

---

---

**REPORTS FOR INDUSTRIES**

---

---

# MINES AND QUARRIES—COAL

## INTRODUCTION

**Scope of the report.**—This report gives the results of the census of mines and quarries for 1929 for the coal-mining industries comprising the production of coal of all kinds—anthracite, bituminous coal, lignite, and intermediate varieties. It shows the progress of the industries by comparison of the results of the census for 1929 with those for the last three preceding censuses of mines and quarries; the geographic distribution of the industries by States and by principal producing counties; the size of operating enterprises; power equipment, by kind, number, and capacity; time in operation for enterprises and length of working week for wage earners; the numbers of persons engaged in the industry, classified as proprietors and firm members, salaried officers and employees, and wage earners; fuel consumption, by kind; and marketing channels through which coal moved from the producing enterprises. It includes also a table presenting statistics in detail for the United States as a whole and for those States for which separate figures can be given without disclosing, exactly or approximately, the data reported by individual enterprises.

**Nonproducing and small mines.**—Nonproducing mines (development only) operated as separate enterprises represented an insignificant part of the coal-mining industries. Only 19 such enterprises were reported, and these expended a total of \$281,519 on development work. The number and total production of mines too small to fall within the scope of the census (producing less than 1,000 tons) are not ascertainable for 1929. However, based upon special studies made for certain earlier years by the Bureau of Mines, there is a large number (probably as many as 1,000) of these supplying coal for local domestic consumption and small manufacturing enterprises. The total annual production of such mines has been roughly estimated from one-half million tons to as high as 1,000,000 tons for different years. Data for these nonproducing and small mines are not included in any of the tables of this report.

**Development work and preparation operations.**—The statistics given include data for development work performed to advance the mining operations, as well as those for washing, crushing, screening, and other processes of preparation of the product.

**Other operating income reported.**—Segregated returns for coal mining were secured in most cases in which coal and clay or other minerals were produced by the same enterprise, usually in connection with the manufacture of clay products. Data for products other than coal included in the statistics of this report are shown in the following statement:

INDUSTRY	OTHER OPERATING INCOME REPORTED			
	Total	Electric energy sold	Services performed for others	Miscellaneous receipts
Total.....	\$1, 086, 772	\$490, 501	\$330, 463	\$265, 808
Anthracite (Pennsylvania).....	100, 289	47, 690	42, 474	10, 219
Bituminous coal.....	986, 483	442, 805	287, 989	255, 589

**Varieties of coal.**—Statistics are presented for the two main classes of coal produced in the United States—anthracite and bituminous coal. The statistics for anthracite relate only to its production in Pennsylvania by collieries, washeries, and dredges. The statistics for the bituminous-coal industry cover all other coal-mining activity, without regard to kind or quality of the product. Moreover, statistics by kinds of coal could not be satisfactorily presented for a number of States, however desirable such presentation might be, on account of the necessity to avoid disclosure of data for individual operations.

**Method of reporting quantity and value of products.**—The schedules used in this census called for data on the quantities of coal mined in 1929, to which other statistics given in the report apply. Data for coal consumed by mining enterprises themselves, as well as that supplied to miners and otherwise locally consumed, are included in the production figures.

**Differences in the United States Bureau of Mines and the Bureau of the Census reports.**—Table 1 gives figures for production of coal as reported by the United States Bureau of Mines and by the Bureau of the Census. The differences in the bituminous-coal figures are accounted for principally as follows: (1) Differences in the figures reported to the two bureaus by the operators, either in error, or for different periods (calendar year versus fiscal year); (2) certain reports were obtained by visits of field representatives of the Census Bureau to operators who did not report to the Bureau of Mines. The differences in the figures for anthracite are accounted for as explained in (1) for bituminous coal and, further, by some duplication due to the sale or transfer by some producers to other operators who prepared (cleaned, sized, etc.) the coal for market. This duplication was eliminated, it is believed, in all except a few cases, but these accounted for approximately one-half of the difference shown.

In general the two sets of figures agree very closely, and as they were obtained independently, each confirms the other. Thus, for bituminous coal, which is the largest of the mineral industries, the discrepancy

between the two records is less than one-half of 1 per cent in tonnage and 1.4 per cent in value. These differences were quite uniformly distributed among the various States. For anthracite, the differences are 1 per cent in tonnage and two-tenths of 1 per cent in value.

TABLE 1.—COMPARISON OF PRODUCTION AND VALUE AS REPORTED BY BUREAU OF THE CENSUS AND BY BUREAU OF MINES, FOR THE UNITED STATES: 1929

INDUSTRY	BUREAU OF THE CENSUS		BUREAU OF MINES <sup>1</sup>	
	Coal produced		Coal produced	
	Quantity (tons, 2,000 pounds)	Value	Quantity (tons, 2,000 pounds)	Value
United States.....	611,988,395	\$1,350,461,290	608,816,788	\$1,338,424,000
Anthracite (Pennsylvania).....	74,545,900	384,754,011	73,828,195	385,043,000
Bituminous coal.....	537,442,495	965,707,288	534,988,593	953,381,000

<sup>1</sup> Mineral Resources of the United States, 1929.

### PRINCIPAL STATISTICS

Summary for the United States: 1929 (Table 2).—This table presents, for the United States as a whole, the principal statistics for anthracite and bituminous-coal mines, separately, and the combined totals for all coal mines. The number of enterprises, 5,174, represents the number of individual returns received,

not the number of individual operators. Operators were permitted to make combined returns covering two or more mines within a single county, and in other cases individual returns for each mine operated were received. The number of individual operators is, therefore, considerably smaller than the number of enterprises shown.

TABLE 2.—SUMMARY FOR THE UNITED STATES: 1929

[This and all following tables cover producing enterprises only]

	Total	ANTHRACITE (Pennsylvania)		BITUMINOUS COAL	
		Number or amount	Per cent of total	Number or amount	Per cent of total
Number of enterprises <sup>1</sup> .....	5,174	198	3.8	4,976	96.2
Number of mines, collieries, culm washeries, and dredges.....	5,923	303	5.1	5,620	94.9
Persons engaged, total.....	633,035	150,494	23.8	482,541	76.2
Proprietors and firm members.....	3,021	38	1.3	2,983	98.7
Salaried officers and employees <sup>2</sup> .....	28,481	7,655	26.9	20,826	73.1
Wage earners (average for the year) <sup>3</sup> .....	601,533	142,801	23.7	458,732	76.3
Power equipment, total horsepower.....	4,165,652	1,041,405	25.0	3,124,187	75.0
Principal expenses, total <sup>4</sup> .....	\$1,083,637,347	\$313,400,536	28.9	\$770,236,811	71.1
Salaries <sup>5</sup> .....	\$68,175,960	\$19,335,030	28.4	\$48,840,930	71.6
Wages.....	\$304,767,131	\$220,067,059	28.6	\$574,800,072	71.4
Contract work.....	\$8,691,435	\$6,801,808	78.3	\$1,889,627	21.7
Supplies.....	\$149,805,887	\$43,367,491	29.0	\$106,438,396	71.0
Fuel.....	\$14,049,026	\$7,419,721	49.6	\$7,529,305	50.4
Purchased electric energy.....	\$37,247,908	\$6,568,527	17.5	\$30,739,381	82.5
Expenditures for development (included above in "Principal expenses").....	\$24,548,000	\$7,902,000	32.2	\$16,646,000	67.8
Value of products, total <sup>6</sup> .....	\$1,351,548,071	\$384,854,300	28.5	\$966,693,771	71.5
Coal—					
Quantity (tons, 2,000 pounds).....	611,988,395	74,545,900	12.2	537,442,495	87.8
Value at mine.....	\$1,350,461,290	\$384,754,011	28.5	\$965,707,288	71.5
Other products <sup>7</sup> .....	\$1,086,772	\$100,289	9.2	\$986,483	90.8

<sup>1</sup> See GENERAL EXPLANATIONS—The Enterprise.

<sup>2</sup> Includes 241 collieries (which also operated 11 washeries), 42 dredges, and 9 washeries operated independently.

<sup>3</sup> Not including data for salaried officers and employees of "Central Administrative" offices. (See Table 20.)

<sup>4</sup> See GENERAL EXPLANATIONS—Persons Engaged.

<sup>5</sup> See GENERAL EXPLANATIONS—Expenses.

<sup>6</sup> See GENERAL EXPLANATIONS—Value of Products.

<sup>7</sup> Miscellaneous secondary products, and receipts for services performed for others and for power sold.

The bituminous-coal industry ranked first in the value of products among the mining industries canvassed in the census for 1929. The total value of products reported (\$966,693,771) was 40.4 per cent of the total value of products of all mining industries (\$2,392,831,178) in 1929; and the number of wage earners employed (458,732) constituted 56.9 per cent of the total number of wage earners (806,418) employed in all mining enterprises in the United States.

The anthracite industry ranked second in value of products, being exceeded only by the bituminous-coal industry. The total value of products reported by the 198<sup>1</sup> enterprises (\$384,854,300) was 16.1 per cent of the total for all industries, and the number of wage

earners employed (142,801) constituted 17.7 per cent of the total employed in all mining enterprises in the United States.

<sup>1</sup> Number of collieries, washeries, and dredges reported for the anthracite industry.—The term "colliery" is used in this report to designate a single unit producing fresh-mined anthracite. If coal from several mine openings was prepared at one breaker, this has been counted as one colliery. A few enterprises which did not operate breakers in connection with their mining operations are also counted as collieries. The total number of collieries thus defined was 241. In addition to fresh-mined coal operations, collieries operated 11 culm-bank washeries, data for which are included with those for collieries. There were also 42 dredges, and 9 culm-bank washeries operated independently of collieries. The total number of collieries, dredges, and washeries (303) is distributed, therefore, as follows: Collieries, 241 (with which were reported 11 washeries); dredges, 42; and independently operated washeries, 9. (See GENERAL EXPLANATIONS—The Enterprise.)

In Table 5, the number of collieries, washeries, and dredges (292), as well as the statistics given, represent the entire industry, although the count does not include 11 washeries operated by collieries. The number is comparable with 361 for 1919, 420 for 1909, and 334 for 1902. Similarly, the number of collieries only (241), shown in Tables 10 and 16, does not include the count of washeries operated by collieries and is comparable with the number (261) shown for 1919.

Rank of States.—Table 3 gives the rank of coal-producing States according to the total value of products. The four leading States contributed 71.4 per cent of the total for bituminous coal, while the remainder was reported from 25 States. Pennsylvania contributed 47.9 per cent of the total value of

products for the coal-mining industries, while the next ranking State, West Virginia, accounted for 16.1 per cent of the total.

Table 4 gives the rank of coal-producing States according to the quantity produced for 1929 and 1919.

