23,020 ounces), Colorado (21,766 ounces), and Alaska (8,908 ounces). The notable decreases were 28,404 ounces in Arizona and 15,662 ounces in Nevada.

The recovery of silver by amalgamation is relatively small, and there was no abnormal change in 1932.

The recovery of silver by cyanidation decreased nearly 502,000 ounces in 1932, following a decrease of about 1,474,000 ounces in 1931. Most of the decrease in 1932 was at Nevada mines, where the recovery was only 569,834 ounces compared with 1,110,948 ounces in 1931.

Some lead concentrates made in Alaska are first amalgamated to save the gold before the concentrates are shipped to a smelter. A small quantity of concentrates from gold and silver mills is cyanided.

REVIEW BY STATES

The usual review by States has been omitted from this report. The chapters relating to mine production of gold, silver, copper, lead, and zinc in the Eastern, Central, and Western States give details of mining, milling, and smelting operations.

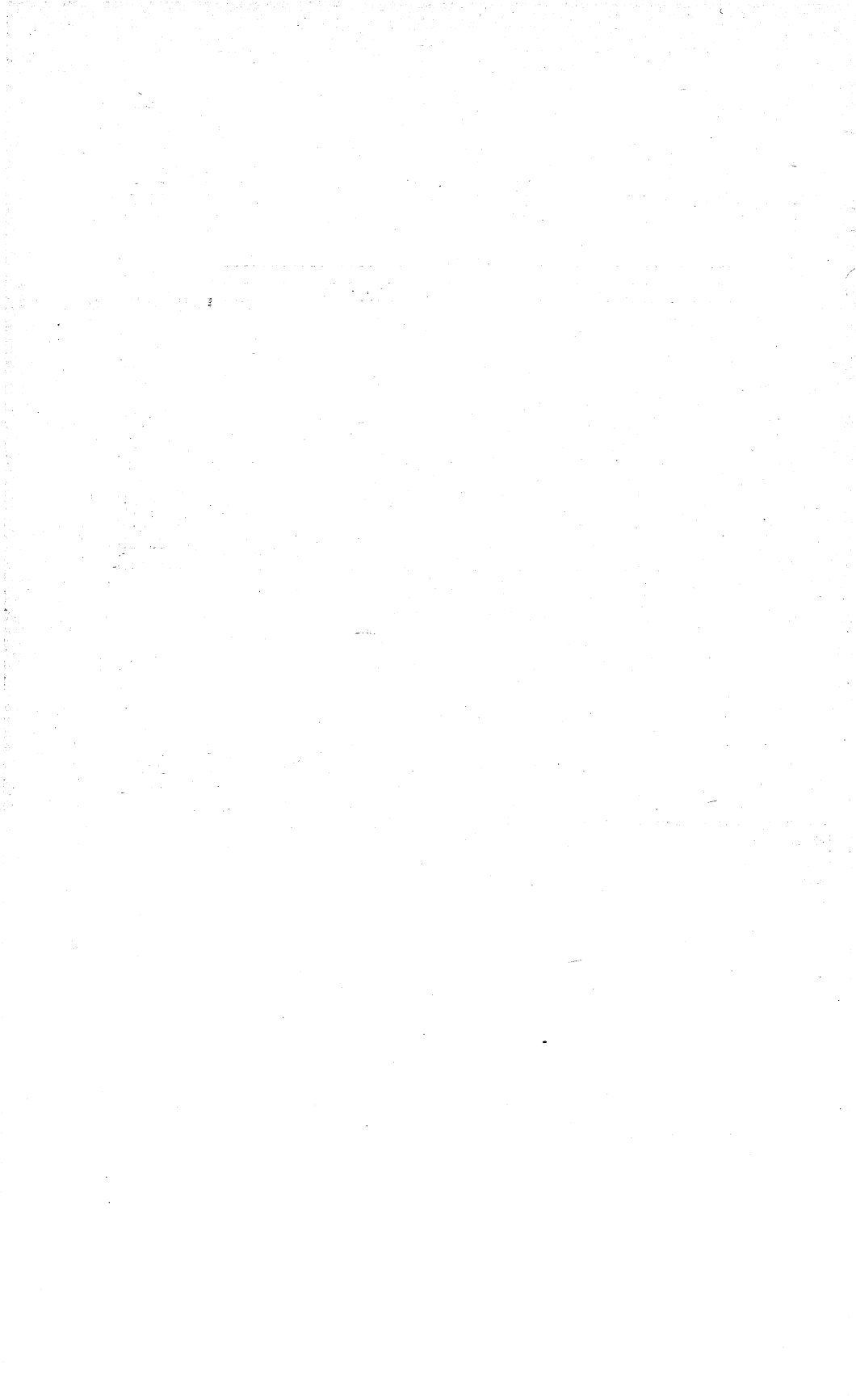
PHILIPPINE ISLANDS

The output of gold in the Philippine Islands from 1907 to 1932, inclusive, is recorded as \$41,112,512. Production during the last 10 years follows:

1923-----	\$1,686,327	1928-----	\$1,904,062
1924-----	1,651,796	1929-----	3,320,300
1925-----	1,945,990	1930-----	3,704,800
1926-----	1,925,188	1931-----	3,762,433
1927-----	1,686,231	1932-----	5,050,084

ACKNOWLEDGMENTS

Acknowledgment is made to those engaged in the mining and metallurgic industries; to merchants, bankers, and transportation officials of the United States and Alaska; and to the Bureau of the Mint, the Bureau of Science, Manila, P.I., and other officials, public and private, who have cooperated with the Bureau of Mines by furnishing information on the production of gold and silver. The writer is especially indebted to the authors of the mine reports on the production of gold, silver, copper, lead, and zinc in the Western States.



CEMENT

(DETAILED STATISTICS)

By B. W. BAGLEY

GENERAL REVIEW

Early in January 1933 the Bureau of Mines published a summary of the monthly estimates of output of portland cement in 1932, compiled from the monthly reports of producers. These preliminary figures, which indicated a production of about 76,509,000 barrels and shipments of about 80,579,000 barrels, were each within 0.3 percent of the final figures for the year. The production of portland cement in 1932—76,740,945 barrels—decreased 39 percent compared with 1931. Each year beginning with 1929, when the first decrease since 1921 was recorded, the output has declined.

Shipments from the mills in 1932 amounted to 80,843,187 barrels, valued at \$82,021,723, decreases from the preceding year of 36 percent in quantity and of nearly 42 percent in gross value. The average factory value per barrel, in bulk, was \$1.01 in 1932, 10 cents less per barrel than in 1931.

The stocks of finished portland cement at the mills totaled 20,240,204 barrels on December 31, 1932, a decrease of 17 percent from those at the end of 1931. According to manufacturers' estimates, 5,995,600 barrels of clinker or unground cement were also on hand at the mills at the end of 1932 compared with 7,035,000 barrels at the end of 1931.

The monthly average for finished cement stocks was 22,648,000 barrels and for the clinker stocks 8,058,000 barrels in 1932 compared with 26,126,000 barrels and 9,941,000 barrels, respectively, in 1931.

Production and shipments of natural and puzzolan cements, including masonry cements of the natural-cement class, also fell in 1932; the output declined more than 63 percent and shipments more than 57 percent below those in 1931.

CHIEF HYDRAULIC CEMENTS

The accompanying table gives statistics of output of portland and other (natural and puzzolan) hydraulic cements from 1928 to 1932. The quantity of these cements produced in the United States in 1932 was over 39 percent less than in 1931; shipments from the mills in 1932 dropped more than 36 percent in quantity and 42 percent in value.

Statistics of the output of alumina cement, representing the operations of only one manufacturer in the United States, are not included in this or other tables of this report.

Principal hydraulic cements produced and shipped in the United States, 1928-32

Year	Number of active plants	Production				
		Portland cement (barrels)	Masonry, natural, and puzzolan cements		Total	
			Number of active plants	Barrels	Number of active plants	Barrels
1928.....	156	176,298,846	11	2,210,404	167	178,509,250
1929.....	163	170,646,036	11	2,209,465	174	172,855,501
1930.....	163	161,197,228	11	1,792,083	174	162,989,311
1931.....	160	125,429,071	12	1,241,803	172	126,670,874
1932.....	160	76,740,945	15	456,785	175	77,197,730

Year	Shipments					
	Portland cement		Masonry, natural, and puzzolan cements		Total	
	Barrels	Value	Barrels	Value	Barrels	Value
1928.....	175,838,332	\$275,972,945	2,213,645	\$2,910,097	178,051,977	\$278,883,042
1929.....	169,868,322	252,153,789	2,159,130	2,950,717	172,027,452	255,104,506
1930.....	159,059,334	228,779,756	1,787,016	2,469,531	160,846,350	231,249,287
1931.....	127,150,534	140,959,906	1,226,850	1,619,920	128,377,384	142,579,826
1932.....	80,843,187	82,021,723	524,844	696,474	81,368,031	82,718,197

HYDRAULIC CEMENT PLANTS

Many requests for general information on the location of the plants manufacturing hydraulic cement have been received by the Bureau of Mines. To supply this information the following list has been prepared, arranged alphabetically by States and location of plants, with the trade name of the cement reported by the producer.

PORTLAND CEMENT

Alabama:	Trade name
Leeds—Universal Atlas Cement Co., Chicago, Ill..	Universal Atlas.
North Birmingham:	
Lehigh Portland Cement Co., Allentown, Pa..	Lehigh.
Lone Star Cement Co. Alabama, Birmingham..	Lone Star.
Phoenixville—Alpha Portland Cement Co., Birmingham.....	Alpha and Phoenix.
Ragland—National Cement Co., Birmingham.....	Coosa.
Spocari—Lone Star Cement Co. Alabama, Birmingham.....	Incor.
Arkansas:	
Foreman—American Portland Cement Co., Little Rock, and New York, N.Y. (partly completed).....	-----
Okay—Arkansas Portland Cement Co., Denver, Colo.....	OK.
California:	
Chubbuck—National Portland Cement Co., Dallas, Tex.....	Crystalite.
Colton—California Portland Cement Co., Los Angeles.....	Colton.
Cowell—Cowell Portland Cement Co., Cowell.....	Celite, Mt. Diablo, and Pantheon.
Crestmore—Riverside Cement Co., Los Angeles....	Plastic and Riverside.

PORTLAND CEMENT—Continued

	Trade name
California—Continued.	
Davenport—Santa Cruz Portland Cement Co., San Francisco-----	Santa Cruz.
Los Angeles—Blue Diamond Corporation (Ltd.), Los Angeles-----	Blue Diamond.
Merced—Yosemite Portland Cement Corporation, Merced-----	Yosemite and "One- day".
Monolith—Monolith Portland Cement Co., Mono- lith-----	Monolith.
Oro Grande—Riverside Cement Co., Los Angeles-----	Riverside.
Redwood City—Pacific Portland Cement Co., San Francisco-----	Golden Gate and Old Mission.
San Andreas—Calaveras Cement Co., San Fran- cisco-----	Calaveras and Calave- ras Plastic Early Har- dening.
San Juan Bautista—Pacific Portland Cement Co., San Francisco-----	Old Mission.
Victorville—Southwestern Portland Cement Co., Los Angeles-----	Victor.
Colorado:	
Boettcher—Colorado Portland Cement Co., Den- ver-----	Ideal.
Concrete—United States Portland Cement Co., Denver-----	Concrete.
Portland—Colorado Portland Cement Co., Denver-----	Ideal.
Florida: Hookers Point (near Tampa)—Florida Por- tland Cement Co., Tampa-----	Florida.
Georgia:	
Clinchfield—Pennsylvania-Dixie Cement Corpora- tion, Chattanooga, Tenn-----	Clinchfield and Penn- Dixie.
Portland—Georgia Cement & Products Co., Bir- mingham, Ala-----	Piedmont.
Rockmart—Southern States Portland Cement Co., Rockmart-----	Southern States.
Idaho: Inkom—Idaho Portland Cement Co., Inkom-----	Eagle.
Illinois:	
Dixon—Medusa Portland Cement Co., Cleveland, Ohio-----	Medusa and Medusa Mix.
La Salle:	
Alpha Portland Cement Co., Easton, Pa-----	Alpha and Alpha Mor- tar.
Marquette Cement Manufacturing Co., Chi- cago-----	Marquette and Super.
Oglesby—Lehigh Portland Cement Co., Allen- town, Pa-----	Lehigh.
Indiana:	
Buffington—Universal Atlas Cement Co., Chicago, Ill-----	Universal Atlas.
Limedale—Lone Star Cement Co., Indiana (Inc.), Indianapolis-----	Incor and Lone Star.
Mitchell—Lehigh Portland Cement Co., Allen- town, Pa-----	Lehigh.
Speed—Louisville Cement Co., Louisville, Ky. (also masonry and natural cements)-----	Speed.
Stroh—Wabash Portland Cement Co., Detroit, Mich-----	Wabash.