TABLE 3.—STATES RANKED ACCORDING TO VALUE OF PRODUCTS: 1929

STATE	Number of enterprises	Number of mines <sup>1</sup>	Wage earners (average for the year)	Value of products	STATE	Number of enterprises	Number of mines <sup>1</sup>	Wage earners (average for the year)	Value of products
United States.....	5, 174	5, 923	601, 533	\$1, 351, 548, 071	Wyoming.....	35	50	4, 693	\$17, 118, 580
Anthracite (Pennsylvania).....	198	303	142, 801	384, 854, 300	Utah.....	36	40	3, 452	13, 145, 832
Bituminous coal.....	4, 976	5, 620	458, 732	966, 683, 771	Iowa.....	167	172	5, 042	11, 832, 816
Pennsylvania.....	1, 349	1, 690	263, 801	647, 310, 957	Oklahoma.....	97	113	4, 716	10, 789, 776
Anthracite.....	198	303	142, 801	384, 854, 300	Missouri.....	186	190	4, 667	9, 667, 708
Bituminous coal.....	1, 151	1, 387	121, 000	262, 456, 657	Tennessee.....	65	78	6, 822	9, 369, 074
West Virginia.....	680	830	99, 217	217, 022, 962	Washington.....	32	38	2, 835	8, 639, 730
Illinois.....	384	401	49, 517	114, 617, 799	New Mexico.....	28	43	3, 120	8, 324, 312
Kentucky.....	434	500	54, 904	95, 647, 018	Montana.....	66	68	1, 983	7, 448, 138
Alabama.....	167	183	24, 781	38, 564, 531	Kansas.....	150	155	3, 405	6, 952, 820
Ohio.....	536	561	21, 739	36, 916, 271	Arkansas.....	83	86	3, 651	0, 172, 710
Indiana.....	222	235	12, 890	31, 501, 930	Maryland.....	52	63	3, 042	4, 745, 279
Colorado.....	173	176	10, 420	26, 553, 407	North Dakota.....	115	115	904	3, 200, 931
Virginia.....	75	88	11, 956	21, 162, 036	Texas.....	22	26	1, 235	1, 074, 171
					Oregon.....	3	3	33	85, 003
					Other States <sup>2</sup> .....	21	22	1, 458	3, 077, 656

<sup>1</sup> For anthracite, includes collieries, washeries, and dredges. See footnote, p. 254.  
<sup>2</sup> Arizona, 4 enterprises; Georgia, 1; Michigan, 7; North Carolina, 1; South Dakota, 8. See headnote, Table 27.

TABLE 4.—LEADING STATES RANKED ACCORDING TO QUANTITY OF BITUMINOUS COAL PRODUCED: 1929 AND 1919

STATE	1929		1919		STATE	1929		1919	
	Rank	Coal produced, tons (2,000 pounds)	Rank	Coal produced, tons (2,000 pounds)		Rank	Coal produced, tons (2,000 pounds)	Rank	Coal produced, tons (2,000 pounds)
Pennsylvania.....	1	144, 111, 440	1	150, 029, 687	Iowa.....	13	4, 285, 368	11	5, 474, 240
West Virginia.....	2	139, 031, 057	2	77, 617, 115	Missouri.....	14	3, 063, 458	15	3, 783, 714
Kentucky.....	3	60, 894, 039	5	23, 426, 018	Oklahoma.....	15	3, 795, 174	16	3, 782, 704
Illinois.....	4	60, 705, 123	3	60, 380, 650	Montana.....	16	3, 442, 518	17	3, 211, 719
Ohio.....	5	24, 091, 756	4	35, 140, 541	Kansas.....	17	2, 986, 190	12	5, 204, 358
Indiana.....	6	18, 024, 508	6	20, 504, 791	Maryland.....	18	2, 638, 216	19	2, 997, 336
Alabama.....	7	18, 180, 463	7	15, 411, 436	New Mexico.....	19	2, 631, 512	18	3, 185, 484
Virginia.....	8	12, 745, 100	9	9, 334, 786	Washington.....	20	2, 602, 030	20	2, 980, 910
Colorado.....	9	9, 832, 839	8	10, 182, 512	North Dakota.....	21	1, 853, 604	24	767, 095
Wyoming.....	10	6, 700, 272	10	7, 212, 006	Arkansas.....	22	1, 823, 524	22	1, 440, 493
Tennessee.....	11	5, 405, 023	13	5, 132, 167	Texas.....	23	1, 106, 397	21	1, 588, 240
Utah.....	12	5, 131, 634	14	4, 592, 847					

PROGRESS OF THE INDUSTRY

Summary for the United States, 1902-1929, and for selected States, 1929 and 1919 (Table 5).—This table presents, for coal mines as a whole, and for anthracite and bituminous-coal mines, the principal statistics as reported at the last four censuses of mines and quarries, and by States for 1929 and 1919. For the periods 1902-1909 and 1909-1919 practically all items in the table show substantial increases, while the figures for 1929 show decreases as compared with 1919 for most of the items shown for the coal-mining industries. The decrease in the number of mines represents mainly the elimination of a considerable number of smaller and high-cost mines, many of which came into existence during the war period or were the result of abnormal conditions which prevailed in the bituminous-coal

industry in 1919. The decreases in the principal items of expense are due principally to the lower price levels in 1929. The anthracite industry suffered a decline of 15.5 per cent from the production in 1919 to 74,545,900 short tons in 1929, or 7.5 per cent less than the average annual production as reported by the United States Bureau of Mines for the decade 1919-1928. The production of bituminous coal in 1929, however, was 5.3 per cent greater than the average annual output for 1920-1929, while that for 1919 was exceptionally low on account of abnormal conditions. The figures, therefore, while reflecting the activities in the industries for the years specified, do not represent the true trend of change. (See Table 7 for production by years.)



Increase in population and in production of coal (all kinds): 1829-1929 (Table 6).—The production of coal per capita increased appreciably for each decade up to 1909. The figures for 1909, 1919, and 1929 represent substantially the same output per capita,

and reflect the influence of competitive sources of fuel and power supplies (principally petroleum and natural gas), as well as the increase of efficiency in coal utilization upon the rate of growth of the bituminous-coal industry.

TABLE 6.—INCREASE IN POPULATION AND IN PRODUCTION OF COAL, FOR THE UNITED STATES: 1829-1929

YEAR	POPULATION		COAL			YEAR	POPULATION		COAL		
	Number <sup>1</sup>	Per cent of increase over preceding census	Tons <sup>2</sup> (2,000 pounds)	Per cent of increase over preceding decade	Tons per capita		Number <sup>1</sup>	Per cent of increase over preceding census	Tons <sup>2</sup> (2,000 pounds)	Per cent of increase over preceding decade	Tons per capita
1829	12,866,020	-----	240,086	-----	0.02	1880	62,947,714	25.5	141,229,513	107.4	2.24
1839	17,069,453	32.7	1,560,360	549.9	0.09	1890	75,994,575	20.7	253,741,192	79.7	3.34
1849	23,191,876	35.9	6,448,831	313.3	0.28	1909	91,972,266	21.0	400,814,616	81.6	5.01
1859	31,443,321	35.6	15,633,175	142.4	0.50	1919	105,710,620	14.9	553,952,259	20.2	5.24
1869	38,558,371	22.6	32,904,360	110.5	0.85	1929	122,775,046	16.1	608,816,788	9.9	4.90
1879	50,155,783	30.1	68,105,769	107.0	1.36						

<sup>1</sup> As enumerated in following year.

<sup>2</sup> Mineral Resources of the United States, published by U. S. Geological Survey, 1829-1919, and by U. S. Bureau of Mines, 1929. Statistics for Alaska included.

Production of coal: 1829-1929.—Table 7, compiled from the reports of the United States Geological Survey for the period 1829-1923, and from those of the

United States Bureau of Mines for the years from 1924 to 1929, shows the production of anthracite and bituminous coal in the United States.

TABLE 7.—PRODUCTION OF COAL: 1829-1929 <sup>1</sup>

YEAR	COAL PRODUCED, TONS (2,000 POUNDS)			YEAR	COAL PRODUCED, TONS (2,000 POUNDS)		
	Total	Anthracite	Bituminous		Total	Anthracite	Bituminous
1829	240,086	138,086	102,000	1907	480,363,424	85,604,312	394,759,112
1839	1,560,360	1,008,322	552,038	1908	415,842,698	83,268,754	332,573,944
1840	6,448,831	3,995,334	2,453,497	1909	460,814,616	81,070,369	379,744,257
1850	15,633,175	9,619,771	6,013,404	1910	501,590,378	84,485,236	417,111,142
1860	32,904,360	17,083,134	15,821,220	1911	496,371,126	90,464,067	405,907,059
1870	68,105,799	30,207,793	37,898,006	1912	534,466,580	84,361,598	450,104,982
1880	141,229,513	45,546,970	95,682,543	1913	569,960,210	91,524,922	478,435,297
1890	167,770,903	46,468,641	111,302,322	1914	513,525,477	90,821,507	422,703,970
1891	168,506,669	50,665,431	117,901,238	1915	531,619,487	88,965,061	442,654,426
1892	179,329,071	52,472,504	126,856,567	1916	590,098,175	87,578,493	502,519,682
1893	182,352,774	53,967,543	128,385,231	1917	651,402,374	99,611,811	551,790,563
1894	170,741,526	51,921,121	118,820,405	1918	678,211,904	98,826,084	579,385,820
1895	193,117,530	67,999,337	135,118,193	1919	563,952,259	88,062,201	465,890,058
1896	191,986,357	54,346,081	137,640,276	1920	668,264,932	89,598,249	568,666,683
1897	200,229,199	52,611,680	147,617,519	1921	506,395,401	90,473,451	415,921,950
1898	219,976,267	53,382,644	166,593,623	1922	476,951,121	54,683,022	422,268,099
1899	253,741,192	60,418,005	193,323,187	1923	657,903,671	93,339,009	564,564,662
1900	269,684,027	57,867,915	212,316,112	1924	571,613,400	87,926,862	483,686,538
1901	293,209,816	67,471,667	225,828,149	1925	581,869,890	61,817,149	520,052,741
1902	301,590,439	41,373,595	260,216,844	1926	657,804,437	84,437,452	573,366,985
1903	357,356,416	74,007,068	282,749,348	1927	597,858,916	80,095,564	517,763,352
1904	351,816,398	78,166,709	278,659,689	1928	576,093,039	75,348,069	500,744,970
1905	392,722,635	77,659,850	315,062,785	1929	608,816,788	73,828,195	534,988,593
1906	414,157,278	71,282,411	342,874,867				

<sup>1</sup> Mineral Resources of the United States, published by U. S. Geological Survey, 1829-1923, and by U. S. Bureau of Mines, 1924-1929. Statistics for Alaska included.

GEOGRAPHIC DISTRIBUTION

Summary, by States, for selected counties: 1929 (Table 8).—This table gives principal statistics for all counties in which the production of coal in 1929 was

100,000 tons or more, for which figures can be shown without disclosing, exactly or approximately, the data for individual operations.