PORTLAND CEMENT—Continued

Iowa:	Trade name
Davenport—Dewey Portland Cement Co., Kansas City, Mo.....	Dewey.
Des Moines—Hawkeye Portland Cement Co., Des Moines.....	Hawkeye and High-early-strength Supreme Portland cement.
Gilmore City—Northwestern States Portland Cement Co., Mason City.....	Northwestern.
Mason City:	
Lehigh Portland Cement Co., Allentown, Pa.....	Lehigh.
Northwestern States Portland Cement Co., Mason City.....	Northwestern.
Valley Junction—Pennsylvania-Dixie Cement Corporation, Des Moines.....	Penn-Dixie.
Kansas:	
Bonner Springs—Lone Star Cement Co. Kansas, Kansas City, Mo.....	Lone Star and Incor.
Chanute—Ash Grove Lime & Portland Cement Co., Kansas City, Mo.....	Ash Grove.
Fredonia—Consolidated Cement Corporation, Kansas City, Mo.....	Fredonia, Victor, and Samson Mortar.
Humboldt—Monarch Cement Co., Humboldt.....	Monarch.
Independence—Universal Atlas Cement Co., Chicago, Ill.....	Universal Atlas.
Iola—Lehigh Portland Cement Co., Allentown, Pa.....	Lehigh.
Mildred—Consolidated Cement Corporation, Kansas City, Mo.....	Victor.
Kentucky: Kosmosdale—Kosmos Portland Cement Co. (Inc.), Louisville (also masonry and natural cements).....	Kosmos.
Louisiana: New Orleans—Lone Star Cement Co. Louisiana, New Orleans.....	Lone Star.
Maine: Thomaston—Lawrence Portland Cement Co., New York, N.Y.....	Dragon.
Maryland:	
Security—North American Cement Corporation, Hagerstown.....	Acme, Blue Band, Helderberg, and Security.
Union Bridge—Lehigh Portland Cement Co., Allentown, Pa.....	Lehigh.
Michigan:	
Alpena—Huron Portland Cement Co., Detroit.....	Huron.
Bay City—Aetna Portland Cement Co., Detroit.....	Aetna.
Bellevue—Alpha Portland Cement Co., Easton, Pa.....	Alpha.
Cement City—Consolidated Cement Corporation, Cement City.....	Peninsular.
Coldwater—Wolverine Portland Cement Co., Coldwater.....	Wolverine.
Dearborn—Ford Motor Co., Dearborn.....	Ford.
Detroit—Peerless Cement Corporation, Detroit.....	Peerless, Mortar, and Super.
Fenton—Aetna Portland Cement Co., Detroit.....	Aetna.
Four Mile Lake—Michigan State Cement Industry, Chelsea.....	Michigan State.
Newaygo—Medusa Portland Cement Co. (Newaygo Portland Cement Co.), Cleveland, Ohio.....	Newaygo.
Potoskey—Potoskey Portland Cement Co., Potoskey.....	Potoskey.
Port Huron—Peerless Cement Corporation, Detroit.....	Peerless and Super.

PORTLAND CEMENT—Continued

	Trade name
Michigan—Continued.	
Quincy—Wolverine Portland Cement Co., Cold-water.....	Wolverine.
Wyandotte—Huron Portland Cement Co., Detroit.....	Wyandotte.
Minnesota: Duluth—Universal Atlas Cement Co., Chicago, Ill.....	Universal Atlas.
Missouri:	
Cape Girardeau—Marquette Cement Manufacturing Co., Chicago, Ill.....	Marquette and Super.
Hannibal—Universal Atlas Cement Co., Chicago, Ill.....	Universal Atlas.
Prospect Hill—Missouri Portland Cement Co., St. Louis.....	Prestolith Velo and Red Ring.
St. Louis—Alpha Portland Cement Co., Easton, Pa.....	Alpha.
Sugar Creek—Missouri Portland Cement Co., St. Louis.....	Red Ring.
Montana:	
Hanover—Three Forks Portland Cement Co., Denver, Colo.....	Red Devil.
Trident—Three Forks Portland Cement Co., Denver, Colo.....	Do.
Nebraska:	
Louisville—Ash Grove Lime & Portland Cement Co., Kansas City, Mo.....	Ash Grove.
Superior—Nebraska Cement Co., Denver, Colo.....	Ideal and Superior.
New Jersey:	
Stewartsville—Edison Cement Corporation, Orange.....	Edison.
Vulcanite—Vulcanite Portland Cement Co., Philadelphia, Pa.....	Vulcanite and Vulcanite Super.
New York:	
Alsen:	
Lehigh Portland Cement Co., Allentown, Pa.....	Lehigh.
North American Cement Corporation, Albany.....	Acme, Blue Band, Helderberg, High-early strength, and Security.
Buffalo:	
Federal Portland Cement Co., Youngstown, Ohio.....	Bessemer, Mortar, and Super.
Great Lakes Portland Cement Corporation, Buffalo.....	Lehigh.
Cementon—Alpha Portland Cement Co., Easton, Pa.....	Alpha.
Glens Falls—Glens Falls Portland Cement Co., Glens Falls.....	Iron Clad and Velo.
Howes Cave—North American Cement Corporation, Albany.....	Acme, Blue Band, Helderberg, and Security.
Hudson:	
Lone Star Cement Co., New York (Inc.), Albany.....	Lone Star.
Universal Atlas Cement Co., Chicago, Ill.....	Universal Atlas.
Jamesville—Alpha Portland Cement Co., Easton, Pa.....	Alpha.
Portland Point—Pennsylvania-Dixie Cement Corporation, Nazareth, Pa.....	Dexter, Penn-Dixie, and Pennsylvania.
Ohio:	
Baybridge—Medusa Portland Cement Co., Cleveland.....	Medusa.
Castalia—Castalia Portland Cement Co., Pittsburgh, Pa.....	Castalia.

PORTLAND CEMENT—Continued

	Trade name
Ohio—Continued.	
Fairport—Standard Portland Cement Co., Painesville.....	Standard.
Fultonham—Pittsburgh Plate Glass Co., Zanesville.....	Columbia.
Ironton—Alpha Portland Cement Co., Easton, Pa.....	Alpha.
Middlebranch—Diamond Cement Co., Middlebranch.....	Diamond.
Osborn:	
Southwestern Portland Cement Co., Osborn.....	Akcello, Hydroplastic, Miami, and Rich-mortar.
Wabash Portland Cement Co., Detroit, Mich.....	Wabash.
Silica—Medusa Portland Cement Co., Cleveland.....	Medusa and "T.R." cement.
Superior—Wellston Iron Furnace Co., Jackson (also puzzolan cement).....	Superior.
Oklahoma:	
Ada—Oklahoma Portland Cement Co., Denver, Colo.....	OK.
Dewey—Dewey Portland Cement Co., Kansas City, Mo.....	Dewey and Super.
Oregon:	
Gold Hill—Beaver Portland Cement Co., Portland.....	Beaver and Beaver Special.
Lime—Oregon Portland Cement Co., Portland.....	Sun.
Oswego—Oregon Portland Cement Co., Portland.....	Oregon.
Pennsylvania:	
Bath:	
Keystone Portland Cement Co., Philadelphia.....	Keystone and Velroca.
Lehigh Portland Cement Co., Allentown.....	Lehigh.
Pennsylvania-Dixie Cement Corporation, Nazareth.....	Dexter, Penn-Dixie, and Pennsylvania.
Bessemer—Bessemer Limestone & Cement Co., Youngstown, Ohio (also puzzolan cement).....	Bessemer, Mortar, and Super.
Brodhead—National Portland Cement Co., Philadelphia (under construction).....	-----
Cementon—Whitehall Cement Manufacturing Co., Philadelphia.....	Whitehall.
Conshohocken—Valley Forge Cement Co., Cata-sauqua.....	Allentown.
Coplay—Coplay Cement Manufacturing Co., Coplay.....	Saylor.
Egypt—Giant Portland Cement Co., Philadelphia.....	Giant.
Evansville—Allentown Portland Cement Co., Cata-sauqua.....	Allentown.
Fogelsville—Lehigh Portland Cement Co., Allentown.....	Lehigh.
Martins Creek—Alpha Portland Cement Co., Easton.....	Alpha and Alpha Mortar.
Nazareth:	
Lone Star Cement Co., Pennsylvania, Philadelphia.....	Incor and Lone Star.
Nazareth Cement Co., Nazareth.....	Nazareth and Nazco.
Pennsylvania-Dixie Cement Corporation, Nazareth.....	Dexter, Penn-Dixie, and Pennsylvania.
Neville Island—Green Bag Cement Co. of Pa., Pittsburgh.....	Green Bag.
New Castle—Lehigh Portland Cement Co., Allentown.....	Lehigh.
Northampton—Universal Atlas Cement Co., Chicago, Ill.....	Universal Atlas and Universal Atlas White.
Ormrod—Lehigh Portland Cement Co., Allentown.....	Lehigh.

PORTLAND CEMENT—Continued

	Trade name
Pennsylvania—Continued.	
Penn-Allen—Pennsylvania-Dixie Cement Corporation, Nazareth.....	Dexter, Penn-Dixie, and Pennsylvania.
Sandts Eddy—Lehigh Portland Cement Co., Allentown.....	Lehigh.
Siegfried—Lawrence Portland Cement Co., New York, N. Y. (also masonry and natural cements).....	Dragon, Dragon Super, Special Mix, and Strongfast.
Stockertown—Hercules Cement Corporation, Philadelphia.....	Hercules and Trowlite.
Universal—Universal Atlas Cement Co., Chicago, Ill.....	Universal Atlas.
Wampum—Medusa Portland Cement Co. (Crescent Portland Cement Co.), Cleveland, Ohio.....	Crescent and Medusa Mix.
West Coplay—Lehigh Portland Cement Co., Allentown.....	Lehigh.
West Winfield—West Penn Cement Co., Butler.....	West Penn.
York—Medusa Portland Cement Co., Cleveland, Ohio.....	Medusa, Medusa White, Medusa Stoneset, and "T.R." cement.
South Dakota: Rapid City—South Dakota Cement Plant, Rapid City.....	Dacotah.
Tennessee:	
Caswell—Volunteer Portland Cement Co., Knoxville.....	Volunteer.
Chattanooga—Signal Mountain Portland Cement Co., Chattanooga.....	Signal Mountain.
Cowan—Cumberland Portland Cement Co., Cowan.....	Cumberland and Cumberlandite Masonry.
Kingsport—Pennsylvania-Dixie Cement Corporation, Chattanooga.....	Clinchfield and Penn-Dixie.
Nashville—Hermitage Portland Cement Co., Nashville.....	Hermitage and Hermitage Masonry.
Richard City—Pennsylvania-Dixie Cement Corporation, Chattanooga.....	Clinchfield, Penn-Dixie, and Royal.
Texas:	
Cement City—Lone Star Cement Co. Texas, Dallas.....	Incor and Lone Star.
Cementville—San Antonio Portland Cement Co., San Antonio.....	Alamo.
Eagle Ford—Trinity Portland Cement Co., Dallas.....	Trinity and Trinity Mix Mortar.
El Paso—Southwestern Portland Cement Co., El Paso.....	El Toro and Richmortar Masonry.
Fort Worth—Trinity Portland Cement Co., Dallas.....	Trinity.
Houston—Trinity Portland Cement Co., Dallas.....	Do.
Longhorn—Republic Portland Cement Co., San Antonio.....	Longhorn.
Manchester—Lone Star Cement Co. Texas, Dallas.....	Lone Star.
Waco—Universal Atlas Cement Co., Chicago, Ill.....	Universal Atlas.
Utah:	
Bakers—Western Portland Cement Co., Ogden.....	Beehive.
Devils Slide—Union Portland Cement Co., Denver, Colo.....	Red Devil.
Salt Lake City—Portland Cement Co. of Utah, Salt Lake City.....	Utah.

PORTLAND CEMENT—Continued

	Trade name
Virginia:	
Fordwick—Lehigh Portland Cement Co., Allentown, Pa.-----	Lehigh.
Norfolk—Lone Star Cement Co. Virginia (Inc.), Norfolk-----	Lone Star.
Washington:	
Bellingham—Olympic Portland Cement Co. (Ltd.), Seattle-----	Olympic and Velo.
Concrete—Superior Portland Cement (Inc.), Seattle-----	Superior and Superior Hyurly.
Grotto—Northwestern Portland Cement Co., Grotto-----	Northwestern.
Irvin—Spokane Portland Cement Co., Spokane-----	Spokane.
Metaline Falls—Lehigh Portland Cement Co., Allentown, Pa.-----	Lehigh.
Seattle—Superior Portland Cement (Inc.), Seattle-----	Diamond and High-early-strength Double Diamond.
West Virginia:	
Kenova—Green Bag Cement Co. of W.Va., Kenova (also puzzolan cement)-----	Green Bag.
Manheim—Alpha Portland Cement Co., Easton, Pa.-----	Alpha.
Martinsburg—Standard Lime & Stone Co., Baltimore, Md.-----	Capitol.
Wisconsin: Manitowoc—Medusa Portland Cement Co. (Manitowoc Portland Cement Co.), Cleveland, Ohio.-----	Badger State and "T.R." cement.
Wyoming: Laramie—Monolith-Portland Midwest Co., Monolith, Calif.-----	Monolith.