TABLE 8.—SUMMARY FOR LEADING STATES AND COUNTIES: 1929—Continued

STATE AND COUNTY	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	Cost of supplies	Cost of fuel	Cost of purchased electric energy	Coal produced, tons	Value of all products	HORSEPOWER RATING OF POWER EQUIPMENT	
										Prime movers	Electric motors driven by purchased energy
Iowa, total.....	167	172	5,942	\$7,820,875	\$980,425	\$121,069	\$227,112	4,285,368	\$11,832,816	7,120	18,643
<i>Counties</i>											
Appanoose.....	42	44	1,050	1,114,144	87,951	1,140	35,692	572,034	1,621,803	346	2,535
Boone.....	7	9	763	1,040,055	115,804	10,974	30,713	487,870	1,519,228	724	2,715
Dallas.....	4	4	532	732,941	105,008	3,102	3,582	421,112	1,156,609	100	3,479
Marion.....	17	17	881	1,381,013	169,470	38,772	31,188	795,144	1,957,311	1,747	1,832
Monroe.....	11	11	687	850,324	151,780	6,523	24,535	514,588	1,258,347	780	1,935
Folk.....	12	12	779	1,061,878	145,004	19,065	41,466	519,450	1,552,639	535	3,452
Other counties.....	74	75	1,270	1,640,190	213,468	41,493	20,986	974,755	2,767,019	2,888	2,695
Kansas, total.....	150	155	3,405	3,617,171	710,406	121,730	135,457	2,986,190	6,952,820	11,237	7,311
<i>Counties</i>											
Cherokee.....	46	46	388	468,201	90,337	23,600	11,967	489,898	1,045,196	1,513	1,017
Crawford.....	80	84	2,641	2,812,556	555,185	77,859	112,795	2,363,519	5,372,242	9,128	5,225
Other counties.....	24	25	376	336,394	64,884	15,271	10,725	142,773	535,391	598	1,069
Kentucky, total.....	434	500	54,904	60,155,095	10,923,814	564,584	2,977,508	60,894,039	95,647,618	59,022	231,963
<i>Counties</i>											
Bell.....	36	40	3,400	3,036,362	384,387	23,252	187,972	2,871,507	4,688,160	1,745	10,325
Breathitt.....	6	7	283	216,741	19,132	3,800	5,703	204,523	308,091	550	222
Clay.....	7	7	173	147,100	10,220	6,858	4,200	112,954	199,152	437	50
Daviess.....	7	7	116	107,861	13,945	755	100	131,145	191,322	223	5
Floyd.....	36	43	4,310	5,031,242	839,159	55,000	251,376	4,837,509	8,025,641	3,062	16,614
Harlan.....	52	57	10,743	14,721,770	3,101,077	47,150	742,134	14,087,721	24,873,087	8,224	41,559
Henderson.....	12	12	330	296,591	38,872	10,174	3,443	317,747	449,410	2,010	137
Hopkins.....	29	39	4,248	3,552,037	845,464	10,674	241,619	4,371,696	5,223,468	2,445	52,599
Johnson.....	10	10	1,289	1,465,497	240,635	12,610	75,060	1,238,712	2,730,497	1,658	7,140
Knott.....	4	4	369	408,660	35,034	30,317	30,317	425,170	620,267	794	2,033
Knox.....	8	9	421	270,365	29,930	105,361	9,827	269,233	404,400	6,372	925
Letcher.....	31	35	6,232	6,990,409	1,308,153	105,361	275,032	6,578,139	11,237,501	28,220	28,220
McCreary.....	9	10	882	989,427	282,143	61,154	1,011,300	1,786,332	1,786,332	6,276	940
Martin.....	4	4	287	270,323	32,105	4,974	17,855	353,717	440,415	350	940
Muhlenberg.....	32	36	4,570	4,212,505	634,988	110,181	140,133	5,017,254	5,836,523	8,358	7,912
Ohio.....	9	10	1,181	846,571	135,910	15,726	61,305	953,635	1,122,610	2,166	3,330
Perry.....	39	48	5,264	5,809,223	747,115	70	419,532	5,831,770	9,288,733	22,000	22,000
Pike.....	39	47	5,714	7,258,443	1,450,693	49,483	322,245	7,217,893	12,002,120	8,845	17,418
Union.....	9	11	1,013	950,737	173,669	44,649	27,107	1,073,088	1,233,204	2,585	5,234
Webster.....	18	25	2,433	2,117,393	373,632	19,931	102,241	2,533,002	2,910,611	2,455	9,005
Whitley.....	10	11	848	849,085	98,357	18,635	200	528,472	1,113,060	2,853	14
Other counties.....	27	23	763	581,833	120,094	25,239	8,733	830,172	901,487	2,739	845
Maryland, total.....	52	63	3,042	3,114,226	540,026	24,800	129,680	2,633,216	4,745,270	3,364	3,030
<i>Counties</i>											
Allegany.....	41	52	2,317	2,324,327	395,704	7,237	94,680	1,843,312	3,473,918	1,039	5,855
Garrett.....	11	11	725	789,899	144,262	17,632	35,000	794,904	1,271,363	2,325	2,395
Missouri, total.....	186	190	4,657	5,150,437	1,145,653	136,956	241,816	3,903,453	9,667,708	12,725	22,037
<i>Counties</i>											
Adair.....	14	14	289	245,070	34,901	7,617	3,966	136,153	325,424	611	60
Barton.....	22	23	782	1,153,503	502,417	32,091	133,969	1,595,113	3,349,205	3,814	6,899
Bates.....	17	18	234	204,802	80,308	11,772	5,744	295,982	601,627	1,784	981
Henry.....	9	9	126	170,597	109,489	16,462	17,376	269,147	504,439	851	1,415
Lafayette.....	17	19	335	921,923	92,776	17,004	12,200	445,877	1,215,900	1,854	923
Macon.....	11	11	400	407,342	58,652	12,518	4,201	218,119	561,813	1,155	298
Randolph.....	14	14	305	302,122	33,684	8,418	7,014	162,014	437,423	230	3,015
Ray.....	21	21	638	906,453	107,315	6,398	33,701	444,244	1,403,697	593	7,304
Other counties.....	61	61	748	773,075	120,126	23,710	18,555	395,009	1,202,820	1,833	1,692
Montana, total.....	66	68	1,983	3,420,551	813,641	37,462	156,490	3,442,513	7,448,138	8,941	19,955
<i>Counties</i>											
Carbon.....	9	9	351	1,134,336	260,630	15,375	50,023	757,132	2,119,753	3,465	5,050
Cascade.....	17	18	238	377,625	52,288	16,135	16,135	265,004	693,032	30	2,509
Musselshell.....	11	12	778	1,612,317	232,346	20,116	65,533	1,102,846	2,573,193	3,413	3,376
Other counties.....	29	29	616	896,773	268,371	1,971	24,699	1,317,486	2,001,530	2,033	9,011
New Mexico, total.....	28	43	3,120	4,537,017	859,312	90,969	167,294	2,631,512	8,324,312	6,595	14,218
<i>Counties</i>											
McKinley.....	9	10	1,165	1,762,751	370,295	60,591	17,337	934,306	3,029,801	6,805	1,475
Other counties.....	19	33	1,955	2,824,266	489,017	30,378	149,957	1,697,206	5,294,511	2,790	12,743

See footnotes at end of table.



## MINES AND QUARRIES

TABLE 8.—SUMMARY FOR LEADING STATES AND COUNTIES: 1929—Continued

STATE AND COUNTY	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	Cost of supplies	Cost of fuel	Cost of purchased electric energy	Coal produced, tons	Value of all products	HORSEPOWER RATING OF POWER EQUIPMENT	
										Prime movers	Electric motors driven by purchased energy
Ohio, total.....	536	561	21,730	\$24,446,830	\$3,894,114	\$244,611	\$1,173,371	24,091,756	\$36,916,271	31,751	81,226
<i>Counties</i>											
Athens <sup>a</sup> .....	37	44	3,521	3,491,163	592,796	36,520	163,321	3,145,211	4,566,626	6,100	11,002
Belmont.....	49	52	6,182	6,988,877	1,129,792	36,732	306,041	7,284,721	10,419,870	8,183	23,044
Carroll.....	23	25	355	415,043	45,863	613	22,375	392,336	660,052	300	1,214
Columbiana.....	23	23	328	307,040	55,010	1,261	20,267	267,077	488,653	1,027	1,221
Coshocton.....	27	27	199	197,220	25,504	384	9,541	180,201	311,224	638	525
Guernsey.....	20	30	1,337	1,803,682	285,306	11,703	109,301	1,730,009	2,599,333	1,426	5,062
Harrison.....	22	24	1,310	1,948,591	510,801	40,320	118,919	2,718,618	3,048,001	3,247	8,482
Hocking <sup>b</sup> .....	27	27	630	529,343	74,098	.....	24,608	505,990	764,171	580	1,102
Jackson.....	14	15	204	218,265	20,280	8,001	1,500	127,472	303,913	401	1,186
Jefferson.....	47	50	3,393	3,762,805	489,843	43,494	107,375	3,592,003	5,934,599	4,331	13,400
Lawrence.....	16	18	146	173,350	32,811	.....	.....	132,371	289,711	16	.....
Meigs.....	21	21	727	677,925	112,464	8,091	31,568	689,301	1,029,245	368	2,716
Muskingum.....	36	36	311	283,610	15,463	.....	15,012	245,073	477,407	185	541
Perry.....	36	36	600	595,578	105,828	488	39,714	550,786	816,916	402	6,394
Stark.....	35	36	446	595,705	59,705	8,929	33,309	374,005	990,796	523	1,907
Tuscarawas.....	57	60	1,035	1,319,400	165,025	28,031	60,151	1,103,810	1,866,289	1,629	3,363
Other counties.....	37	37	1,015	1,224,249	166,935	17,438	20,369	1,052,742	1,749,415	2,395	1,067
Oklahoma, total.....	97	113	4,716	6,392,491	1,384,565	125,131	293,373	3,795,174	10,789,776	11,023	16,166
<i>Counties</i>											
Haskell.....	4	8	159	174,592	64,930	5,015	6,274	156,650	402,706	1,002	390
Latimer.....	10	10	395	399,678	71,308	20,016	18,535	201,725	639,569	455	1,060
Le Flore.....	31	32	905	1,191,637	153,297	13,068	53,677	695,637	1,957,462	973	3,323
Oklmulgee.....	15	16	894	1,249,348	191,530	13,803	41,650	768,206	1,923,018	890	2,303
Pittsburg.....	17	24	1,692	2,689,997	414,576	45,815	146,393	1,323,195	4,082,898	3,246	9,080
Tulsa.....	6	7	307	384,792	131,490	7,126	18,238	234,810	664,043	2,155	1,392
Other counties.....	14	16	894	461,487	385,434	20,289	11,656	415,351	1,120,090	2,992	802
Pennsylvania, total.....	1,151	1,337	121,000	157,730,207	27,914,503	1,815,514	8,674,753	144,111,440	262,466,657	180,855	756,392
<i>Counties</i>											
Allegheny.....	117	133	12,809	18,246,787	3,304,764	134,777	878,792	16,058,177	28,721,732	17,622	80,860
Armstrong.....	56	60	4,289	4,914,362	708,597	6,947	387,835	4,474,255	7,202,931	1,524	37,763
Beaver.....	14	14	187	197,108	25,453	2,742	8,840	188,387	308,483	300	517
Bedford.....	20	23	791	850,209	70,785	4,283	14,318	631,661	1,163,931	724	5,181
Blair.....	9	12	437	393,741	30,610	4,503	14,044	299,251	603,882	825	1,376
Butler.....	34	41	1,770	1,671,305	260,617	38,379	104,518	1,357,001	2,468,125	1,696	5,138
Cambria.....	146	100	16,282	20,431,014	3,120,042	239,474	1,230,783	17,618,936	35,990,889	30,290	105,700
Centre.....	29	30	1,081	949,793	174,262	2,170	63,868	785,634	1,386,323	430	4,964
Clarion.....	34	36	1,463	1,734,284	260,207	18,068	61,332	1,517,685	2,557,428	2,005	4,902
Clearfield.....	116	134	4,805	4,754,232	670,701	33,369	300,120	3,872,309	6,968,050	5,333	20,129
Clinton.....	7	10	100	243,041	18,460	8,855	2,000	186,198	320,871	700	360
Elk.....	13	16	1,177	1,378,035	154,979	25,140	62,869	1,031,623	1,766,935	710	4,867
Fayette.....	92	122	21,892	32,786,627	3,018,756	640,607	1,337,223	31,434,647	59,667,175	40,175	110,889
Greene.....	18	19	4,035	6,630,536	1,274,743	71,937	361,641	6,350,049	11,076,363	6,279	35,436
Huntingdon.....	10	11	831	844,619	106,962	11,042	51,865	624,493	1,187,404	360	2,771
Indiana.....	56	79	7,730	9,102,180	1,175,600	59,788	613,670	3,254,491	14,807,864	3,777	65,485
Jefferson.....	52	54	2,500	2,791,987	338,064	19,519	191,492	2,566,228	4,426,792	2,117	18,879
Lawrence.....	9	11	304	350,200	90,036	26,120	1,000	220,202	594,561	667	47
Mercer.....	17	17	367	426,109	63,349	20,557	75	275,373	710,720	825	17
Somerset.....	115	144	8,240	9,892,297	1,654,759	104,089	762,795	3,869,714	16,077,688	9,569	63,020
Tioga.....	12	12	390	378,842	37,351	8,885	12,630	240,130	609,383	1,741	168
Washington.....	69	83	15,493	20,890,220	3,418,346	139,346	1,205,672	10,424,322	33,410,669	18,068	108,749
Westmoreland.....	100	130	13,749	17,627,360	2,820,171	280,697	906,141	17,265,619	30,667,431	34,501	76,611
Other counties.....	6	6	253	266,109	35,823	13,600	20,822	154,270	382,047	92	984
Tennessee, total.....	65	78	6,822	5,999,023	785,744	99,135	317,599	5,405,023	9,369,074	9,763	20,921
<i>Counties</i>											
Anderson.....	10	14	1,035	889,761	127,888	4,300	84,976	933,978	1,549,132	575	4,177
Campbell.....	18	20	1,652	1,291,445	165,517	14,531	64,493	1,038,142	1,930,910	2,544	4,815
Clairborne.....	9	11	1,058	1,036,927	115,493	19,602	82,082	1,047,661	1,763,616	43	6,363
Fentress.....	4	4	428	403,149	43,829	11,787	.....	403,056	562,851	1,570	.....
Grundy.....	4	7	692	533,316	71,064	6,409	20,673	497,671	834,369	753	1,216
Marion.....	5	5	556	310,992	85,215	9,185	19,016	251,438	472,344	1,857	1,930
Other counties.....	15	17	1,501	1,534,033	176,788	32,821	46,359	1,233,177	2,255,852	2,421	2,480
Utah, total.....	36	40	3,452	6,635,673	1,640,510	27,655	428,784	5,131,634	13,145,832	1,030	34,356
<i>Counties</i>											
Carbon.....	23	27	3,070	5,859,147	1,488,832	23,624	388,249	4,523,467	11,470,417	960	31,551
Other counties.....	13	13	382	776,526	151,678	4,031	40,535	608,167	1,675,415	70	2,805