NATURAL CEMENTS AND MASONRY CEMENTS OF THE NATURAL-CEMENT CLASS

	Trade name
Illinois: Utica—Utica Hydraulic Cement Co., Utica-----	Utica.
Indiana: Speed—Louisville Cement Co., Louisville, Ky. (also portland cement)-----	Brixment and Star.
Kansas: Fort Scott—Fort Scott Hydraulic Cement Co., Fort Scott-----	Fort Scott Hydraulic.
Kentucky: Kosmosdale—Kosmos Portland Cement Co. (Inc.), Louisville (also portland cement)-----	Kosmortar.
Minnesota:	
Austin—Austin Cement Works, Mankato-----	Austin Bricklayer.
Carney—Carney Co., Mankato-----	Carney.
Mankato—Carney Co., Mankato-----	Do.
New York:	
Brixment—Louisville Cement Co., Louisville, Ky.-----	Brixment.
Rosendale—Century Cement Corporation, Rosendale-----	Century.
Tilson—A. J. Snyder & Co., Tilson-----	Brikmix and Rosendale Natural.
Ohio: Lisbon (near)—Lisbon Cement Co., Lisbon-----	Lisbon Special Safe Cement.
Pennsylvania: Siegfried—Lawrence Portland Cement Co., New York, N.Y. (also portland cement)-----	Hy-Test Mason's.
Virginia: Riverton—Riverton Lime Co., Riverton-----	Flamingo.
Wisconsin: Sherwood—Western Lime & Cement Co., Milwaukee-----	Mortarite.

PUZZOLAN CEMENT

	Trade name
Alabama:	
Graystone—Cheney Lime & Cement Co., Birmingham-----	Vesuvius nonstaining.
North Birmingham—Southern Cement Co., Birmingham-----	Magnolia.

PUZZOLAN CEMENT—Continued

	Trade name
Ohio: Superior—Superior Cement Corporation, Portsmouth (also portland cement)-----	Wifco.
Pennsylvania: Bessemer—Bessemer Limestone & Cement Co., Youngstown, Ohio (also portland cement)-----	Bessemer Stainless.
West Virginia: Kenova—Green Bag Cement Co. of W.Va., Kenova (also portland cement)-----	Green Bag Nonstaining Waterproofed Masonry Cement.

ALUMINA CEMENT

	Trade name
California: San Pedro—American Aluminous Cement Co., San Francisco-----	-----
Missouri: Hannibal—Atlas Lumnite Cement Co., Chicago, Ill.-----	Atlas Lumnite.
Pennsylvania: Northampton—Atlas Lumnite Cement Co., Chicago, Ill.-----	Do.

PORTLAND CEMENT

PRODUCTION, SHIPMENTS, AND STOCKS

Of the 35 States in which portland cement was manufactured in both 1931 and 1932, only 1 increased production and shipments in 1932 compared with 1931. All the commercial districts decreased production and shipments—production, 29 to 55 percent, and shipments, 20 to 53 percent. The net decline, for the country as a whole, was 39 percent in production and 36 percent in shipments.

The output—76,740,945 barrels of 376 pounds net—is equivalent to 306,963,780 sacks, 12,881,516 long tons, or 14,427,298 short tons. Only in 1931 and 1932 have shipments exceeded production since 1922.

In the following tables the statistics are arranged by States, so far as permissible, and by districts. The term "active plant" is applied to a mill or group of mills situated at 1 place and operated by 1 company. If a company has establishments at different places its mill or group of mills at each place is counted as a plant. The districts are groups of States related geographically and commercially.

Portland cement produced, shipped, and in stock in the United States, 1931 and 1932, by States

State	Active plants		Production			Shipments						Stock at mills (Dec. 31)			
			Barrels		Decrease, 1932 (percent)	1931		1932		Average factory value per barrel		Decrease in quantity, 1932 (percent)	Barrels		Increase or decrease, 1932 (percent)
	1931	1932	1931	1932		Barrels	Value	Barrels	Value	1931	1932		1931 (revised)	1932	
Alabama.....	6	6	4, 446, 902	1, 453, 374	67	4, 476, 400	\$5, 283, 085	1, 591, 166	\$1, 807, 088	\$1. 18	\$1. 14	64	624, 185	486, 393	-22
California.....	10	11	7, 740, 168	5, 481, 942	29	7, 496, 080	11, 557, 442	5, 729, 705	8, 485, 537	1. 54	1. 48	24	1, 238, 079	990, 316	-20
Illinois.....	4	4	6, 407, 191	5, 480, 813	14	6, 425, 909	5, 342, 446	5, 829, 687	3, 446, 482	. 83	. 59	9	1, 161, 459	812, 585	-30
Iowa.....	5	5	5, 804, 462	4, 270, 739	26	5, 790, 087	5, 453, 320	4, 373, 642	3, 907, 427	. 94	. 89	24	1, 414, 375	1, 311, 472	-7
Kansas.....	7	7	4, 145, 195	2, 295, 541	45	4, 478, 823	4, 112, 809	2, 224, 079	1, 880, 523	. 92	. 85	50	841, 145	912, 607	+8
Michigan.....	14	13	6, 132, 768	4, 295, 610	30	7, 168, 720	6, 984, 725	4, 886, 928	4, 442, 666	. 97	. 91	32	2, 081, 003	1, 489, 685	-28
Missouri.....	5	5	5, 666, 869	4, 238, 461	25	5, 103, 287	5, 052, 840	4, 846, 871	3, 666, 220	. 99	. 76	5	1, 367, 426	769, 016	-44
New York.....	10	10	9, 486, 659	6, 013, 582	37	9, 833, 048	10, 638, 666	5, 993, 374	6, 317, 269	1. 08	1. 05	39	1, 293, 608	1, 313, 816	+2
Ohio.....	10	10	6, 068, 958	4, 002, 123	34	6, 211, 789	6, 146, 302	4, 225, 601	3, 719, 250	. 99	. 88	32	1, 673, 271	1, 449, 793	-13
Pennsylvania.....	27	27	28, 510, 231	15, 798, 724	45	28, 412, 975	30, 952, 302	16, 937, 209	16, 670, 336	1. 09	. 98	40	5, 979, 982	4, 841, 497	-19
Tennessee.....	6	6	3, 302, 720	1, 546, 569	53	3, 287, 966	3, 810, 271	1, 551, 750	1, 644, 446	1. 16	1. 06	53	542, 272	537, 091	-1
Texas.....	9	9	6, 189, 137	3, 748, 167	39	6, 265, 016	8, 280, 913	3, 797, 559	4, 862, 416	1. 32	1. 28	39	726, 034	676, 642	-7
Other States ¹	47	47	31, 527, 811	18, 115, 300	43	32, 200, 434	37, 344, 785	18, 855, 616	21, 172, 003	1. 16	1. 12	41	5, 399, 607	4, 659, 291	-14
	160	160	125, 429, 071	76, 740, 945	39	127, 150, 534	140, 959, 906	80, 843, 187	82, 021, 723	1. 11	1. 01	36	24, 342, 446	20, 240, 204	-17

¹ Arkansas, Colorado, Florida, Georgia, Idaho, Indiana, Kentucky, Louisiana, Maine, Maryland, Minnesota, Montana, Nebraska, New Jersey, Oklahoma, Oregon, South Dakota, Utah, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

Portland cement produced, shipped, and in stock in the United States, 1931 and 1932, by districts

District	Active plants		Production			Shipments						Stock at mills (Dec. 31)			
			Barrels		De-crease, 1932 (per-cent)	1931		1932		Average factory value per barrel		De-crease in quantity, 1932 (per-cent)	Barrels		Increase or de-crease, 1932 (per-cent)
	1931	1932	1931	1932		Barrels	Value	Barrels	Value	1931	1932		1931 (revised)	1932	
Eastern Pennsylvania, New Jersey, and Maryland-----	25	25	28,640,435	16,192,503	43	28,852,931	\$31,526,293	17,311,844	\$17,147,815	\$1.09	\$0.99	40	4,827,060	3,707,719	-23
New York and Maine-----	11	11	10,309,448	6,612,996	36	10,740,835	11,733,315	6,522,130	6,952,898	1.09	1.07	39	1,343,069	1,433,935	+7
Ohio, western Pennsylvania, and West Virginia-----	19	19	11,563,606	6,695,307	42	11,548,414	11,715,773	7,211,150	6,672,272	1.01	.93	38	3,599,721	3,083,878	-14
Michigan-----	14	13	6,132,768	4,295,610	30	7,168,720	6,984,725	4,886,928	4,442,666	.97	.91	32	2,081,003	1,489,685	-28
Wisconsin, Illinois, Indiana, and Kentucky-----	11	11	15,174,044	10,611,127	30	15,938,258	14,607,735	11,287,069	7,973,228	.92	.71	29	2,834,762	2,158,820	-24
Virginia, Tennessee, Alabama, Georgia, Florida, and Louisiana-----	19	19	12,306,864	5,596,854	55	12,310,474	15,285,223	5,821,055	6,667,974	1.24	1.15	53	1,796,426	1,572,225	-12
Eastern Missouri, Iowa, Minnesota, and South Dakota-----	11	11	12,967,590	9,000,553	31	12,272,390	11,966,314	9,848,761	8,488,201	.98	.86	20	3,098,302	2,250,094	-27
Western Missouri, Nebraska, Kansas, Oklahoma, and Arkansas-----	13	13	9,181,849	5,651,142	38	9,633,404	9,435,048	5,522,372	5,090,127	.98	.92	43	1,637,745	1,766,515	+8
Texas-----	9	9	6,189,137	3,748,167	39	6,265,016	8,280,913	3,797,559	4,862,416	1.32	1.28	39	726,034	676,642	-7
Colorado, Montana, Utah, Wyoming, and Idaho-----	9	9	2,215,985	1,270,750	43	2,060,045	3,299,076	1,238,446	1,884,532	1.60	1.52	40	490,775	523,079	+7
California-----	10	11	7,740,168	5,481,942	29	7,496,080	11,557,442	5,729,705	8,485,537	1.54	1.48	24	1,238,079	990,316	-20
Oregon and Washington-----	9	9	3,007,177	1,583,994	47	2,863,967	4,568,049	1,666,168	3,354,057	1.60	2.01	42	669,470	587,296	-12
	160	160	125,429,071	76,740,945	39	127,150,534	140,959,906	80,843,187	82,021,723	1.11	1.01	36	24,342,446	20,240,204	-17

CEMENT

The following table of production, shipments, and stocks of finished portland cement by districts and by months for 1932 has been compiled from monthly reports on the operation of all but 4 plants in February, April, May, and June and 3 in the other months of the year; estimates have been included for these plants. The table also gives totals for the United States in 1931 compiled from reports for all but 4 plants for the first half and all but 3 plants for the second half of the year; estimates have also been included for these plants. Although the figures may differ slightly from the totals in other tables, which are based on final annual reports from the producers, they reflect accurately the fluctuations in the industry during the year. In December, January, and February, in the colder part of the United States, the production of portland cement necessarily is curtailed somewhat by the weather, as are also demand and hence shipments from the mills. Moreover, mills often close for repairs during the winter when the demand is lowest. As the quantity of clinker, or unground cement, produced and in reserve at the mills awaiting manufacture into finished cement is of interest, a table is given showing these statistics, compiled from manufacturers' estimates.

Summary of monthly estimates of portland cement produced, shipped, and in stock at mills in the United States in 1932, by districts, in thousands of barrels

District	January	February	March	April	May	June	July	August	September	October	November	December
PRODUCTION												
Eastern Pennsylvania, New Jersey, and Maryland.....	1,511	1,315	1,509	1,497	1,334	1,389	1,162	1,508	1,606	1,457	1,002	805
New York and Maine.....	279	319	570	537	610	822	809	879	628	486	328	335
Ohio, western Pennsylvania, and West Virginia.....	246	215	241	309	471	645	582	650	792	1,053	757	638
Michigan.....	164	114	53	290	586	544	571	378	524	640	312	153
Wisconsin, Illinois, Indiana, and Kentucky.....	540	515	688	564	821	1,128	1,144	1,211	1,255	1,242	988	477
Virginia, Tennessee, Alabama, Georgia, Florida, and Louisiana.....	425	290	300	484	718	603	322	379	394	488	680	508
Eastern Missouri, Iowa, Minnesota, and South Dakota.....	534	358	325	420	822	1,103	1,143	985	1,039	927	894	422
Western Missouri, Nebraska, Kansas, Oklahoma, and Arkansas.....	567	179	251	83	476	563	789	645	698	634	546	220
Texas.....	338	280	304	397	208	335	278	325	427	218	351	289
Colorado, Montana, Utah, Wyoming, and Idaho.....	39	7	39	93	105	157	111	206	222	185	107	-----
California.....	336	316	521	535	538	464	584	513	514	443	424	320
Oregon and Washington.....	47	63	46	269	224	168	164	156	111	166	73	81
United States, 1932.....	5,026	3,971	4,847	5,478	6,913	7,921	7,659	7,835	8,210	7,939	6,462	4,248
1931.....	6,595	5,920	8,245	11,245	14,010	14,118	13,899	13,549	12,092	10,762	8,161	5,974
SHIPMENTS												
Eastern Pennsylvania, New Jersey, and Maryland.....	1,073	851	978	1,720	1,840	1,747	1,744	2,093	1,683	1,566	1,115	759
New York and Maine.....	199	166	237	522	742	917	860	932	726	668	364	189
Ohio, western Pennsylvania, and West Virginia.....	260	284	269	520	642	785	790	1,062	978	829	417	308
Michigan.....	121	121	128	259	416	676	644	786	849	665	158	65
Wisconsin, Illinois, Indiana, and Kentucky.....	238	249	256	611	1,032	1,419	1,666	2,018	1,706	1,375	503	179
Virginia, Tennessee, Alabama, Georgia, Florida, and Louisiana.....	404	359	448	537	509	532	493	604	457	580	518	377
Eastern Missouri, Iowa, Minnesota, and South Dakota.....	142	150	243	591	1,023	1,320	1,439	1,530	1,524	1,306	379	201
Western Missouri, Nebraska, Kansas, Oklahoma, and Arkansas.....	202	239	288	505	616	637	511	661	698	631	370	164
Texas.....	241	256	380	368	323	324	307	386	315	381	352	165
Colorado, Montana, Utah, Wyoming, and Idaho.....	33	38	64	126	123	128	99	141	194	144	87	44
California.....	413	343	547	554	510	590	510	549	434	473	455	353
Oregon and Washington.....	67	62	135	223	244	189	155	206	165	125	64	31
United States, 1932.....	3,393	3,118	3,973	6,536	8,020	9,264	9,218	10,968	9,729	8,743	4,782	2,835
1931.....	4,692	5,074	7,192	11,184	14,200	16,077	15,545	15,172	13,671	12,360	7,156	4,142

Summary of monthly estimates of portland cement produced, shipped, and in stock at mills in the United States in 1932, by districts, in thousands of barrels—Continued

District	January	February	March	April	May	June	July	August	September	October	November	December
STOCKS (END OF MONTH)												
Eastern Pennsylvania, New Jersey, and Maryland.....	5,242	5,706	6,237	6,014	5,508	5,140	4,564	3,979	3,903	3,782	3,681	3,727
New York and Maine.....	1,423	1,575	1,909	1,924	1,792	1,697	1,647	1,594	1,496	1,314	1,278	1,424
Ohio, western Pennsylvania, and West Virginia.....	3,474	3,405	3,401	3,190	3,029	2,889	2,705	2,313	2,128	2,352	2,692	3,023
Michigan.....	2,099	2,093	2,015	2,045	2,211	2,080	2,007	1,598	1,274	1,249	1,406	1,493
Wisconsin, Illinois, Indiana, and Kentucky.....	3,120	3,386	3,818	3,772	3,561	3,272	2,750	1,942	1,492	1,388	1,872	2,170
Virginia, Tennessee, Alabama, Georgia, Florida, and Louisiana.....	1,817	1,749	1,601	1,549	1,759	1,830	1,659	1,434	1,370	1,278	1,440	1,571
Eastern Missouri, Iowa, Minnesota, and South Dakota.....	3,491	3,726	3,808	3,636	3,435	3,218	2,922	2,377	1,892	1,513	2,029	2,250
Western Missouri, Nebraska, Kansas, Oklahoma, and Arkansas.....	2,003	1,942	1,905	1,484	1,344	1,269	1,547	1,531	1,531	1,534	1,710	1,766
Texas.....	823	847	771	800	685	695	667	605	717	546	554	677
Colorado, Montana, Utah, Wyoming, and Idaho.....	486	456	431	398	378	407	417	482	506	548	568	524
California.....	1,151	1,124	1,091	1,072	1,101	975	1,049	1,014	1,093	1,063	1,033	1,000
Oregon and Washington.....	649	648	558	612	591	571	578	529	476	517	525	575
United States, 1932.....	25,778	26,657	27,545	26,496	25,394	24,043	22,512	19,398	17,878	17,084	18,788	20,200
1931.....	27,759	28,612	29,676	29,715	29,554	27,602	25,934	24,313	22,736	21,218	22,219	24,342

¹ Revised figures.

Summary of monthly estimates of clinker (unground portland cement) produced and in stock at mills in the United States in 1932, by districts, in thousands of barrels

District	January	February	March	April	May	June	July	August	September	October	November	December
PRODUCTION												
Eastern Pennsylvania, New Jersey, and Maryland.....	1,599	1,531	1,560	1,392	1,149	1,456	1,174	1,346	1,420	1,369	1,004	668
New York and Maine.....	467	443	635	745	551	625	640	725	608	445	317	274
Ohio, western Pennsylvania, and West Virginia.....	454	426	229	243	404	458	574	503	735	849	748	552
Michigan.....	253	200	214	498	618	515	427	315	434	530	273	136
Wisconsin, Illinois, Indiana, and Kentucky.....	758	904	954	682	644	809	883	949	1,116	1,148	1,060	648
Virginia, Tennessee, Alabama, Georgia, Florida, and Louisiana.....	512	314	240	466	562	445	320	381	445	520	603	540
Eastern Missouri, Iowa, Minnesota, and South Dakota.....	531	341	365	573	903	998	1,032	938	949	894	834	449
Western Missouri, Nebraska, Kansas, Oklahoma, and Arkansas.....	693	320	260	107	469	541	587	552	630	592	562	249
Texas.....	284	219	330	409	248	280	245	303	426	167	324	338
Colorado, Montana, Utah, Wyoming, and Idaho.....	73	85	-----	77	101	174	182	281	235	193	109	84
California.....	448	408	606	554	420	372	401	550	574	446	351	410
Oregon and Washington.....	35	35	50	178	204	130	148	235	131	106	105	37
United States, 1932.....	6,107	5,176	5,443	5,924	6,273	6,803	6,613	7,078	7,703	7,259	6,290	4,335
1931.....	8,129	7,473	9,586	11,540	13,159	12,679	12,246	11,664	10,414	9,825	8,259	6,840
STOCKS (END OF MONTH)												
Eastern Pennsylvania, New Jersey, and Maryland..	915	1,155	1,232	1,149	985	1,079	1,113	976	811	744	732	552
New York and Maine.....	596	722	793	1,005	950	760	599	454	440	404	394	336
Ohio, western Pennsylvania, and West Virginia.....	903	1,116	1,122	1,064	1,007	825	826	682	638	455	459	386
Michigan.....	731	817	978	1,192	1,234	1,215	1,074	1,012	935	832	801	777
Wisconsin, Illinois, Indiana, and Kentucky.....	718	1,111	1,381	1,501	1,323	1,004	746	489	358	267	345	532
Virginia, Tennessee, Alabama, Georgia, Florida, and Louisiana.....	790	808	736	732	567	434	434	436	479	516	440	478
Eastern Missouri, Iowa, Minnesota, and South Dakota.....	456	414	455	610	701	611	504	471	395	375	325	355
Western Missouri, Nebraska, Kansas, Oklahoma, and Arkansas.....	669	807	812	829	822	789	589	499	435	387	402	430
Texas.....	295	239	277	295	335	284	257	238	241	196	172	224
Colorado, Montana, Utah, Wyoming, and Idaho.....	162	190	150	134	130	146	220	294	295	303	306	340
California.....	1,548	1,623	1,712	1,720	1,599	1,498	1,309	1,325	1,359	1,350	1,284	1,350
Oregon and Washington.....	401	373	377	280	269	232	218	299	322	264	298	255
United States, 1932.....	8,184	9,375	10,025	10,511	9,922	8,877	7,889	7,175	6,708	6,093	5,938	5,995
1931.....	10,384	11,946	13,318	13,854	13,087	11,837	10,209	8,468	6,918	6,021	6,215	7,035

Producers' stocks of portland cement reported on hand at the mills decreased each month in 1932 compared with the corresponding month in 1931. Reserves at the end of 1932 were 17 percent less than at the end of 1931, the only decline recorded in stocks—except that at the end of 1931 compared with 1930—at the end of any year since 1922. Stocks at the end of 1932 were more than 15 percent below the average for the 5 preceding years (23,831,817 barrels). The totals by States and districts appear in the preceding tables.

Producers' stocks of finished portland cement on hand at mills in the United States, Dec. 31, 1928-32, in barrels

1928.....	22, 760, 103	1931.....	¹ 24, 342, 446
1929.....	23, 700, 533	1932.....	20, 240, 204
1930.....	25, 898, 622		

DOMESTIC CONSUMPTION

The total consumption of portland cement in the United States may be estimated by adding the imports to the shipments and subtracting the exports from the sum. Of course, at any time a variable but considerable quantity of cement is in transit, in warehouses at distributing points, and awaiting use at jobs, so that the estimate thus made is at best only approximate. Another fact that impairs the accuracy of the estimate is that the cement imported and exported is classed as hydraulic cement; hence, the records do not discriminate between portland and other cements and probably include some plaster also. Portland cement, however, constitutes by far the greater part of the exports. The apparent domestic consumption in 1932 dropped more than 36 percent compared with 1931. Since 1918 the other decreases recorded in apparent domestic consumption have been as follows: 1929 from 1928, nearly 4 percent; 1930 from 1929, 7 percent; and 1931 from 1930, more than 20 percent.

Portland cement available for consumption in the United States, 1928-32, in barrels

Year	Shipments	Imports	Exports	Available for consumption
1928.....	175, 838, 332	2, 284, 085	824, 656	177, 297, 761
1929.....	169, 868, 322	1, 727, 900	885, 321	170, 710, 901
1930.....	159, 059, 334	975, 546	755, 778	159, 279, 102
1931.....	127, 150, 534	457, 238	429, 653	127, 178, 119
1932.....	80, 843, 187	462, 496	374, 581	80, 931, 102

The only available gage of consumption of portland cement by States is the record of shipments into the several States by the manufacturers; it is therefore merely approximate. The shipments of cement into a State in a year do not equal the consumption in the State during that year, but shipments over a long period should afford a fair index of consumption. The simplest available common unit is the estimated consumption in barrels per capita, which is obtained by comparing the shipments into the several States with their population. The following table offers such figures for 1931 and 1932. The estimates of population used in calculating the per capita consumption are those of the Bureau of the Census.

¹ Revised figures.

The official figures for exports of cement on pages 510-1 differ from those reported by manufacturers in the following table, because cement forwarded from mills and destined for foreign countries and for Alaska, Hawaii, and Puerto Rico is reported by shippers as exported, whether or not it leaves the country during the calendar year, whereas the Bureau of Foreign and Domestic Commerce export figures record the cement that actually leaves the country during the period specified. (Shipments to Alaska, Hawaii, and Puerto Rico appear on p. 511.) The exports for 1932 recorded by that Bureau include all other hydraulic cement exported, whereas the table of per capita consumption relates only to portland cement.

The per capita consumption indicated by the table necessarily falls short of the total apparent consumption by the quantity of the imports. These increase the consumption in certain States near the Canadian border and the seaboard; in 1932 they increased the general average per capita consumption about 0.004 barrel.

In only 5 States—Delaware, the District of Columbia, Iowa, Minnesota, and Nevada—was the per capita consumption in 1932 1 barrel or more. Of these, only Nevada increased its per capita consumption, and only that State and the District of Columbia had a per capita consumption of more than 2 barrels.

In the remaining States the decreases in per capita consumption ranged from 0.03 barrel to 1.24 barrels in 1932. The general average per capita consumption for the United States was 0.64 barrel in 1932, compared with 1.02 barrels in 1931. From 1914 to 1932 the average per capita consumption for the country ranged from a low of 0.64 barrel (in 1918 and 1932) to a high of 1.46 barrels (in 1928).

*Shipments of domestic portland cement from mills into States and per capita, 1931 and 1932, in barrels*¹

State	1931		1932	
	Total	Per capita ¹	Total	Per capita ¹
Alabama.....	1,250,778	0.47	391,813	0.15
Arizona ²	438,135	.99	161,230	.36
Arkansas.....	1,223,213	.66	269,691	.14
California.....	6,616,135	1.13	4,683,906	.79
Colorado.....	775,540	.74	492,484	.47
Connecticut ²	1,476,613	.91	807,686	.49
Delaware ²	347,423	1.45	297,959	1.24
District of Columbia ²	1,249,676	2.55	1,070,092	2.17
Florida.....	764,671	.51	428,020	.28
Georgia.....	1,714,033	.69	1,128,505	.39
Idaho.....	189,317	.42	103,317	.23
Illinois.....	7,925,435	1.03	5,826,307	.75
Indiana.....	3,880,234	1.19	3,014,646	.92
Iowa.....	3,799,665	1.53	2,592,470	1.05
Kansas.....	2,131,790	1.13	1,044,983	.55
Kentucky.....	1,628,002	.62	1,306,388	.60
Louisiana.....	3,906,467	1.84	1,287,738	.60
Maine.....	527,376	.66	409,836	.51
Maryland.....	2,013,929	1.22	1,556,646	.94
Massachusetts ²	3,043,584	.71	2,128,962	.49
Michigan.....	5,582,116	1.13	3,476,002	.70
Minnesota.....	3,716,068	1.44	3,147,583	1.22
Mississippi ²	524,804	.26	467,017	.23
Missouri.....	4,259,370	1.17	3,455,236	.95
Montana.....	263,119	.49	150,370	.28
Nebraska.....	1,908,200	1.38	771,144	.66
Nevada ²	133,403	1.45	648,003	6.97
New Hampshire ²	437,493	.94	266,917	.57
New Jersey.....	5,065,654	1.23	2,855,266	.69

¹ Per capita figures based on latest available estimates of population by the Bureau of the Census.