See footnotes at end of table.

TABLE 8.—SUMMARY FOR LEADING STATES AND COUNTIES: 1929—Continued

STATE AND COUNTY	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	Cost of supplies	Cost of fuel	Cost of purchased electric energy	Coal produced, tons	Value of all products	HORSEPOWER RATING OF POWER EQUIPMENT	
										Prime movers	Electric motors driven by purchased energy
Virginia, total.....	75	88	11,956	\$11,840,463	\$2,564,208	\$62,720	\$1,061,402	12,745,100	\$21,162,036	2,082	70,444
<i>Counties</i>											
Dickenson.....	10	10	721	740,070	142,305	2,180	66,536	832,300	1,158,447	175	2,170
Lee.....	13	15	1,833	2,098,265	428,046	4,545	144,794	2,140,805	3,650,407	395	13,317
Montgomery.....	8	8	351	250,274	36,936	3,672	41,323	155,432	441,818	367	4,075
Russell.....	6	7	1,223	1,349,198	317,558	6,210	158,339	1,358,744	1,904,025	9	10,363
Tazewell.....	12	13	2,542	2,481,775	558,351	3,450	233,857	2,782,710	4,975,489	-----	12,900
Wise.....	23	32	5,071	4,742,944	1,060,244	34,293	379,407	5,356,777	8,740,845	886	25,776
Other counties.....	3	3	215	183,918	20,170	8,464	37,146	118,332	285,005	250	1,443
Washington, total.....	32	38	2,835	4,698,325	696,688	60,858	232,900	2,802,030	8,639,739	3,747	23,535
<i>Counties</i>											
King.....	15	16	746	1,257,742	230,719	3,526	70,359	640,104	2,051,734	300	7,573
Other counties.....	17	22	2,089	3,440,583	465,969	57,332	162,541	1,955,926	6,588,005	3,447	15,962
West Virginia, total <sup>10</sup> .....	686	830	99,217	126,350,696	24,293,487	735,159	8,124,326	130,031,657	217,022,962	98,300	544,578
<i>Counties</i>											
Barbour.....	22	27	1,800	1,802,948	264,751	3,651	94,804	2,466,224	2,955,703	530	4,414
Boone.....	21	23	2,603	3,301,926	615,790	7,370	222,849	3,522,437	5,420,906	1,025	10,774
Braxton.....	4	4	101	95,912	11,308	4,916	1,000	122,977	163,422	230	65
Brooke.....	13	16	1,408	2,051,742	281,491	1,000	146,376	1,900,425	3,243,801	-----	10,208
Clay.....	7	7	742	332,628	211,945	16,419	6,142	868,632	1,487,075	6,555	365
Fayette.....	71	92	11,481	15,318,776	2,390,794	49,126	1,116,461	13,224,928	23,963,811	6,267	80,531
Greenbrier.....	8	9	1,593	1,793,732	283,736	24,674	96,779	1,628,624	3,093,088	1,600	3,673
Harrison.....	40	51	4,095	4,456,960	760,142	3,029	206,387	6,126,030	7,714,790	807	17,287
Kanawha.....	30	49	5,624	6,800,982	949,804	9,662	480,129	7,061,835	10,668,819	1,539	34,834
Logan.....	53	72	10,952	14,882,417	2,611,599	33,892	1,142,780	10,871,139	27,208,520	1,930	88,941
McDowell.....	76	101	17,954	23,551,004	5,514,788	233,915	1,183,999	25,411,276	44,145,100	42,627	74,834
Marion.....	22	24	5,804	8,083,735	1,640,074	59,233	407,032	9,259,092	13,808,393	4,650	35,872
Marshall.....	10	10	1,687	1,930,208	298,810	16,818	147,629	1,940,815	2,966,565	1,977	5,743
Mercer.....	17	19	3,518	4,076,448	730,389	21,442	339,327	4,165,255	7,127,710	472	20,323
Mineral.....	12	15	308	323,101	47,695	1,121	15,791	280,812	478,833	86	1,190
Mingo <sup>10</sup> .....	25	34	4,334	5,180,927	1,125,059	5,500	391,374	6,131,410	8,370,743	555	20,903
Monongalia.....	52	59	4,727	6,198,532	1,217,439	494	423,160	8,411,375	9,651,706	303	33,640
Nicholas.....	5	6	176	171,795	55,721	12,589	-----	130,055	305,081	654	116
Ohio.....	19	19	1,867	2,275,064	533,656	9,990	114,811	2,485,286	3,564,139	855	6,227
Preston.....	35	37	1,843	2,069,820	369,844	29,671	85,414	1,988,313	3,127,868	6,726	6,101
Raleigh.....	48	66	11,310	15,436,020	2,882,015	104,691	1,124,118	15,695,419	27,793,436	7,298	67,191
Randolph.....	10	10	382	377,455	64,301	14,454	576	430,829	570,342	1,040	1,170
Taylor.....	11	11	643	609,992	190,818	-----	30,584	840,891	1,015,127	80	2,853
Tucker.....	8	8	785	1,058,471	193,107	3,919	164,900	1,046,769	1,914,513	525	8,837
Upshur.....	9	9	316	263,575	33,514	5,841	6,838	362,709	410,249	1,270	427
Webster.....	8	8	271	221,014	30,593	6,461	-----	133,853	351,363	560	-----
Wyoming.....	15	19	1,808	2,298,899	872,290	25,477	129,018	2,255,272	4,021,306	6,425	6,676
Other counties.....	26	25	1,095	936,473	151,114	26,744	46,048	909,110	1,444,462	1,909	2,700
Wyoming, total.....	35	50	4,693	8,716,950	1,750,139	366,141	291,546	8,700,272	17,118,530	26,807	13,659
<i>Counties</i>											
Lincoln.....	5	9	377	1,775,438	250,114	115,681	58,664	1,020,732	2,732,110	3,095	4,633
Sheridan.....	6	6	341	441,247	127,279	2,928	91,226	774,723	1,525,597	148	7,869
Sweetwater.....	9	18	2,510	4,620,749	904,585	85,528	137,971	3,047,553	9,295,706	14,855	6,562
Other counties.....	15	17	665	1,879,516	408,160	162,024	3,685	1,248,264	3,565,167	8,709	195

<sup>1</sup> See GENERAL EXPLANATIONS—The Enterprise.  
<sup>2</sup> For anthracite, includes collieries, washeries, and dredges. See footnote, p. 254.  
<sup>3</sup> See GENERAL EXPLANATIONS—Persons Engaged.  
<sup>4</sup> Tons, for anthracite, 2,240 pounds; for bituminous coal, 2,000 pounds.  
<sup>5</sup> Includes 1 enterprise on Greene-Sullivan County line.  
<sup>6</sup> Exclusive of 1 enterprise on Greene-Sullivan County line, reported in Greene County.  
<sup>7</sup> Exclusive of 1 enterprise on Kentucky-West Virginia State line, reported in Mingo County, W. Va.  
<sup>8</sup> Includes 1 enterprise on Athens-Hocking County line.  
<sup>9</sup> Exclusive of 1 enterprise on Athens-Hocking County line, reported in Athens County.  
<sup>10</sup> Includes 1 enterprise on Kentucky-West Virginia State line.

## SCALE OF OPERATION

Size of mines and enterprises.—Statistics relating to the scale of operation and production in coal mining are presented in two ways: First, based on individual mines, and second, based on enterprises. (See GENERAL EXPLANATIONS—The Enterprise.) They might well also be presented in a third way—based on the activities of individual operators—but at the census of 1929 it was impossible to consolidate, for individual operators, the returns on their several enterprises, so that statistics for 1929 can not be presented as they were at the census of 1909, showing the size of operation and scale of production as measured by the combined activities of each operator. Unfortunately, moreover, the fact that many operators rendered combined reports for several or for all of their mines—although of course stating the number of mines covered—instead of a separate report for each, made it impossible to completely classify individual mines according to wage earners employed, quantity or value of products, or other measure of operation. In Table 9, however, enterprises have been classified according to type of operation (underground, open-pit, washery, and dredge), for 1-mine and for 2-or-more-mine enterprises, by size, based upon tonnage produced during 1929. Table 10 gives the average size of mines based upon the total number of wage earners, total output, and total number of mines, by States.

Enterprises classified according to type of mining operation and quantity of product (Table 9).—This table presents statistics for bituminous-coal mines classified as underground or open-pit, and for anthracite enterprises classified as colliery (underground), washery, dredge, or open-pit. (See footnote 1, p. 254, and footnote 6, Table 9.) In addition, enterprises operating underground mines are classified according to the number of mines reported—one mine and two or more mines—as well as by the number of tons produced in 1929. In the case of open-pit enterprises, similar data are given except that no classification based upon the number of mines operated is presented.