² Noncement-producing State.

498 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Shipments of domestic portland cement from mills into States and per capita, 1931 and 1932, in barrels—Continued

State	1931		1932	
	Total	Per capita	Total	Per capita
New Mexico ²	284, 507	0. 62	173, 853	0. 40
New York	19, 755, 653	1. 55	11, 057, 189	. 86
North Carolina ²	1, 015, 225	. 32	434, 454	. 13
North Dakota ²	253, 072	. 98	175, 886	. 26
Ohio	6, 644, 895	. 99	4, 812, 502	. 71
Oklahoma	2, 213, 685	. 91	1, 238, 257	. 51
Oregon	926, 874	. 96	522, 909	. 54
Pennsylvania	7, 922, 885	. 52	4, 712, 366	. 48
Rhode Island ²	569, 817	. 52	305, 359	. 44
South Carolina ²	2, 250, 646	1. 29	367, 951	. 21
South Dakota	637, 023	. 91	333, 836	. 48
Tennessee	1, 396, 425	. 53	1, 176, 655	. 44
Texas	5, 684, 691	. 96	3, 961, 891	. 66
Utah	311, 212	. 61	164, 305	. 32
Vermont ²	212, 492	. 57	260, 191	. 72
Virginia	1, 596, 041	. 66	905, 663	. 37
Washington	2, 086, 785	1. 32	1, 289, 210	. 81
West Virginia	1, 421, 369	. 81	861, 200	. 49
Wisconsin	3, 977, 652	1. 34	2, 951, 291	. 99
Wyoming	136, 273	. 60	82, 368	. 36
Unspecified	235, 182	-----	159, 388	-----
Exports reported by manufacturers but not included above ²	126, 404, 657	1. 02	80, 183, 671	. 64
	745, 877	-----	659, 516	-----
Total shipped from cement plants	127, 150, 534	-----	80, 843, 187	-----

² Noncement-producing State.

³ Includes shipments to Alaska, Hawaii, and Puerto Rico.

The following table of monthly shipments from portland-cement mills into States in 1932 has been compiled from monthly reports of producers but includes estimates of the distribution of shipments from three plants each month. Although the figures vary slightly from the totals shown in the other tables, which are based on final annual reports from the producers, they reflect the fluctuations in shipments during the year.

Portland cement shipped from mills into States in 1932, by months, in barrels ¹

Shipped to—	January	February	March	April	May	June
Alabama	29, 065	27, 589	35, 482	44, 565	26, 007	30, 451
Alaska	132	-----	132	524	2, 259	2, 689
Arizona	12, 426	8, 383	20, 293	15, 893	15, 430	16, 050
Arkansas	19, 588	22, 280	12, 353	14, 534	17, 496	18, 623
California	371, 260	301, 852	487, 421	455, 498	400, 264	461, 266
Colorado	13, 598	18, 392	26, 601	61, 974	60, 878	66, 983
Connecticut	37, 618	24, 687	42, 557	94, 490	114, 826	91, 066
Delaware	13, 150	12, 842	10, 545	28, 985	38, 984	34, 906
District of Columbia	59, 606	70, 548	68, 265	97, 351	94, 829	88, 395
Florida	27, 586	27, 805	31, 427	39, 674	33, 183	36, 600
Georgia	100, 950	92, 049	99, 498	82, 155	93, 256	100, 778
Hawaii	16, 983	15, 765	12, 565	29, 953	26, 370	23, 787
Idaho	2, 359	2, 987	10, 944	12, 480	10, 963	10, 241
Illinois	103, 901	108, 880	118, 689	335, 544	703, 571	815, 496
Indiana	48, 366	60, 561	69, 500	157, 960	310, 262	410, 735
Iowa	22, 943	20, 162	46, 383	145, 776	182, 684	257, 084
Kansas	27, 495	36, 309	55, 666	126, 952	127, 362	159, 469
Kentucky	44, 852	47, 017	54, 024	90, 728	127, 633	87, 771
Louisiana	77, 633	62, 045	72, 511	58, 675	79, 682	129, 428
Maine	6, 847	4, 513	6, 550	26, 384	36, 870	84, 934
Maryland	87, 662	57, 752	59, 289	140, 479	168, 539	148, 637
Massachusetts	87, 756	67, 952	94, 976	209, 812	249, 071	258, 183
Michigan	92, 394	96, 588	93, 462	179, 013	304, 783	488, 650

¹ Includes estimated distribution of shipments from 3 plants each month.

Portland cement shipped from mills into States in 1932, by months, in barrels—
Continued

Shipped to—	January	February	March	April	May	June
Minnesota.....	31,018	26,585	60,441	164,514	348,504	588,156
Mississippi.....	14,040	11,977	27,980	25,123	14,928	21,757
Missouri.....	77,383	85,579	115,809	250,745	442,725	456,782
Montana.....	3,494	3,062	8,164	18,034	12,840	14,670
Nebraska.....	6,897	11,655	35,266	68,633	71,205	86,063
Nevada.....	10,308	12,238	24,762	36,163	47,891	74,982
New Hampshire.....	7,667	4,638	7,340	23,710	20,082	21,685
New Jersey.....	165,341	127,933	135,539	297,700	354,171	310,576
New Mexico.....	6,292	14,749	19,237	24,577	20,550	16,937
New York.....	590,166	469,466	584,409	970,867	1,095,796	1,287,121
North Carolina.....	37,779	36,507	41,032	55,225	52,966	30,921
North Dakota.....	942	1,395	4,413	19,740	22,113	24,936
Ohio.....	161,775	174,750	166,664	310,376	392,409	525,399
Oklahoma.....	81,230	90,606	95,017	123,596	124,276	105,703
Oregon.....	26,097	26,001	56,798	71,357	58,860	40,056
Pennsylvania.....	251,407	224,349	227,854	427,501	450,430	461,699
Puerto Rico.....	2,725	1,751	4,575	5,645	4,875	4,350
Rhode Island.....	22,151	8,594	14,861	31,523	37,208	36,789
South Carolina.....	33,652	30,897	56,714	55,309	43,529	50,320
South Dakota.....	3,721	3,503	11,565	27,070	20,924	28,654
Tennessee.....	36,629	36,126	53,689	98,855	103,203	88,321
Texas.....	255,469	285,206	384,174	403,860	358,964	333,082
Utah.....	6,730	6,402	10,972	15,997	16,116	9,655
Vermont.....	2,937	4,618	2,379	15,312	25,911	38,453
Virginia.....	64,365	57,936	64,153	86,856	88,465	82,323
Washington.....	45,904	45,674	83,502	163,168	199,080	167,838
West Virginia.....	45,752	47,007	44,309	65,620	86,484	101,063
Wisconsin.....	54,214	46,973	64,183	176,417	227,413	394,935
Wyoming.....	1,261	2,553	3,579	7,547	10,626	10,467
Unspecified.....	15,671	-----	8,858	24,551	7,406	11,394
	3,367,187	3,085,688	3,947,380	6,514,855	7,983,982	9,242,279
Foreign countries.....	25,813	32,312	25,620	21,145	36,018	21,721
Total shipped from cement plants.....	3,393,000	3,118,000	3,973,000	6,536,000	8,020,000	9,264,000

Shipped to—	July	August	September	October	November	December
Alabama.....	26,937	43,836	19,699	27,450	46,722	33,085
Alaska.....	2,442	1,570	660	264	528	82
Arizona.....	13,945	10,833	16,834	15,107	11,747	4,284
Arkansas.....	22,561	33,764	26,628	30,537	32,310	16,576
California.....	366,727	410,822	361,507	376,227	368,806	312,268
Colorado.....	45,274	58,040	59,394	38,567	30,044	12,797
Connecticut.....	80,902	100,729	63,306	71,770	55,588	29,343
Delaware.....	38,443	32,173	17,278	26,516	28,807	15,419
District of Columbia.....	87,905	109,666	119,017	113,725	88,796	71,333
Florida.....	37,770	49,148	28,320	37,713	31,192	46,992
Georgia.....	98,189	106,631	72,034	126,372	96,639	64,203
Hawaii.....	16,045	17,666	26,747	25,189	14,050	12,400
Idaho.....	8,961	10,689	5,582	12,068	6,095	1,027
Illinois.....	923,612	867,859	779,476	694,410	272,348	99,279
Indiana.....	482,652	557,005	441,616	344,533	76,993	40,604
Iowa.....	350,388	431,321	563,793	454,027	86,539	30,487
Kansas.....	88,175	91,387	92,223	120,451	79,749	39,204
Kentucky.....	118,040	207,134	230,591	231,952	88,949	41,032
Louisiana.....	97,884	167,844	193,661	174,155	108,552	64,856
Maine.....	80,949	77,546	29,894	27,528	15,169	12,522
Maryland.....	175,526	214,006	190,030	140,141	101,789	75,581
Massachusetts.....	272,853	308,259	202,039	161,602	132,813	85,020
Michigan.....	400,128	482,658	659,003	501,301	94,471	36,172
Minnesota.....	597,902	646,666	390,343	232,531	35,044	24,515
Mississippi.....	25,444	58,429	63,668	83,474	79,075	29,850
Missouri.....	479,331	474,524	445,735	375,350	158,669	89,832
Montana.....	15,319	19,274	28,855	16,038	5,997	4,228
Nebraska.....	48,233	96,855	134,212	149,984	49,924	12,092
Nevada.....	99,152	97,967	77,744	59,278	61,177	27,500
New Hampshire.....	17,092	29,829	51,276	52,584	26,044	4,655
New Jersey.....	282,170	342,947	263,670	272,420	178,586	119,347
New Mexico.....	11,869	11,438	10,703	16,950	12,752	7,803
New York.....	1,246,668	1,437,016	1,210,601	1,128,337	623,446	404,367
North Carolina.....	28,314	45,680	24,053	32,846	30,813	32,994
North Dakota.....	22,693	16,872	28,840	28,437	3,590	2,116
Ohio.....	539,371	774,702	678,551	586,904	248,100	144,416
Oklahoma.....	65,442	135,342	127,325	116,502	119,817	52,963
Oregon.....	56,746	63,606	48,597	47,454	19,121	12,151
Pennsylvania.....	451,137	604,752	500,591	491,038	375,171	239,051
Puerto Rico.....	2,337	820	2,775	9,875	6,850	8,750
Rhode Island.....	33,395	31,578	17,542	39,206	19,367	13,145

500 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Portland cement shipped from mills into States in 1932, by months, in barrels—
Continued

Shipped to—	July	August	September	October	November	December
South Carolina.....	24, 879	22, 402	8, 681	14, 526	10, 783	15, 994
South Dakota.....	27, 280	32, 468	90, 970	77, 355	6, 325	4, 133
Tennessee.....	104, 672	118, 730	114, 020	175, 009	162, 184	59, 147
Texas.....	331, 951	392, 333	310, 541	372, 878	363, 185	168, 989
Utah.....	10, 745	25, 011	11, 733	26, 380	20, 118	5, 729
Vermont.....	55, 515	56, 063	29, 887	17, 857	7, 026	3, 434
Virginia.....	72, 801	115, 664	85, 343	72, 578	57, 857	55, 574
Washington.....	119, 136	168, 362	140, 586	90, 017	45, 327	20, 126
West Virginia.....	89, 286	93, 479	119, 731	72, 893	43, 485	49, 690
Wisconsin.....	483, 432	630, 006	459, 686	290, 171	87, 968	35, 346
Wyoming.....	7, 177	8, 387	11, 247	10, 954	6, 011	3, 219
Unspecified.....	16, 027	2, 525	11, 986	1, 019	-----	11, 861
	9, 201, 814	10, 944, 313	9, 694, 624	8, 712, 250	4, 732, 008	2, 807, 573
Foreign countries.....	16, 186	23, 687	34, 376	30, 750	49, 992	27, 427
Total shipped from cement plants.....	9, 218, 000	10, 968, 000	9, 729, 000	8, 743, 000	4, 782, 000	2, 835, 000

LOCAL SUPPLIES

The following table compares the shipments from the mills within a State or group of States with the estimated consumption (State receipts of mill shipments) and indicates the surplus or deficiency in the supply of cement locally available. Consumption in the States that do not produce cement is also indicated in the table on page 497. Data for 1916 to 1930 will be found in Mineral Resources of the United States from 1917 to 1930.

The surplus in the following table was distributed by years as follows: In 1931, to noncement-producing States, 12,321,890 barrels; to foreign countries and to Alaska, Hawaii, and Puerto Rico, 745,877 barrels; and unspecified, 235,182 barrels. In 1932, to noncement-producing States, 7,562,560 barrels; to foreign countries and to Alaska, Hawaii, and Puerto Rico, 659,516 barrels; and unspecified, 159,388 barrels.