For the anthracite industry statistics are given for all dredge operations reported within the scope of the census and for those washery (culm bank) and open-pit operations for which separate reports were received. Statistics for underground anthracite enterprises

include data for 11 washeries, as well as the data for open-pit or stripping operations carried on by 36 underground enterprises, for which separate returns were not made by the operators. These washeries produced 211,580 tons, while the product of these open-pits amounted to 1,591,234 tons, according to figures supplied by the United States Bureau of Mines.

To facilitate comparisons among the several groups, classes, and States shown, the following average factors are shown: (1) Wages per ton, (2) other expenses (cost of supplies, fuel, and electric energy) per ton, (3) value per ton, and (4) number of tons produced per wage earner for the year. In a number of cases where the average figures appear to be inconsistent, analysis has revealed that the unusual results were due to the prevalence of abnormal conditions, wide variations in time of operation, or other factors. However, the figures represent only the results obtained during the year, and do not reflect potential results of operation at full capacity and with other conditions correspondingly favorable.

According to figures compiled by the United States Bureau of Mines, mines and breakers produced 64,174,655 long tons of fresh-mined anthracite. The production of reclaimed coal (culm-bank and river) was relatively small as compared with fresh-mined coal, amounting to 2.6 per cent of the total for 1929. The total quantity recovered from culm-banks was 1,103,247 tons, or 1.7 per cent.

Data for open-pit (or stripping) operations carried on in connection with underground anthracite collieries were included in the returns for the latter by operators. According to figures supplied by the United States Bureau of Mines, which collects segregated production data for underground and open-pit operations, the census figures for underground collieries include data for the production of 1,591,234 tons of anthracite by open-pit or stripping methods, distributed among the various size classes in Table 9, as follows:

1-COLLIERY ENTERPRISES	Tons (2,240 pounds)	ENTERPRISES OPERATING 2 OR MORE COLLIERIES	Tons (2,240 pounds)
10,000 to 24,999.....	7, 578	200,000 to 499,999.....	68, 970
25,000 to 49,999.....	27, 003	500,000 to 999,999.....	5, 891
50,000 to 99,999.....	51, 237	1,000,000 to 1,999,999.....	333, 007
100,000 to 199,999.....	33, 696	2,000,000 and over.....	243, 084
200,000 to 499,999.....	700, 298		
500,000 to 999,999.....	54, 470		

TABLE 9.—SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO TYPE OF MINE AND QUANTITY OF PRODUCT, BY STATES: 1929

Table with columns: STATE, TYPE OF MINE, AND QUANTITY OF PRODUCT PER ENTERPRISE (TONS); Number of enterprises; Number of mines; Wage earners (average for the year); Wages; Cost of supplies; Cost of fuel; Cost of purchased electric energy; Coal produced, tons; Value of all products; HORSEPOWER RATING OF POWER EQUIPMENT (Prima movers, Electric motors driven by purchased energy); AVERAGE PER TON (Wages, Suppl. fuel, and purchased electric energy, Value of products); Tons per wage earner.

See footnotes at end of table.

MINES AND QUARRIES

TABLE 9.—SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO TYPE OF MINE AND QUANTITY OF PRODUCT, BY STATES: 1929—Continued

STATE, TYPE OF MINE, AND QUANTITY OF PRODUCT PER ENTERPRISE (TONS)	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	Cost of supplies	Cost of fuel	Cost of purchased electric energy	Coal produced, tons	Value of all products	HORSEPOWER RATING OF POWER EQUIPMENT		AVERAGE PER TON			Tons per wage earner
										Prime movers	Electric motors driven by purchased electric energy	Wages	Supplies, fuel, and purchased electric energy	Value of products	
<b>Underground mines—Contd.</b>															
<b>Indiana, total</b>	193	193	8,860	\$11,063,125	\$2,256,752	\$257,652	\$488,715	10,760,068	\$19,097,346	21,429	31,658	\$1.11	\$0.28	\$1.78	1,213
Less than 5,000	89	89	230	256,789	34,827	( <sup>o</sup> )	( <sup>o</sup> )	223,305	427,226	1,650	364	1.15	.16	1.91	934
5,000 to 9,999	34	34	217	247,333	46,090	( <sup>o</sup> )	( <sup>o</sup> )	232,040	406,203	1,229	727	1.07	.20	1.75	1,069
10,000 to 24,999	15	15	258	253,980	50,563	( <sup>o</sup> )	( <sup>o</sup> )	237,220	418,327	1,204	670	1.07	.21	1.74	919
25,000 to 49,999	19	19	638	996,932	107,666	15,697	34,193	689,694	1,093,286	1,597	2,392	1.01	.23	1.45	1,081
50,000 to 99,999	7	7	752	697,102	77,330	21,912	19,358	563,151	963,196	770	737	1.24	.21	1.71	749
100,000 to 199,999	10	10	1,141	1,540,250	415,730	33,575	62,050	1,495,702	2,634,547	2,324	5,284	1.10	.36	1.87	1,232
200,000 to 499,999	15	15	3,853	5,502,090	925,252	105,348	241,099	4,814,270	8,723,230	9,115	13,877	1.14	.26	1.81	1,240
500,000 to 999,999	4	4	1,762	2,768,049	598,694	81,120	132,040	2,584,590	4,627,331	3,534	7,607	1.07	.31	1.75	1,467
<b>Iowa, total</b>	163	163	4,715	\$6,215,742	\$45,091	\$78,962	\$147,808	3,434,141	\$9,373,643	6,020	14,671	1.81	.81	2.73	723
Less than 5,000	94	94	307	411,654	45,119	( <sup>o</sup> )	( <sup>o</sup> )	231,045	669,732	1,185	483	1.78	.20	2.00	630
5,000 to 9,999	23	23	277	322,888	53,782	( <sup>o</sup> )	( <sup>o</sup> )	154,070	496,695	600	798	2.10	.35	3.22	556
10,000 to 24,999	17	17	587	561,155	102,324	( <sup>o</sup> )	( <sup>o</sup> )	284,704	865,006	550	1,200	2.08	.30	3.04	485
25,000 to 49,999	12	12	701	846,743	124,629	21,252	20,617	425,034	1,293,371	785	2,379	1.99	.41	3.04	606
50,000 to 99,999	7	7	688	898,335	101,146	724	81,168	635,682	1,534,745	300	2,798	1.68	.25	2.85	770
100,000 to 199,999	7	7	1,205	1,754,003	251,723	60,839	36,933	992,366	2,507,858	2,400	3,700	1.77	.34	2.53	823
200,000 to 499,999	3	3	890	1,300,964	166,368	6,147	49,090	811,330	2,016,236	200	3,253	1.71	.27	2.40	912
<b>Kansas, total</b>	127	127	1,940	\$1,870,142	\$233,166	\$44,852	\$18,835	1,183,336	\$2,954,123	3,530	3,723	1.58	.25	2.50	610
Less than 5,000	79	79	316	305,638	23,920	( <sup>o</sup> )	( <sup>o</sup> )	201,562	516,301	255	704	1.52	.12	2.56	638
5,000 to 9,999	26	26	320	305,366	54,728	( <sup>o</sup> )	( <sup>o</sup> )	193,038	451,878	695	787	1.58	.28	2.33	605
10,000 to 24,999	13	13	200	283,252	54,174	( <sup>o</sup> )	( <sup>o</sup> )	216,015	528,958	580	1,016	1.81	.25	2.45	745
25,000 to 49,999	7	7	1,014	975,810	100,344	44,852	18,835	672,141	1,457,986	2,100	1,266	1.71	.20	2.55	564
100,000 to 199,999	2	2													
<b>Kentucky, total</b>	355	355	36,260	\$8,848,733	\$6,800,751	\$92,510	\$2,048,976	39,712,536	\$63,018,631	42,917	129,652	.98	.23	1.59	1,065
Less than 5,000	51	51	185	162,392	17,114	( <sup>o</sup> )	( <sup>o</sup> )	135,553	298,011	636	170	1.20	.13	1.76	733
5,000 to 9,999	35	35	337	293,010	42,721	( <sup>o</sup> )	( <sup>o</sup> )	248,221	395,973	1,140	802	1.18	.17	1.60	737
10,000 to 24,999	60	60	1,357	655,789	215,966	( <sup>o</sup> )	( <sup>o</sup> )	1,006,303	1,455,253	3,414	3,314	.95	.21	1.44	744
25,000 to 49,999	51	51	2,461	1,707,265	276,980	36,065	105,397	1,938,212	2,645,966	5,374	6,057	.93	.22	1.37	788
50,000 to 99,999	64	64	5,051	4,206,586	610,959	60,462	302,679	4,527,644	6,457,789	6,750	18,224	.93	.21	1.43	866
100,000 to 199,999	50	50	7,433	7,591,803	1,246,169	99,676	422,432	8,071,209	11,773,021	6,893	25,352	.94	.22	1.40	1,070
200,000 to 499,999	59	59	15,374	18,182,507	3,194,177	109,218	660,088	18,491,368	30,243,377	10,289	60,029	.98	.23	1.64	1,203
500,000 to 999,999	9	9	4,012	5,669,341	1,166,665	107,089	258,379	5,291,071	9,869,241	8,515	15,704	1.07	.30	1.85	1,319
<b>Missouri, total</b>	162	162	3,267	\$3,231,041	\$438,886	\$30,903	\$51,965	1,704,682	\$4,762,610	5,025	13,719	1.90	.31	2.70	522
Less than 5,000	98	98	412	384,729	38,697	( <sup>o</sup> )	( <sup>o</sup> )	207,886	640,024	1,091	582	1.85	.18	3.08	605
5,000 to 9,999	31	31	430	409,376	62,349	( <sup>o</sup> )	( <sup>o</sup> )	218,402	610,606	871	2,813	1.87	.29	2.80	508
10,000 to 24,999	19	19	734	658,818	128,649	( <sup>o</sup> )	( <sup>o</sup> )	315,249	961,483	1,776	4,300	2.09	.41	3.05	420
25,000 to 49,999	15	15	1,042	1,050,867	121,662	12,659	33,978	532,653	1,460,568	417	5,295	1.97	.32	2.75	511
50,000 to 99,999	2	2													
100,000 to 199,999	2	2	640	727,251	38,126	18,244	18,017	430,392	1,084,020	876	1,220	1.09	.29	2.52	663
<b>North Dakota, total</b>	110	110	734	\$913,276	\$193,368	\$5,934	\$30,324	1,067,739	\$1,766,221	2,157	2,266	.91	.23	1.75	1,373
Less than 5,000	90	90	188	197,140	35,632	( <sup>o</sup> )	( <sup>o</sup> )	198,450	395,544	779	60	1.02	.18	2.04	1,020
5,000 to 9,999	8	8	40	62,946	16,514	( <sup>o</sup> )	( <sup>o</sup> )	56,148	103,104	101		.94	.29	1.84	1,146
10,000 to 24,999	8	8	110	150,200	47,048	( <sup>o</sup> )	( <sup>o</sup> )	140,630	259,907	542	241	1.07	.33	1.85	1,273
25,000 to 49,999	2	2													
50,000 to 99,999	2	2	387	512,994	94,174	5,934	30,324	617,502	1,007,066	735	1,995	.83	.21	1.03	1,696
100,000 to 199,999	2	2													
<b>Ohio, total</b>	504	504	16,474	\$17,744,637	\$2,893,194	\$114,302	\$37,873	17,082,697	\$27,097,003	18,513	59,600	1.04	.22	1.59	1,037
Less than 5,000	245	245	769	722,330	83,696	( <sup>o</sup> )	( <sup>o</sup> )	563,299	1,150,137	1,880	846	1.28	.15	2.04	733
5,000 to 9,999	77	77	661	698,269	100,725	( <sup>o</sup> )	( <sup>o</sup> )	634,567	981,180	1,893	1,018	1.25	.19	1.84	869
10,000 to 24,999	77	77	1,291	1,390,570	266,532	( <sup>o</sup> )	( <sup>o</sup> )	1,147,022	2,118,283	2,480	6,657	1.16	.23	1.85	833
25,000 to 49,999	37	37	1,554	1,480,660	210,272	27,963	90,027	1,844,226	2,249,816	2,069	5,296	1.16	.24	1.67	845
50,000 to 99,999	23	23	1,765	1,010,329	313,147	3,504	161,341	1,794,130	2,617,837	240	9,018	1.11	.28	1.69	677
100,000 to 199,999	20	20	2,757	2,955,812	468,974	20,214	178,895	2,824,615	4,510,608	5,254	10,448	1.05	.23	1.69	1,025
200,000 to 499,999	13	13	4,462	4,762,924	678,191	21,548	280,178	4,958,850	7,199,146	1,940	16,252	.97	.20	1.45	1,111
500,000 to 999,999	7	7	3,215	3,884,353	751,627	41,043	136,432	3,986,468	5,961,092	2,850	10,065	.97	.23	1.50	1,240
<b>Oklahoma, total</b>	79	79	2,980	\$3,668,633	\$668,624	\$45,765	\$120,898	2,074,461	\$6,013,192	3,896	8,235	1.77	.38	2.90	696
Less than 5,000	19	19	100	100,724	20,767	( <sup>o</sup> )	( <sup>o</sup> )	51,890	148,895	218	266	1.94	.40	2.86	510
5,000 to 9,999	16	16	231	228,728	41,875	( <sup>o</sup> )	( <sup>o</sup> )	117,276	322,452	249	510	1.95	.36	2.75	508
10,000 to 24,999	17	17	489	510,224	114,026	( <sup>o</sup> )	( <sup>o</sup> )	281,443	848,894	493	1,566	1.81	.41	3.02	576
25,000 to 49,999	14	14	780	861,447	156,782	20,593	51,273	492,238	1,545,300	730	2,442	1.75	.46	3.14	631
50,000 to 99,999	11	11													
100,000 to 199,999	2	2	1,380	1,967,560	275,174	34,175	69,625	1,131,614	3,148,145	2,206	3,601	1.74	.33	2.78	829
<b>Pennsylvania, total</b>	1,025	1,025	61,032	\$75,684,754	\$12,571,739	\$774,409	\$4,638,468	70,197,069	\$123,006,654	77,340	403,046	1.08	.29	1.75	1,150
Less than 5,000	287	287	982	1,000,347	142,581	( <sup>o</sup> )	( <sup>o</sup> )	737,040	1,551,530	1,841	3,506	1.36	.19	2.11	771
5,000 to 9,999	169	169	1,582	1,6											