Estimated surplus or deficiency in local supply of portland cement in cement-producing States, 1931 and 1932, in barrels

State or division	1931			1932		
	Shipments from mills	Estimated consumption	Surplus or deficiency	Shipments from mills	Estimated consumption	Surplus or deficiency
Alabama.....	4, 476, 400	1, 250, 778	+3, 225, 622	1, 591, 166	391, 813	+1, 199, 353
California.....	7, 496, 080	6, 616, 135	+879, 945	5, 729, 705	4, 683, 906	+1, 045, 799
Illinois.....	6, 425, 909	7, 925, 435	-1, 499, 526	5, 229, 687	5, 826, 307	-3, 380
Iowa.....	5, 790, 087	3, 799, 665	+1, 990, 422	4, 373, 642	2, 592, 470	+1, 781, 172
Kansas.....	4, 478, 823	2, 131, 790	+2, 347, 033	2, 224, 079	1, 044, 983	+1, 179, 096
Michigan.....	7, 168, 720	5, 582, 116	+1, 586, 604	4, 886, 928	3, 476, 002	+1, 410, 926
Missouri.....	5, 103, 287	4, 259, 370	+843, 917	4, 846, 871	3, 455, 236	+1, 391, 635
Ohio.....	6, 211, 789	6, 644, 895	-433, 106	4, 225, 601	4, 812, 502	-586, 901
Pennsylvania.....	28, 412, 975	7, 922, 885	+20, 490, 090	16, 937, 209	4, 712, 366	+12, 224, 843
Tennessee.....	3, 287, 966	1, 396, 425	+1, 891, 541	1, 551, 750	1, 176, 655	+375, 095
Texas.....	6, 265, 016	5, 684, 691	+580, 325	3, 797, 559	3, 961, 891	-164, 332
Colorado, Montana, Utah, Wyoming, and Idaho.....	2, 060, 045	1, 675, 461	+384, 584	1, 238, 446	992, 544	+245, 902
Oregon and Washington.....	2, 863, 967	3, 013, 669	-149, 702	1, 666, 168	1, 812, 119	-145, 951
Georgia, Kentucky, Virginia, Florida, and Louisiana.....	5, 376, 411	9, 609, 214	-4, 232, 803	3, 263, 828	5, 056, 314	-1, 792, 486
Indiana, Wisconsin, Minnesota, Nebraska, Oklahoma, South Dakota, and Arkansas.....	15, 215, 643	17, 551, 075	-2, 335, 432	8, 798, 234	11, 726, 478	-2, 928, 244
Maryland, New Jersey, and West Virginia.....	5, 776, 581	8, 500, 952	-2, 724, 371	3, 360, 184	5, 273, 112	-1, 912, 928
New York and Maine.....	10, 740, 835	20, 283, 029	-9, 542, 194	6, 522, 130	11, 467, 025	-4, 944, 895
	127, 150, 534	113, 847, 585	+13, 302, 949	80, 843, 187	72, 461, 723	+8, 381, 464

PRICES

AT FACTORIES

The average selling value of portland cement f.o.b. at the factories, with the price of containers not included and with cash discounts deducted where allowed, as reported to the Bureau of Mines is stated in the tables of shipments by States and districts during 1931 and 1932 (pp. 490-1). The averages by districts ranged from \$0.71 a barrel in the Wisconsin-Illinois-Indiana-Kentucky district to \$2.01 in the Oregon-Washington district in 1932 compared with a range from \$0.92 a barrel in the Wisconsin-Illinois-Indiana-Kentucky district to \$1.60 in the Colorado-Montana-Utah-Wyoming-Idaho and the Oregon-Washington districts in 1931. The general average value for the country as a whole has decreased each year since 1923; it decreased 10 cents per barrel (9 percent) in 1932 compared with 1931, and averages were lower in all the States shown in the table and in all the districts except Oregon-Washington.

The average factory value of portland cement may be higher for certain States than it would be if the ordinary structural cement were the only kind considered. For these States certain special cements that command higher prices are included in the average. These special cements include the white portland cement made in Pennsylvania and the high-early-strength portland cements now manufactured in many States. Statistics of output of high-early-strength portland cement, masonry cements of the portland-cement class, and other special cements appear on page 505.

Average factory value per barrel in bulk of portland cement, 1928-32

1928	\$1. 57	1931	\$1. 11
1929	1. 48	1932	1. 01
1930	1. 44		

AT MARKETS

Considerable information is now available to show the position of cement prices among those of other structural materials and to explain the economic conditions that determine them. Data of interest in this connection are now compiled and published by the Bureau of Labor Statistics, United States Department of Labor.

Comparative prices of building materials in December 1931 and 1932¹

[Percentage of decrease from 1926 average]

	1931	1932
Building materials in general.....	24.3	29.2
Lime, building, at plant (composite price).....	16.6	24.4
Plate glass, 3 to 5 feet, New York.....	17.1	17.1
Turpentine, New York.....	58.0	54.9
Brick, common, building, at plant (composite price).....	13.7	22.9
Linseed oil, raw, New York.....	36.8	37.9
Douglas fir, No. 1, common, at mills.....	32.7	45.6
Yellow pine, flooring, at mills.....	(?)	(?)
Oak, plain, white, No. 1, common, Cincinnati.....	33.4	39.4
Portland cement, at plant (composite price).....	25.4	18.9

¹ Bureau of Labor Statistics, U.S. Department of Labor. Wholesale Prices of Commodities: Rept. for December and year 1932, pp. 17-19.

² No 1926 base price.

MANUFACTURING CONDITIONS

PLANTS

In 1932 portland cement was manufactured at 150 plants and shipments were made from 160 plants compared with 158 producing and 160 shipping plants in 1931.

Additional plants were reported to be under construction but not completed in Arkansas and Pennsylvania.

FUELS ²

Compared with 1931 the proportion of cement burned by coal alone decreased in 1932, and the proportion burned by oil and natural gas increased. Of the portland cement produced in 1932, 71.6 percent was burned with coal alone compared with 74.2 percent in 1931, 5.5 percent was burned with oil alone compared with 4.8 percent in 1931, and 10.0 percent was burned with natural gas alone compared with 5.5 percent in 1931.

As summarized from the reports of the cement producers the following quantities of fuel were consumed at the portland-cement plants in the United States in 1932 in the production of 76,740,945 barrels of finished cement: Coal, 3,769,994 short tons; oil, 1,214,809 barrels (51,021,978 gallons); and natural gas, 21,439,812,288 cubic feet.

In the estimates of consumption of fuel per barrel of cement the production of finished cement alone is considered. In this connection it is of interest that the stock of clinker or unground cement at the mills at the end of 1932 (5,995,000 barrels, as shown in the tables on pages 495 and 504) is nearly 15 percent below the stock of clinker at the mills at the end of 1931 (7,035,000 barrels).

The accompanying table shows the quantities of natural gas used at portland-cement plants in the United States in 1931 and 1932. So far as permissible the statistics are arranged by States. During 1932 natural gas was used as fuel at 29 plants in 12 States compared with 31 plants in 11 States in 1931; 15 plants in 5 States reported the use of natural gas in 1927.

In addition to the above fuels, 1 plant reported the use of manufactured gas with coal in 1931 and 1932 and 5 plants the use of petroleum coke in 1932. The 5 plants reporting petroleum coke also reported the use of other fuels.

Natural gas used at portland-cement plants in the United States, 1931 and 1932, by States, in cubic feet

State	1931	1932
Kansas.....	5,680,644,094	2,958,030,394
Texas.....	8,349,796,000	4,755,307,000
Other States ¹	17,350,511,582	13,726,474,894
	31,380,951,676	21,439,812,288

¹ 1931: Alabama, Arkansas, California, Colorado, Iowa, Missouri, Nebraska, Oklahoma, and South Dakota; 1932: Above States and Pennsylvania.

² The data on fuels in 1931 and 1932 include a few estimates.

Portland cement burned, 1931 and 1932, by kinds of fuel

Fuel	Finished cement produced			Fuel consumed		
	Number of plants	Barrels of 376 pounds	Percent of total	Coal (short tons)	Oil (barrels of 42 gallons)	Natural gas (cubic feet)
1931						
Coal ¹	114	² 93,060,860	74.2	5,878,249		
Oil.....	11	² 6,053,845	4.8		1,431,330	
Natural gas.....	11	² 6,826,843	5.5			11,318,295,168
Coal and oil.....	2	} 19,487,523	15.5	501,191	585,399	20,062,716,508
Coal and natural gas ³	12					
Oil and natural gas.....	5					
Coal, oil, and natural gas.....	3					
	158	125,429,071	100.0	⁴ 6,379,440	2,016,729	31,380,951,676
1932						
Coal ⁴	106	² 54,943,717	71.6	3,457,919		
Oil.....	12	² 4,239,733	5.5		956,148	
Natural gas.....	15	² 7,696,460	10.0			13,395,474,870
Coal and oil ⁵	3	} 9,861,035	12.9	312,075	258,661	8,044,337,418
Coal and natural gas ⁶	7					
Oil and natural gas ⁷	3					
Coal, oil, and natural gas.....	4					
	150	76,740,945	100.0	⁸ 3,769,994	1,214,809	21,439,812,288

¹ In addition to the coal shown for this group 2 plants reported the use of petroleum coke with coal and 1 plant the use of manufactured gas with coal.

² Average consumption of fuel per barrel of cement produced was as follows: 1931—coal, 126.3 pounds; oil, 0.2364 barrel; natural gas, 1,657.9 cubic feet. 1932—coal, 125.9 pounds; oil, 0.2255 barrel; natural gas, 1,740 cubic feet.

³ In addition to the coal and natural gas included for this group 1 plant reported the use of petroleum coke with coal and natural gas.

⁴ Includes 146,375 short tons of anthracite and 6,233,065 short tons of bituminous coal.

⁵ In addition to the coal shown for this group 1 plant reported the use of petroleum coke with coal and 1 plant the use of manufactured gas with coal.

⁶ In addition to the coal and oil included for this group 1 plant reported the use of petroleum coke with coal and oil.

⁷ In addition to the oil and natural gas included for this group 1 plant reported the use of petroleum coke with oil and natural gas.

⁸ Includes 61,191 short tons of anthracite and 3,708,803 short tons of bituminous coal.

Portland cement burned and fuels used, 1931 and 1932, by processes

Process	Finished cement produced			Fuel consumed		
	Number of plants ¹	Barrels	Percent of total	Coal (short tons)	Oil (barrels)	Natural gas (cubic feet)
1931						
Wet.....	89½	62,127,750	49.5	² 2,943,957	1,292,866	18,368,076,309
Dry.....	68½	63,301,321	50.5	3,435,483	723,863	13,012,875,367
	158	125,429,071	100.0	³ 6,379,440	2,016,729	31,380,951,676
1932						
Wet.....	83	37,510,373	48.9	⁴ 1,678,186	826,042	12,084,225,813
Dry.....	67	39,230,572	51.1	2,091,808	388,767	8,455,586,475
	150	76,740,945	100.0	⁵ 3,769,994	1,214,809	21,439,812,288

¹ A wet mill and a dry mill in 1 plant are each counted as half a plant.

² In addition to the coal shown for this group 1 plant reported the use of manufactured gas with coal, 2 plants the use of petroleum coke with coal, and 1 plant the use of petroleum coke with coal and natural gas.

³ Includes 146,375 short tons of anthracite and 6,233,065 short tons of bituminous coal.

⁴ In addition to the coal shown for this group 1 plant reported the use of manufactured gas with coal and 1 plant the use of petroleum coke with coal.

⁵ Includes 61,191 short tons of anthracite and 3,708,803 short tons of bituminous coal.

Estimated clinker (unground cement) produced and in stock at mills in the United States, 1931 and 1932, by processes, in barrels

Process	Number of plants ¹		Production		Stock (Dec. 31)	
	1931	1932	1931	1932	1931	1932
Wet.....	88½	83	59,885,000	36,472,000	3,458,000	2,960,000
Dry.....	67½	74	61,929,000	38,532,000	3,577,000	3,035,000
	156	157	121,814,000	75,004,000	7,035,000	5,995,000

¹ A wet mill and a dry mill in 1 plant are each counted as half a plant.

CAPACITY

At the end of 1932 the capacity for producing finished portland cement of the 160 shipping plants active in 1932 and 6 plants inactive in 1932 but producing within the five previous years was 271,308,000 barrels per year, according to manufacturers' reports supplemented by a few estimates. No new plants were reported producing in 1932.

Portland-cement-manufacturing capacity of the United States, 1931 and 1932, by commercial districts

District	Estimated capacity (barrels)		Percent of capacity utilized	
	1931	1932	1931	1932
Eastern Pennsylvania, New Jersey, and Maryland.....	56,280,000	56,702,000	50.8	28.6
New York and Maine.....	19,009,000	18,820,000	54.2	35.1
Ohio, western Pennsylvania, and West Virginia.....	28,863,000	28,765,000	40.1	23.3
Michigan.....	19,235,000	19,145,000	31.9	22.4
Wisconsin, Illinois, Indiana, and Kentucky.....	31,393,000	31,861,000	48.3	33.3
Virginia, Tennessee, Alabama, Georgia, Florida, and Louisiana.....	27,021,000	25,660,000	45.5	21.8
Eastern Missouri, Iowa, Minnesota, and South Dakota.....	24,242,000	24,197,000	53.5	37.2
Western Missouri, Nebraska, Kansas, Oklahoma, and Arkansas.....	18,330,000	18,110,000	50.1	31.2
Texas.....	10,579,000	10,724,000	58.5	35.0
Colorado, Montana, Utah, Wyoming, and Idaho.....	6,812,000	6,812,000	32.5	18.7
California.....	22,405,000	22,903,000	34.5	23.9
Oregon and Washington.....	7,581,000	7,609,000	39.7	20.8
	271,850,000	271,308,000	46.1	28.3

The following estimates, based on the monthly reports of the producers, of the relation between the production of finished portland cement and the manufacturing capacity of the industry for each month in 1932 and for the 12 months ended with each month, indicate the seasonal changes in the utilization of capacity.

Ratio (percent) of finished portland cement produced to manufacturing capacity, 1931 and 1932

	Monthly		12 months ended—			Monthly		12 months ended—	
	1931	1932	1931	1932		1931	1932	1931	1932
January.....	29.5	22.0	60.6	45.9	July.....	62.0	33.4	53.8	34.2
February.....	29.4	18.7	59.7	45.2	August.....	60.2	34.2	52.0	32.1
March.....	36.9	21.3	58.6	43.8	September.....	55.3	36.9	50.2	30.6
April.....	52.1	24.8	57.7	41.7	October.....	47.4	34.6	48.6	29.6
May.....	62.8	30.2	56.5	38.9	November.....	37.2	29.1	44.4	29.0
June.....	65.4	35.7	55.2	36.5	December.....	26.4	18.5	46.5	28.3

The following table gives statistics of capacity by the two general methods—the “wet” and the “dry”—used in manufacturing portland cement at plants in the United States. The figures are based on the estimated capacity of the wet and dry process plants for the manufacture of finished cement. Statistics of production of both clinker and finished cement, by processes, appear on pages 503 and 504.

Portland-cement-manufacturing capacity of the United States, 1931 and 1932, by processes

Process	Estimated capacity				Percent of capacity utilized		Percent of total finished cement produced	
	Barrels		Percent of total		1931	1932	1931	1932
	1931	1932	1931	1932				
Wet.....	127,270,000	125,449,000	46.8	46.2	48.8	29.9	49.5	48.9
Dry.....	144,580,000	145,859,000	53.2	53.8	43.8	26.9	50.5	51.1
	271,850,000	271,308,000	100.0	100.0	46.1	28.3	100.0	100.0

SPECIAL CEMENTS

A number of types of cement are being manufactured and marketed in the United States in addition to the standard or “ordinary” portland cement. These have been developed in response to a demand for cement of certain pronounced qualities or characteristics, such as greater plasticity and high early strength. Such special cements as the white portland cement and plastic portland cement have long been produced and marketed in the United States and have been included in the statistics in Mineral Resources. The Bureau of Mines is not at liberty to publish figures on white portland cement separately. Alumina cement, a hydraulic cement noted especially for its attainment of high strength at early periods, has been manufactured in the United States for some years. A new plant for the manufacture of alumina cement has been reported recently constructed at San Pedro, Calif.

For some time the producers have reported “mixed” and “improved” cements among the natural cements noted for their plasticity and much used in masonry.

Figures on special cements in the United States in 1932, as reported to the Bureau of Mines by producers, show the following:

High-early-strength portland cement produced in the United States in 1932, as reported by producers, totaled 1,287,586 barrels and shipments from the mills 1,105,191 barrels, valued at \$1,915,215, an average value of \$1.73 per barrel. The figures represent the output of 19 plants in 12 States; corresponding data for 1931, which represent the output of 16 plants in 10 States, are: High-early-strength portland cement produced, 1,366,468 barrels; shipments, 1,422,633 barrels, valued at \$2,278,236, an average value of \$1.60 per barrel. These statistics may not be complete as reports may be lacking from 1 or 2 plants manufacturing cement of this type.

The output of masonry cement of the portland-cement class in the United States in 1932, as reported by producers, was 433,332 barrels and shipments from the mills 442,038 barrels, valued at \$581,255, an

average value of \$1.31 per barrel. These totals represent the production of 25 plants in 12 States. Corresponding figures for 1931, which represent the output of 24 plants in 12 States, are: Masonry cement produced, 677,451 barrels; shipments, 632,173 barrels, valued at \$1,041,486, an average value of \$1.65 per barrel.

Miscellaneous special cements (including so-called "oil-well" and "high-silica" portland cements and cement manufactured under the trade name "Super") produced in 1932 amounted to 413,644 barrels and shipments to 340,494 barrels, valued at \$577,175, an average of \$1.70 per barrel. Corresponding figures for 1931 are: Miscellaneous cement produced, 429,822 barrels; shipments, 404,161 barrels, valued at \$674,399, an average of \$1.67 per barrel.

NATURAL, MASONRY (NATURAL), AND PUZZOLAN CEMENTS

The term "masonry cement" is used here to designate certain cements made, like natural cements, by grinding calcined calcareous rock and used largely in mortar for laying brick and stone, although other hydraulic cements are also suitable for masonry and are being manufactured for this purpose in increasing quantities.

Natural cement, including masonry cement of the natural-cement class, was produced at and shipments were made from 10 plants in 1932, situated as follows: Utica, Ill.; Speed, Ind.; Fort Scott, Kans.; Kosmosdale, Ky.; Austin and Mankato, Minn.; Brixment and Rosendale, N. Y.; Lisbon, Ohio; and Siegfried, Pa.

Five manufacturers (with one plant each, located, respectively, at Birmingham and Graystone, Ala.; Superior, Ohio; Bessemer, Pa.; and Kenova, W. Va.) report an output of puzzolan or slag-lime cement.

The following table on the output of natural, masonry (natural), and puzzolan cements from 1928 to 1932 indicates a production of 456,785 barrels in 1932, more than 63 percent under 1931. Shipments of these cements from mills in 1932 decreased more than 57 percent in quantity and 57 percent in gross value compared with 1931. Stocks at the mills also declined and were more than 30 percent lower at the end of 1932 than at the end of 1931. The average factory value per barrel of the cement shipped from the mills was \$1.33 in 1932 and \$1.32 in 1931. Like portland cement, these cements are packed four sacks to the barrel and each sack holds about 1 cubic foot. The lower specific gravity of the non-portland cements accounts for their lighter weight per barrel, ordinarily 240 to 320 pounds. For statistical purposes, however, the output has been expressed in terms of 376-pound barrels to correspond with the figures for portland cement.

Producers reported that in 1932 6,720 short tons of coal and 1,025 short tons of coke were consumed in manufacturing these cements; they also stated that a small quantity of gas was used having a total fuel value equivalent to about 11 short tons of coal. The fuel consumption in 1931 was 16,598 short tons of coal and 4,240 short tons of coke plus small quantities of oil and gas having a total fuel value equivalent to about 112 short tons of coal.

At natural-cement plants in the United States where coal was reported as the only fuel used the average consumption in 1932 was 48 pounds of coal per barrel (376 pounds) of cement compared with an average consumption in 1931 of 40 pounds of coal per barrel of cement.

Natural, masonry (natural), and puzzolan cements produced, shipped, and in stock at mills in the United States, 1928-32

Year	Production		Shipments		Stock (Dec. 31)
	Active plants	Barrels (376 pounds)	Barrels (376 pounds)	Value	Barrels (376 pounds)
1928	11	2,210,404	2,213,645	\$2,910,097	137,357
1929	11	2,209,465	2,159,130	2,950,717	194,207
1930	11	1,792,083	1,787,016	2,469,531	202,416
1931	12 ¹	1,241,803	1,226,850	1,619,920	224,100 ¹
1932	15	456,785	524,844	696,474	156,041

¹ Revised figures.

FOREIGN TRADE IN CEMENT ³

IMPORTS

The figures in the following tables cover imports of hydraulic cement of all kinds. Imports of hydraulic cement into the United States in 1932—462,496 barrels—increased 1 percent compared with 1931.

The average of the values assigned to the imports, which are supposed to represent the values in the foreign countries from which the material is exported, including the cost of the containers or coverings, was \$0.76 per barrel, a decrease of 35 cents compared with 1931.

The Tariff Act of 1922 contained the following paragraph on the importation of hydraulic cement:

Par. 1543. Cement: Roman, portland, and other hydraulic: *Provided*, That if any country, dependency, province, or other subdivision of government imposes a duty on such cement imported from the United States, an equal duty shall be imposed upon such cement coming into the United States from such country, dependency, province, or other subdivision of government.

The Tariff Act of 1930, which went into effect June 18, 1930, displacing the Tariff Act of 1922, contained the following paragraph on the importation of hydraulic cement:

Par. 205. Roman, portland, and other hydraulic cement or cement clinker, 6 cents per 100 pounds, including the weight of the container; white, nonstaining, portland cement, 8 cents per 100 pounds, including the weight of the container.

Roman, portland, and other hydraulic cements imported into the United States, 1931 and 1932, by countries

[General imports]

Country	1931		1932	
	Barrels	Value	Barrels	Value
Belgium	99,202	\$114,256	73,519	\$63,533
Canada	1,378	2,239	251	763
Cuba	6,750	10,138	10,612	15,610
Denmark	184,967	195,587	124,513	92,469
France	649	1,485	411	1,118
French Indo-China	1	5	—	—
Germany	4,978	9,231	1,504	2,129
Japan	39,665	41,559	34,693	21,818
Spain	—	—	6	19
United Kingdom	109,383	121,675	216,897	153,674
Yugoslavia	10,265	11,743	—	—
	457,238	507,918	462,496	351,033

³ Figures on imports and exports compiled by C. Galher, of the Bureau of Mines, from records of the Bureau of Foreign and Domestic Commerce.

Roman, portland, and other hydraulic cements imported into the United States, 1931 and 1932, by districts

[General imports]

District	1931		1932	
	Barrels	Value	Barrels	Value
Florida.....	1, 213	\$1, 853		
Hawaii.....	39, 665	41, 559	34, 693	\$21, 818
Los Angeles.....	4, 983	9, 249	1, 351	2, 030
Maine and New Hampshire.....	536	1, 027	241	734
Maryland.....	4, 000	6, 000		
Massachusetts.....	51, 842	58, 697	43, 893	40, 001
Michigan.....	8	24		
New York.....	200, 038	221, 595	240, 933	173, 564
Oregon.....			604	407
Philadelphia.....		10, 478	293	149
Puerto Rico.....	146, 333	157, 378	130, 414	102, 937
San Francisco.....			10, 064	9, 364
Vermont.....	23	58	9	24
Washington.....			1	5
	457, 238	507, 918	462, 496	351, 033

Roman, portland, and other hydraulic cements imported into the United States in 1932, by countries and districts

[General imports]

Country and district	Barrels	Value	Country and district	Barrels	Value
Belgium:			France: New York.....	411	\$1, 118
Los Angeles.....	50	\$50	Germany:		
Massachusetts.....	43, 893	40, 001	Los Angeles.....	1, 301	1, 980
Oregon.....	604	407	Philadelphia.....	293	149
Puerto Rico.....	18, 910	13, 714		1, 594	2, 129
San Francisco.....	10, 062	9, 361	Japan: Hawaii.....	34, 693	21, 818
	73, 519	63, 533	Spain: Puerto Rico.....	6	19
Canada:			United Kingdom: New York.....	216, 897	153, 674
Maine and New Hampshire.....	241	734		462, 496	351, 033
Vermont.....	9	24			
Washington.....	1	5			
	251	763			
Cuba: Puerto Rico.....	10, 612	15, 510			
Denmark:					
New York.....	23, 625	18, 772			
Puerto Rico.....	100, 886	73, 694			
San Francisco.....	2	3			
	124, 513	92, 469			

In addition to the imports shown in the preceding tables, "white, nonstaining, portland cement" was recorded as "imported for consumption," as follows: 1931, 12,360 barrels, valued at \$27,855, of which 12,320 barrels, valued at \$27,786, were imported from France; 1932, 5,643 barrels, valued at \$12,214, of which 3,659 barrels, valued at \$6,398, were imported from France and 1,415 barrels, valued at \$3,820, from the United Kingdom. The following table includes these figures.

Hydraulic cement imported for consumption in the United States, 1928-32

Year	Barrels	Value	Year	Barrels	Value
1928.....	2,302,475	\$3,135,558	1931.....	460,598	\$535,773
1929.....	1,745,345	1,983,974	1932.....	468,139	363,247
1930.....	984,807	1,154,562			

EXPORTS

In 1932 the hydraulic cement exported to foreign countries and to the Philippine Islands and the Virgin Islands of the United States (most of it portland cement) decreased nearly 13 percent in quantity and more than 34 percent in value compared with 1931. The quantity exported in 1932 was about 0.4 percent of the total shipments of hydraulic cement from mills during the year and was the smallest since 1906.

The value of exports of domestic cement is their actual cost, when exported, at United States ports of export, as declared by the shipper on the export declarations. The average value at the ports in 1932 was \$2.14 a barrel compared with \$2.84 in 1931.

The destinations of exports were approximately as follows: South America, 107,000 barrels; Central America, 196,000 barrels (of which 176,000 barrels went to Panama); Mexico, 28,000 barrels; Cuba, 8,000 barrels; other West Indies and Bermudas, 9,000 barrels; Canada, 9,000 barrels; and other countries, 18,000 barrels.

Although the United States is the major cement-producing country of the world, its export trade has never attained large proportions; since 1925 it has been under 1,000,000 barrels.