TABLE 9.—SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO TYPE OF MINE AND QUANTITY OF PRODUCT, BY STATES: 1929—Continued

STATE, TYPE OF MINE, AND QUANTITY OF PRODUCT PER ENTERPRISE (TONS)	Number of enterprises	Number of mines	Wage earners (Average for the year)	Wages	Cost of supplies	Cost of fuel	Cost of purchased electric energy	Coal produced, tons	Value of all products	HORSEPOWER RATING OF POWER EQUIPMENT		AVERAGE PER TON			Tons per wage earner	
										Prime movers	Electric motors driven by purchased electric energy	Wages	Supplies, fuel, and purchased electric energy	Value of products		
<b>Underground mines—Contd.</b>																
<b>1-mine enterprises—Contd.</b>																
Tennessee, total	55	55	5,017	\$4,303,487	\$618,783	\$71,953	\$236,541	3,888,629	\$6,822,735	6,862	16,590	\$1.11	\$0.24	\$1.75	775	
Less than 5,000	10	10	57	41,405	5,022	( <sup>o</sup> )	( <sup>o</sup> )	26,823	51,446	300	—	1.54	.21	1.92	471	
5,000 to 9,999	2	3	44	31,035	13,443	( <sup>o</sup> )	( <sup>o</sup> )	21,486	37,369	—	425	1.44	.63	1.74	488	
10,000 to 24,999	2	3	203	169,695	31,000	( <sup>o</sup> )	( <sup>o</sup> )	136,851	240,631	107	1,230	1.17	.23	1.80	520	
25,000 to 49,999	2	6	697	410,291	45,123	6,520	11,234	345,748	602,238	651	1,036	1.19	.18	1.74	579	
50,000 to 99,999	13	13	1,669	1,154,172	156,901	31,724	69,458	1,006,309	1,785,670	1,679	5,769	1.16	.26	1.77	735	
100,000 to 199,999	2	8	1,437	1,332,288	186,865	15,453	113,247	1,186,204	2,231,510	2,076	7,254	1.12	.27	1.88	798	
200,000 to 499,999	4	4	1,200	1,174,531	179,824	18,256	42,602	1,105,148	1,867,984	1,450	2,877	1.01	.21	1.60	971	
Utah, total	32	32	2,834	5,377,538	1,047,124	25,262	329,597	4,303,114	10,983,041	730	25,722	1.25	.33	2.55	1,518	
Less than 5,000	9	8	19	24,455	3,697	( <sup>o</sup> )	( <sup>o</sup> )	17,219	58,850	—	32	1.42	.21	3.42	906	
5,000 to 9,999	1	1	30	59,359	13,874	( <sup>o</sup> )	( <sup>o</sup> )	30,496	66,995	—	195	1.95	.45	2.20	782	
10,000 to 24,999	2	2	106	128,788	29,399	5,001	8,387	103,569	237,763	130	811	1.24	.41	2.30	977	
25,000 to 49,999	2	4	232	537,477	65,596	9,116	27,593	367,773	867,448	300	1,055	1.43	.27	2.30	1,624	
50,000 to 99,999	5	5	514	785,788	101,814	2,565	73,308	646,978	1,430,407	300	4,500	1.44	.33	2.62	1,062	
100,000 to 199,999	7	7	1,224	3,841,671	832,745	8,580	220,309	3,229,079	8,326,588	—	19,039	1.19	.33	2.58	1,678	
200,000 to 499,999	1	1														
500,000 to 999,999	1	1														
Virginia, total	68	68	6,554	6,578,844	1,217,265	27,997	597,767	6,966,941	11,884,362	1,212	35,901	.94	.26	1.71	1,063	
Less than 5,000	13	13	53	42,388	2,491	( <sup>o</sup> )	( <sup>o</sup> )	26,173	66,639	103	—	1.62	.10	2.55	494	
5,000 to 9,999	7	7	55	48,302	4,202	( <sup>o</sup> )	( <sup>o</sup> )	47,256	73,945	34	22	1.02	.00	1.56	859	
10,000 to 24,999	10	10	225	108,086	34,968	( <sup>o</sup> )	( <sup>o</sup> )	178,740	266,500	245	1,713	1.11	.20	1.66	794	
25,000 to 49,999	12	12	617	529,289	119,306	8,257	75,094	496,598	985,085	440	4,007	1.07	.41	1.99	803	
50,000 to 99,999	7	7	625	555,494	47,396	9,589	63,870	453,984	889,891	390	3,550	1.22	.27	1.98	720	
100,000 to 199,999	11	11	1,496	1,498,473	204,530	4,361	145,811	1,496,083	2,327,569	—	7,005	1.00	.28	1.56	999	
200,000 to 499,999	3	3	953	877,508	154,267	5,460	84,873	935,663	1,431,816	—	3,973	.94	.26	1.53	932	
500,000 to 999,999	5	5	2,530	2,829,244	590,076	330	223,114	3,334,444	5,812,777	—	14,431	.85	.25	1.74	1,318	
West Virginia, total	601	601	67,115	83,104,838	16,457,219	575,865	5,329,816	90,026,072	138,514,394	80,777	341,956	.92	.25	1.54	1,341	
Less than 5,000	75	75	222	224,050	28,009	( <sup>o</sup> )	( <sup>o</sup> )	201,020	342,035	812	783	1.11	.14	1.70	905	
5,000 to 9,999	37	37	230	233,812	31,908	( <sup>o</sup> )	( <sup>o</sup> )	259,794	351,268	1,527	1,358	.90	.12	1.35	1,180	
10,000 to 24,999	76	76	1,433	1,274,256	278,789	( <sup>o</sup> )	( <sup>o</sup> )	1,247,982	1,915,059	1,530	5,495	1.02	.22	1.53	871	
25,000 to 49,999	63	63	2,321	2,204,050	365,688	61,239	97,214	2,341,375	3,444,483	7,588	8,999	.98	.23	1.47	1,009	
50,000 to 99,999	79	79	5,249	5,376,007	845,078	39,562	433,043	5,790,960	8,418,135	5,523	27,072	.93	.23	1.45	1,103	
100,000 to 199,999	101	101	11,783	13,766,891	2,442,261	40,392	1,134,708	14,387,120	21,626,232	8,410	66,708	.96	.25	1.51	1,225	
200,000 to 499,999	137	137	31,223	38,764,524	7,040,705	233,392	2,042,887	42,777,844	66,230,404	26,750	162,014	.91	.25	1.56	1,370	
500,000 to 999,999	30	30	12,846	18,361,069	4,258,376	164,960	876,970	19,670,453	31,897,210	28,937	55,202	.93	.27	1.62	1,531	
1,000,000 to 1,999,999	3	3	1,858	2,810,329	566,407	12,200	141,994	3,309,644	4,289,381	1,100	12,615	.84	.21	1.27	1,814	
Wyoming, total	26	26	1,429	2,279,114	437,354	68,190	175,541	2,019,068	4,821,098	5,112	12,180	1.13	.34	2.30	1,413	
Less than 5,000	10	10	28	35,589	12,114	( <sup>o</sup> )	( <sup>o</sup> )	21,249	71,574	187	60	1.67	.57	3.37	769	
5,000 to 9,999	2	2	55	70,299	13,070	( <sup>o</sup> )	( <sup>o</sup> )	50,130	130,467	320	135	1.40	.20	2.60	912	
10,000 to 24,999	2	2	243	490,765	86,824	36,782	4,965	267,482	765,526	1,050	632	1.65	.43	2.57	1,224	
25,000 to 49,999	5	5	605	957,046	146,773	3,854	84,315	700,888	1,830,220	2,205	4,066	1.35	.34	2.60	1,163	
50,000 to 99,999	3	3	498	725,415	178,573	22,563	80,261	943,613	2,016,221	1,850	7,337	.77	.30	2.14	1,895	
Enterprises reporting 2 or more mines, total	861	991	150,318	196,899,015	30,877,578	2,283,049	9,431,632	182,639,129	333,964,678	222,309	828,580	1.08	.27	1.83	1,215	
5,000 to 9,999	1	2	4,715	667,938	134,649	12,190	25,247	459,336	1,027,530	1,500	2,574	1.44	.85	2.25	633	
10,000 to 24,999	27	60	2,263	2,085,703	324,373	50,324	105,908	1,535,816	3,008,320	5,222	7,033	1.36	.31	1.96	679	
25,000 to 49,999	41	90	4,076	4,022,321	511,865	44,700	306,131	3,329,250	6,208,438	5,045	21,143	1.21	.26	1.86	817	
50,000 to 99,999	44	102	9,320	10,947,591	2,131,486	162,392	714,433	7,406,539	17,784,343	14,071	46,919	1.45	.40	2.40	795	
100,000 to 199,999	52	117	31,817	38,669,875	6,766,780	672,323	2,219,783	34,019,127	62,217,355	50,990	152,632	1.14	.28	1.83	1,089	
200,000 to 499,999	59	169	34,617	43,907,002	7,642,600	355,780	2,327,113	40,124,937	73,267,563	30,022	230,866	1.09	.26	1.83	1,159	
500,000 to 999,999	18	64	18,280	22,885,564	3,829,684	176,068	1,164,358	23,981,619	36,391,396	10,643	118,545	.95	.22	1.52	1,312	
1,000,000 to 1,999,999	19	136	49,230	73,722,931	15,536,141	818,272	2,568,959	71,785,506	134,059,733	104,725	248,818	1.03	.26	1.87	1,453	
Alabama, total	15	38	5,972	5,510,161	1,354,189	105,178	325,845	4,164,682	9,011,338	12,180	42,619	1.32	.43	2.10	697	
25,000 to 49,999	1	2	1,629	1,243,423	325,146	11,148	118,901	951,728	2,134,514	2,880	8,731	1.31	.48	2.24	622	
50,000 to 99,999	5	12	4,443	4,266,738	1,029,043	94,030	206,944	3,212,954	6,876,824	9,300	33,888	1.33	.41	2.14	723	
100,000 to 199,999	5	14														
200,000 to 499,999	3	8														
500,000 to 999,999	2	4														
Illinois and Indiana, total	16	43	9,154	11,959,396	1,661,991	311,576	224,963	9,769,367	17,997,075	25,721	19,534	1.23	.22	1.84	1,066	
25,000 to 49,999	4	12	265	254,145	51,414	35,466	7,661	146,610	271,384	3,106	1,187	1.78	.64	1.85	553	
50,000 to 99,999	7	17	2,000	3,247,192	512,724	75,623	108,002	2,515,307	4,621,000	4,625	7,530	1.29	.28	1.84	946	
100,000 to 199,999	2	4														
200,000 to 499,999	2	6	6,229	8,458,059	997,853	200,487	109,300	7,097,460	13,104,691	17,996	10,817	1.19	.18	1.85	1,139	
500,000 to 9																

## MINES AND QUARRIES

TABLE 9.—SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO TYPE OF MINE AND QUANTITY OF PRODUCT, BY STATES: 1929—Continued

STATE, TYPE OF MINE, AND QUANTITY OF PRODUCT PER ENTERPRISE (TONS)	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	Cost of supplies	Cost of fuel	Cost of purchased electric energy	Coal produced, tons	Value of all products	HORSEPOWER RATING OF POWER EQUIPMENT		AVERAGE PER TON			Tons per wage earner
										Prime movers	Electric motors driven by purchased energy	Wages	Supplies, fuel, and purchased electric energy	Value of products	
<b>Underground mines—Contd.</b> Enterprises reporting 2 or more mines—Continued. Kentucky, total.....	42	106	18,221	\$20,822,628	\$4,004,938	\$129,397	\$853,661	20,555,200	\$31,819,688	15,840	99,999	\$1.01	\$0.24	\$1.55	1,128
10,000 to 24,999.....	1	2	4,326	248,694	31,078	4,900	11,531	227,782	350,642	300	864	1.09	.21	1.45	699
25,000 to 49,999.....	5	10													
50,000 to 99,999.....	4	8	348	300,860	42,113	1,845	18,566	309,055	400,050	400	1,077	.97	.20	1.29	888
100,000 to 199,999.....	5	5	624	597,977	79,724	4,800	32,701	649,638	924,298	293	2,557	.92	.18	1.42	1,041
200,000 to 499,999.....	10	24	3,019	3,434,072	612,856	18,951	226,178	3,587,833	5,367,493	1,270	14,586	.96	.24	1.50	1,183
500,000 to 999,999.....	13	34	7,966	8,642,147	1,399,927	49,738	433,105	8,468,165	13,030,180	3,406	64,052	1.02	.22	1.64	1,092
1,000,000 to 1,999,999.....	2	10	4,938	7,693,978	1,330,245	49,163	128,580	7,322,723	11,767,025	10,171	16,890	1.04	.28	1.61	1,233
2,000,000 and over.....	2	8													
Ohio, total.....	19	43	4,607	5,630,183	836,849	49,480	237,211	5,295,770	7,800,476	8,170	17,610	1.06	.21	1.47	1,150
5,000 to 9,999.....	1	2													
10,000 to 24,999.....	3	6	248	262,716	56,973	3,173	19,081	240,039	469,059	300	1,395	1.05	.32	1.88	1,004
25,000 to 49,999.....	4	10													
50,000 to 99,999.....	1	2													
100,000 to 199,999.....	2	4	1,204	1,246,852	154,474	10,100	62,980	1,166,241	1,607,866	1,245	2,778	1.07	.20	1.38	969
200,000 to 499,999.....	3	7													
500,000 to 999,999.....	4	10	4,155	4,120,615	625,402	36,198	155,220	3,880,466	5,723,551	6,625	13,437	1.06	.21	1.47	1,230
1,000,000 to 1,999,999.....	1	2													
Pennsylvania, total.....	119	351	59,667	81,053,024	15,485,418	983,522	3,755,660	73,467,713	138,855,807	101,075	352,044	1.11	.28	1.89	1,231
10,000 to 24,999.....	13	28	325	260,921	73,274	4,000	7,510	227,891	443,378	800	1,708	1.14	.37	1.95	701
25,000 to 49,999.....	18	37	960	821,757	100,929	1,269	51,697	676,058	1,231,119	520	3,218	1.21	.23	1.82	705
50,000 to 99,999.....	20	48	1,777	1,773,224	181,430	11,069	153,387	1,499,770	2,767,263	1,455	9,221	1.19	.23	1.85	844
100,000 to 199,999.....	17	36	2,616	2,828,044	354,229	6,787	265,105	2,477,271	4,531,479	2,980	18,075	1.14	.25	1.83	947
200,000 to 499,999.....	22	59	6,836	8,022,428	1,124,388	160,848	536,561	7,476,915	13,406,111	13,303	38,980	1.07	.24	1.79	1,080
500,000 to 999,999.....	12	36	7,392	8,079,695	1,080,651	128,039	350,684	8,568,352	15,752,934	13,261	39,546	1.13	.25	1.84	1,158
1,000,000 to 1,999,999.....	6	18	6,877	9,290,857	1,713,993	108,618	378,836	8,533,833	15,487,594	4,050	43,770	1.09	.26	1.81	1,241
2,000,000 and over.....	11	39	32,534	48,970,628	10,266,524	561,992	2,021,871	44,017,214	85,235,929	64,706	107,526	1.11	.29	1.94	1,341
West Virginia, total.....	80	224	31,571	42,610,072	7,836,313	145,579	2,711,513	48,184,777	77,503,580	17,338	200,923	.88	.22	1.61	1,526
10,000 to 24,999.....	2	6	114	97,540	11,726	735	5,273	106,467	142,306	152	162	.92	.17	1.34	934
25,000 to 49,999.....	2	4													
50,000 to 99,999.....	9	21	805	700,182	136,425	13,638	59,991	704,188	1,136,578	410	5,599	.90	.30	1.61	875
100,000 to 199,999.....	6	14	743	748,055	106,188	1,086	69,227	797,402	1,250,447	250	3,271	.94	.22	1.68	1,073
200,000 to 499,999.....	33	82	9,395	11,404,736	2,173,118	35,959	838,732	11,370,463	18,274,628	6,346	54,149	1.00	.27	1.61	1,210
500,000 to 999,999.....	19	51	9,126	12,675,478	2,352,176	37,989	982,623	13,522,026	22,349,207	1,990	64,168	.93	.25	1.65	1,482
1,000,000 to 1,999,999.....	6	26	4,876	6,982,368	1,002,300	1,500	455,140	7,616,119	11,360,806		39,022	.92	.19	1.49	1,564
2,000,000 and over.....	3	20	6,518	10,110,707	2,034,380	55,512	330,827	14,068,112	22,080,404	8,190	34,552	.72	.17	1.63	2,168
Wyoming, total.....	8	23	3,238	6,406,537	1,277,661	283,417	112,320	4,608,455	12,206,136	10,595	6,520	1.30	.36	2.65	1,423
100,000 to 199,999.....	3	6	403	669,139	82,920	39,093	53,656	524,789	1,309,251	525	2,496	1.28	.33	2.49	1,302
200,000 to 499,999.....	3	7													
500,000 to 999,999.....	1	2	2,835	5,737,398	1,194,741	240,324	58,664	4,083,666	10,896,885	19,070	4,033	1.40	.37	2.67	1,440
2,000,000 and over.....	1	1													
Iowa.....	4	9	1,227	1,604,633	181,698	30,153	54,394	851,227	2,459,173	1,100	3,972	1.89	.31	2.89	694
Oklahoma.....	10	24	1,513	2,225,357	383,797	33,765	127,724	1,214,739	3,464,806	2,730	6,644	1.83	.46	2.85	925
Tennessee.....	8	21	1,692	1,536,364	159,596	18,476	67,590	1,384,350	2,368,141	1,558	4,103	1.11	.18	1.71	823
Utah.....	4	8	613	1,253,135	596,921	2,323	95,722	828,520	2,157,791	300	8,634	1.62	.84	2.60	1,341
Virginia.....	7	20	5,402	5,267,609	1,362,895	32,482	449,933	5,778,159	9,277,684	870	34,143	.91	.32	1.61	1,070
<b>Open-pit mines, total.....</b>	139	163	8,219	12,608,690	5,291,632	666,460	1,398,758	21,182,087	33,343,719	59,928	89,305	.60	.34	1.57	2,577
5,000 to 9,999.....	2	2	455	424,342	86,296	35,402	13,641	395,831	871,172	2,804	934	1.07	.34	2.20	870
10,000 to 24,999.....	23	23													
25,000 to 49,999.....	24	25	952	1,031,950	464,330	42,961	63,491	961,256	1,826,702	7,446	5,544	1.07	.59	1.90	1,010
50,000 to 99,999.....	20	32	1,187	1,560,425	619,126	102,544	129,655	2,016,765	3,049,158	11,531	9,076	.77	.42	1.81	1,698
100,000 to 199,999.....	27	32	1,598	2,772,422	982,955	185,395	187,853	3,789,477	6,875,212	11,844	14,225	.73	.36	1.56	2,282
200,000 to 499,999.....	25	29	2,515	3,977,455	1,791,938	207,947	618,906	7,414,045	11,276,721	15,755	31,957	.54	.34	1.52	2,948
500,000 to 999,999.....	8	9													
1,000,000 to 1,999,999.....	1	1	1,412	2,842,300	1,347,908	92,211	430,712	6,606,313	9,850,754	10,548	27,569	.43	.28	1.49	4,070
Illinois, total.....	18	20	1,747	3,135,862	1,542,264	161,068	532,822	5,540,673	8,519,277	10,690	27,306	.57	.40	1.54	3,175
25,000 to 49,999.....	2	2													
50,000 to 99,999.....	4	4	400	737,510	338,518	30,171	93,285	477,248	797,556	2,971	10,761	1.55	.97	1.67	974
100,000 to 199,999.....	1	1													
200,000 to 499,999.....	7	9	701	1,235,645	574,592	92,430	186,789	2,248,570	3,453,891	4,191	7,907	.55	.38	1.54	3,208
500,000 to 999,999.....	4	4	556	1,162,707	629,154	38,467	207,947	2,826,855	4,267,330	3,528	9,138	.41	.33	1.51	6,073
Indiana, total.....	22	23	1,837	3,247,889	1,001,659	168,227	386,730	5,753,668	8,423,894	14,298	28,180	.56	.28	1.46	3,182
10,000 to 24,999.....	2	2													
25,000 to 49,999.....	1	1	148	188,117	37,000	13,629	14,327	238,383	393,672	1,125	1,966	.79	.27	1.65	1,611
50,000 to 99,999.....	2	2													
100,000 to 199,999.....	7	7	358	657,869	237,999	47,298	50,576	1,085,309	1,509,761	3,255	2,356	.61	.31	1.39	3,032
200,000 to 499,999.....	6	6	621	954,506	315,293	55,527	104,022	1,863,344	2,764,791	4,773	14,195	.51	.29	1.48	3,001
500,000 to 999,999.....	4	5	710	1,447,397	463,391	51,773	157,765	2,606,632	3,755,670	5,145	9,670	.56	.26	1.46	