Hydraulic cement exported from the United States, 1931 and 1932, by countries

Country	1931		1932	
	Barrels	Value	Barrels	Value
North America:				
Bermudas.....	7,996	\$14,061	3	\$20
Canada.....	27,512	103,942	9,141	35,003
Central America:				
British Honduras.....	37	145	7	28
Costa Rica.....	395	2,487	585	1,404
Guatemala.....	1,697	6,043	273	1,602
Honduras.....	17,720	40,172	18,453	31,827
Nicaragua.....	1,440	4,875	449	1,613
Panama.....	66,591	133,178	176,060	238,554
Salvador.....	480	2,921	301	1,716
Mexico.....	39,191	128,170	28,227	83,634
Newfoundland and Labrador.....	21	163	41	218
West Indies:				
British:				
Barbados.....	28	182		
Jamaica.....			17	96
Trinidad and Tobago.....	5	32	11	68
Other British.....	4,623	8,786	2,040	5,628
Cuba.....	35,800	83,683	7,810	20,016
Dominican Republic.....	4,921	8,511	1,365	2,225
French.....	788	1,986	151	330
Haiti.....	5,171	8,233	259	617
Netherland.....	7,520	12,014	4,647	8,212
Virgin Islands of the United States.....	568	1,630	104	245
	222,504	561,214	249,944	433,356

510 MINERALS YEARBOOK, 1932-33—STATISTICAL APPENDIX

Hydraulic cement exported from the United States, 1931 and 1932, by countries—Con.

Country	1931		1932	
	Barrels	Value	Barrels	Value
South America:				
Argentina.....	36,886	\$180,574	19,501	\$89,751
Bolivia.....	7,160	16,843	50	293
Brazil.....	7,592	40,032	6,235	33,009
Chile.....	1,649	9,630	207	1,076
Colombia.....	44,160	71,173	10,071	26,874
Ecuador.....	712	4,122	586	1,969
Guyana: French.....	330	769	165	355
Peru.....	1,599	6,408	392	2,196
Uruguay.....	8,942	45,094	3,858	18,095
Venezuela.....	69,409	122,883	65,610	110,878
	178,439	497,528	106,675	285,796
Europe:				
Azores and Madeira Islands.....	40	260	30	195
Belgium.....	920	4,708	1,638	7,630
Denmark.....	25	165		
France.....			8	60
Germany.....	1,244	6,893		
Greece.....	287	1,832	250	1,543
Irish Free State.....	139	847	133	440
Italy.....	5	25	1	8
Netherlands.....	358	2,061	230	1,267
Norway.....	390	2,467	220	1,430
Soviet Russia.....	38	273		
Spain.....	10	64	2	15
Sweden.....			21	127
Turkey ¹			13	22
United Kingdom.....	16,449	84,047	11,260	47,999
	18,905	103,642	113,796	160,894
Asia:				
Arabia.....	255	1,237		
China.....	600	3,649	427	2,564
East Indies:				
British:				
India.....	3,372	20,915	1,264	6,344
Malaya.....	1,458	8,499	330	1,657
Netherland:				
Java and Madura.....	565	3,235		
Other Netherland.....	95	577	276	1,551
Hong Kong.....	125	759	280	1,671
Japan.....	637	4,516	7	47
Palestine.....	1,534	9,105	695	3,842
Philippine Islands.....	91	688	147	765
Other Asia ¹	315	1,083	1,430	12,092
	9,047	54,263	13,856	120,533
Africa:				
British: Union of South				
Portuguese:	33	210	137	895
Mozambique.....	375	2,245	30	174
Other Portuguese.....			55	146
	408	2,455	222	1,215
Oceania:				
British:				
Australia.....			40	251
New Zealand.....	217	1,047		
Other British.....	132	448	47	180
French.....	1	3	1	10
	350	1,498	88	441
	429,653	1,220,600	374,581	802,205

¹ Turkey in Asia included for 1932 with Turkey in Europe.

Domestic hydraulic cement shipped to Alaska, Hawaii, and Puerto Rico, 1931 and 1932

	1931		1932	
	Barrels	Value	Barrels	Value
Alaska	14, 270	\$29, 699	12, 936	\$31, 082
Hawaii	270, 373	671, 858	226, 367	506, 449
Puerto Rico	68, 064	94, 733	57, 259	76, 804
	352, 707	796, 290	296, 562	614, 335

Hydraulic cement exported from the United States, 1928-32

Year	Barrels	Value	Percent of total shipments from mills	Year	Barrels	Value	Percent of total shipments from mills
1928	824, 656	\$2, 938, 702	0.5	1931	429, 653	\$1, 220, 600	0.3
1929	835, 321	3, 093, 217	.5	1932	374, 581	802, 205	.5
1930	755, 778	2, 454, 515	.5				

WORLD PRODUCTION

The accompanying table, copied from the Statistical Year Book of the League of Nations, 1932-33,^a gives data on the cement output of the world from 1928 to 1932. The figures are in thousands of metric tons (1 metric ton equals 2,204.6 pounds). The following statement prefaces the year book:

Throughout this volume the sign "—" indicates that the figure is nil or negligible, "..." indicates that the figures are not yet published, and "." that information is not available or is nonexistent. Decimal figures are preceded in the tables by a full stop and not a comma.

Cement production, in thousands of metric tons

Country	1928	1929	1930	1931	1932
Africa ¹	257	377	529	530	...
Algeria	52	58	68	...	...
Belgian Congo	41	60	64	45	16
Egypt ¹	90	180	300	240	...
Morocco (French)	60	65	74	150	220
Mozambique	14	21	23	24	30
North America	32, 204	31, 426	29, 670	23, 211	13, 937
Canada	1, 759	1, 945	1, 872	1, 619	737
United States	30, 445	29, 481	27, 798	21, 592	13, 200
Central America (Mexico)	216	225	...	...	...
South America ¹	480	640	657	830	...
Argentina	233	350	384	536	...
Brazil	88	96	87	167	...
Chile	111	145	161	102	110
Peru	48	49	25	...	...
Asia (excluding U.S.S.R.) ^{1, 2}	5, 000	5, 600	5, 000	5, 000	...
China (excluding South Manchuria) ³	93	185	178	235	...
French Indo-China	159	184	168	152	...
India	568	570	573	588	...
Japan ⁴	3, 841	4, 274	3, 748	3, 615	3, 731
Philippines	65	...	...	...	...
Turkey	59	65	57	100	...
U.S.S.R.	1, 903	2, 367	3, 115	3, 332	...

¹ Estimated.

² Asia, Oceania: Total includes estimate for other countries not mentioned.

³ China: Total shipments from "Custom ports."

⁴ Japan: Including Korea, Formosa, and Kwantung.

^a League of Nations Statistical Year Book, 1932-33: Geneva, 1933, p. 104.

Cement production, in thousands of metric tons—Continued

Country	1928	1929	1930	1931	1932
Europe (excluding U.S.S.R.) ¹	30,100	32,650	30,500	26,600	23,000
Austria.....	523	582	602	500	...
Belgium ²	3,046	3,248	3,050	...	...
Bulgaria.....	108	151	174	104	...
Denmark.....	779	799	779	509	...
Estonia.....	64	62	47	41	...
Finland.....	280	278	203	162	...
France.....	4,240	5,787	4,989	...	...
Germany ³	7,576	7,039	5,511	3,718	2,795
Greece.....	145	155	180	195	196
Hungary.....	426	403	329	296	...
Italy.....	3,077	3,497	3,482	3,077	3,177
Latvia.....	25	40	70	71	52
Norway.....	318	319	321	220	...
Poland.....	1,098	1,008	832	546	365
Portugal.....	76	88	99	95	121
Rumania.....	332	317	396	196	...
Saar.....	137	167	161	126	93
Spain.....	1,542	1,820	1,839	1,630	...
Sweden.....	468	570	611	518	...
Switzerland ⁴	630	690	790	850	800
United Kingdom.....	4,400	4,766	5,111	5,986	4,320
Yugoslavia.....	808	...	...	...	...
Oceania ⁵	970	920	900	550	...
Australia ⁷	766	720	708	396	...
Total ¹	71,100	74,200	70,600	60,300	...

¹ Estimated.² Asia, Oceania: Total includes estimate for other countries not mentioned.³ Belgium: Artificial cement.⁴ Germany: Works affiliated to the German Cement Association. The number of works not affiliated has considerably increased since 1929.⁵ 12 months ended June 30.**NOTE:**—The table covers as far as possible the total of natural cements and artificial cements, portland or other.

SOURCES:—National official statistics. U.S. Department of Commerce, Commerce Reports.

CEMENT PRODUCTION IN CANADA

According to the Dominion Bureau of Statistics the total mill output of portland cement in Canada in 1932 was 4,643,675 barrels. The shipments were 4,498,721 barrels, valued at \$6,930,721, compared with 10,161,658 barrels, valued at \$15,826,243, in 1931, 55.7 percent less in quantity and 56.2 percent in value. The average selling price over the whole Dominion, computed from the total quantity sold and the total value as given, was \$1.54 per barrel in 1932 and \$1.56 in 1931. The selling price in 1932, f.o.b. Canadian works, ranged from a low of \$1.25 to a high of \$2.55 per barrel.

Imports of portland cement in 1932 were 21,350 barrels having an average value of \$2.72 per barrel compared with an average of \$3.74 per barrel in 1931. Exports of portland cement were 53,333 barrels, valued at \$38,921.

Summary statistics of the cement industry in Canada, 1931 and 1932¹

	1931		1932	
	Barrels	Value	Barrels	Value
Output.....	10,197,964		4,643,675	
Sold or used.....	10,161,658	\$15,826,243	4,498,721	\$6,930,721
Stocks, Dec. 31.....	2,259,298		2,431,881	
Imports:				
Portland.....	38,392	143,491	21,350	58,092
Manufactures.....		13,243		6,883
Exports.....	114,064	124,267	53,333	38,921
Apparent consumption.....	10,085,986		4,466,738	

¹ Dominion Bureau of Statistics.

Cement is produced in the Provinces of Quebec, Ontario, Manitoba, Alberta, and British Columbia. In 1932 mills in Quebec produced 49.1 per cent of the total Canadian shipments; in Ontario, 35.6 per cent; in Manitoba, 5.4 per cent; in Alberta, 4.3 per cent; and in British Columbia, 5.6 per cent.

The Canadian cement plants used 41 rotary kilns with a total daily capacity of 43,622 barrels in 1932. The industry consumed 1,141,376 tons of limestone and 27,537 tons of gypsum. Six cement plants operating in Canada during 1932 employed the wet process and 5 the dry; 1 plant manufactured cement from purchased clinker. The total apparent consumption of cement in Canada declined 55.7 per cent from 1931, following the fall in building permits very closely. Some Canadian cement plants operated during the year at less than 30 per cent of their capacity.

In 1932 the Canadian cement industry consumed for all purposes 120,296 short tons of Canadian bituminous coal, valued at \$652,734, and 90,718 short tons of imported coal, valued at \$440,546; the industry also used 87,050 gallons of gasoline, valued at \$15,856, and 7,386 gallons of fuel and Diesel oil, worth \$960. Purchased electricity totaled 85,630,342 kilowatt-hours, valued at \$590,891. Electric motors with a total power rating of 75,493 horsepower were operated on purchased power.

The average selling price per barrel, by Provinces, in 1932, computed from the quantity sold and the value as given was: Quebec, \$1.43; Ontario, \$1.43; Manitoba, \$2.27; Alberta, \$2.07; and British Columbia, \$2.12.

The following table shows sales from mills in 1931 and 1932, by Provinces:

Cement sold by Canadian mills, 1931 and 1932, by Provinces¹

Province	1931		1932	
	Barrels	Value	Barrels	Value
Quebec.....	4,942,323	\$7,092,895	2,210,584	\$3,155,702
Ontario.....	3,470,056	5,006,826	1,599,342	2,288,975
Manitoba.....	544,160	1,267,893	242,112	549,594
Alberta.....	626,483	1,286,080	193,571	399,922
British Columbia.....	578,636	1,172,549	253,112	536,528
Canada.....	10,161,658	15,826,243	4,498,721	6,930,721

¹ Dominion Bureau of Statistics.

Cement-manufacturing companies in Canada in 1932, by Provinces

Name	Office	Works
Alberta:		
Canada Cement Co., Ltd.....	Box 290, Station B, Montreal, Quebec Province.	Exshaw.
Marlboro Cement Co., Ltd.....	Dominion Bank Building, Ed- monton.	Marlboro.
British Columbia:		
British Columbia Cement Co., Ltd.	Belmont Building, Victoria.....	Bamberton.
Coast Cement Co., Ltd.....	Granville Island, Vancouver.....	Granville Island.
Manitoba:		
Canada Cement Co., Ltd.....	Box 290, Station B, Montreal, Quebec Province.	Fort Whyte.
Ontario:		
Canada Cement Co., Ltd.....	.....do.....	Belleville, Lakefield, and Port Colborne.
St. Marys Cement Co., Ltd.....	357 Bay Street, Toronto.....	St. Marys.
Quebec:		
Canada Cement Co., Ltd.....	Box 290, Station B, Montreal.....	Hull and Montreal East.
National Cement Co., Ltd.....	Box 170, Station Hochelaga, Montreal.	Montreal East.