TABLE 9.—SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO TYPE OF MINE AND QUANTITY OF PRODUCT, BY STATES: 1929—Continued

STATE, TYPE OF MINE, AND QUANTITY OF PRODUCT PER ENTERPRISE (TONS)	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	Cost of supplies	Cost of fuel	Cost of purchased electric energy	Coal produced, tons	Value of all products	HORSEPOWER RATING OF POWER EQUIPMENT		AVERAGE PER TON			Tons per wage earner	
										Prime movers	Electric motors driven by purchased energy	Wages	Supplies, fuel, and purchased electric energy	Value of products		
Open-pit mines—Continued.																
Kansas, total.....	20	21	425	\$697,664	\$386,063	\$50,973	\$69,622	1,053,308	\$2,201,043	5,797	2,702	\$0.66	\$0.49	\$2.00	2,478	
5,000 to 9,999.....	1	1	1	61	81,249	22,552	7,829	8,113	81,776	199,774	610	305	.99	.47	2.44	1,341
10,000 to 24,999.....	5	5	4	59	95,491	30,962	11,766	4,808	148,831	273,264	1,487	427	.64	.32	1.84	2,523
25,000 to 49,999.....	4	4	8	101	317,198	235,444	19,120	46,042	463,045	937,123	2,765	1,382	.69	.65	2.02	2,424
50,000 to 99,999.....	7	7	3	114	203,726	97,105	18,258	10,659	359,656	790,832	935	538	.57	.35	2.20	3,155
100,000 to 199,999.....	3	3														
Missouri, total.....	22	23	704	1,227,150	692,848	73,178	153,697	1,914,087	4,035,605	6,000	8,368	.64	.48	2.11	2,411	
5,000 to 9,999.....	1	1	1	41	44,454	7,906	5,649	3,680	44,660	114,959	104	428	1.00	.30	2.57	1,089
10,000 to 24,999.....	2	2	3	194	264,466	92,912	13,688	15,983	292,423	618,805	2,295	538	.90	.42	2.12	1,507
25,000 to 49,999.....	3	3	3	93	153,103	94,646	22,460	7,500	220,680	488,475	936	363	.60	.56	2.21	2,373
50,000 to 99,999.....	3	3	6	276	427,282	206,170	30,262	41,954	615,531	1,262,181	2,665	2,244	.69	.46	2.05	2,230
100,000 to 199,999.....	5	5	3	190	337,845	291,214	1,130	84,574	740,803	1,561,215	4,795	4,795	.46	.51	2.09	3,899
200,000 to 499,999.....	3	3														
Ohio, total.....	13	14	658	1,071,000	280,268	57,707	35,242	1,713,283	2,018,792	5,068	4,016	.63	.22	1.18	2,604	
10,000 to 24,999.....	1	1	1	115	181,574	23,918	2,654	20,968	246,543	305,250	569	3,091	.74	.19	1.24	2,144
25,000 to 49,999.....	2	2	2													
50,000 to 99,999.....	2	2	2	299	464,364	90,881	28,330	4,830	693,526	893,787	2,001	250	.67	.18	1.29	2,319
100,000 to 199,999.....	5	5	4	244	426,031	165,499	28,723	9,444	773,214	819,756	2,498	675	.55	.26	1.06	3,169
200,000 to 499,999.....	3	3														
Alabama.....	4	4	189	170,611	60,356	13,705	3,104	151,160	359,978	753	124	1.18	.51	2.38	800	
Kentucky.....	7	7	423	483,734	180,125	24,230	31,319	626,247	809,299	265	2,315	.77	.38	1.29	1,480	
North Dakota.....	5	5	260	376,097	167,020	37,437	31,914	845,874	1,440,710	2,861	3,089	.44	.28	1.70	3,253	
Oklahoma.....	8	10	423	500,451	432,303	25,803	15,382	605,974	1,311,778	4,997	1,237	.99	.94	2.59	1,196	
Pennsylvania.....	7	11	301	386,529	67,069	20,002	7,883	446,668	594,196	2,440	312	.87	.21	1.33	1,484	
West Virginia.....	5	5	531	626,736	62,569	600	36,493	820,803	1,004,982	185	1,699	.70	.12	1.22	1,546	

1 Tons, for anthracite, 2,240 pounds; for bituminous coal, 2,000 pounds.

2 See footnote, p. 254.

3 See text for Table 9, p. 262.

4 Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

5 Includes 11 washeries distributed in size classes as follows: 200,000 to 499,999, 2; 500,000 to 999,999, 2; 1,000,000, to 1,999,999, 1; 2,000,000 and over, 6.

6 Does not include data for open-pit or stripping operations carried on by enterprises operating underground mines. See text for Table 9, p. 262.

7 Data for cost of fuel and purchased electric energy included in the figure for cost of supplies for those 1-mine underground enterprises whose production was less than 25,000 tons for the year. The totals for these items do not agree, therefore, with those given in other tables of this report.

8 Data for bituminous open-pit enterprises whose product was valued at less than \$20,000 for the year included in the statistics for underground mines. In those cases in which open-pit operations were conducted with underground mines and were secondary in importance, the data for these are included with those for underground enterprises.

9 Data for cost of fuel and purchased electric energy included in the figure for cost of supplies.



## MINES AND QUARRIES

Average size of coal mines: 1929 and 1919 (Table 10).—The size of both anthracite and bituminous-coal mines varies widely, but Table 10, in which the average number of wage earners per mine and the average output in tons per mine are given by States, shows that viewed broadly, the anthracite mines are much larger than bituminous-coal mines. Moreover, the average for the latter would be much lower if the very

small local mines (less than 1,000 tons annual production) not within the scope of the census were taken into consideration. The average size of the bituminous-coal mines in 1929 (based on tonnage) shows an increase of 72 per cent over that for 1919, while the average size of anthracite collieries decreased 8.5 per cent.

TABLE 10.—NUMBER OF MINES, NUMBER OF WAGE EARNERS, COAL PRODUCTION, AVERAGE NUMBER OF WAGE EARNERS PER MINE, AND AVERAGE OUTPUT PER MINE, BY STATES: 1929 AND 1919

STATE	Number of collieries and mines		WAGE EARNERS (average for the year)				COAL PRODUCED (tons, 2,000 pounds)			
			Total		Per mine		Total		Per mine	
	1929	1919	1929	1919	1929	1919	1929	1919	1929	1919
Anthracite (Pennsylvania).....	1 241	261	142,263	146,582	590	562	73,245,036	86,708,461	303,921	332,210
Bituminous coal.....	5,620	8,282	468,782	545,798	82	66	537,442,495	460,425,836	95,030	55,594
Alabama.....	180	260	24,781	24,648	138	95	18,180,453	15,411,436	101,053	59,275
Arkansas.....	86	91	3,651	2,787	42	31	1,823,524	1,440,493	21,204	15,820
Colorado.....	176	164	10,420	11,252	59	69	9,832,838	10,182,512	55,868	62,088
Illinois.....	401	499	49,817	73,780	124	148	60,705,123	60,830,650	161,384	120,903
Indiana.....	235	317	12,860	24,479	55	77	18,624,508	20,504,791	79,253	64,684
Iowa.....	172	195	5,942	10,584	35	54	4,285,368	5,474,249	24,915	28,073
Kansas.....	165	166	3,405	8,084	22	49	2,980,190	5,204,388	19,206	31,352
Kentucky.....	500	742	54,904	39,769	110	54	60,894,039	29,420,018	121,738	39,068
Maryland.....	63	92	3,042	4,826	48	52	2,638,216	2,997,380	41,870	32,580
Missouri.....	190	196	4,657	7,255	25	37	3,963,458	3,783,714	20,800	19,365
Montana.....	68	76	1,983	3,797	29	50	3,442,518	3,211,710	50,025	42,260
New Mexico.....	43	34	3,120	3,554	73	105	2,631,512	3,185,484	61,108	93,691
North Dakota.....	115	79	994	774	9	10	1,853,604	767,695	16,118	9,718
Ohio.....	561	898	21,739	40,452	39	45	24,091,756	35,140,541	42,944	39,132
Oklahoma.....	113	131	4,716	7,040	42	54	3,795,174	3,782,794	33,580	28,870
Pennsylvania.....	1,387	2,584	121,000	154,992	87	60	144,111,440	150,029,687	103,902	58,061
Tennessee.....	78	143	9,822	9,556	87	67	5,405,023	5,132,167	69,295	35,880
Texas.....	26	42	1,235	2,711	48	65	1,106,397	1,588,240	42,554	37,815
Utah.....	40	34	3,452	3,947	86	107	3,131,034	4,592,847	128,261	135,034
Virginia.....	88	118	11,956	11,215	136	95	12,745,100	9,334,780	144,831	79,108
Washington.....	38	43	2,835	4,413	75	103	2,602,030	2,086,610	68,474	69,463
West Virginia.....	830	1,237	90,217	87,095	120	68	139,031,657	77,617,115	167,503	60,309
Wyoming.....	50	65	4,693	7,691	94	109	6,700,272	7,212,006	134,005	110,954
Other States <sup>2</sup> .....	25	28	1,491	1,957	60	75	851,660	1,088,268	34,066	41,856

<sup>1</sup> See footnote, p. 254.

<sup>2</sup> For 1929: Arizona, Georgia, Michigan, North Carolina, Oregon, and South Dakota; for 1919: California, Georgia, Idaho, Michigan, North Carolina, Oregon, and South Dakota.



## TYPE OF OWNERSHIP

Corporations operated 63 per cent of the total number of mines, reported 96 per cent of the total value of products, and employed 95 per cent of the total number of wage earners in the bituminous-coal industry in 1929. Other forms of organization include partnerships, enterprises operated by individuals, etc. While the number of enterprises in this class remained

large (2,042 in 1929 as compared with 2,311 in 1919), their value of products decreased from 5.3 per cent of the total in 1919 to 4 per cent in 1929.

In the anthracite industry, corporations contributed 97 per cent of the total value of products in 1929, or practically the same proportion contributed in 1919, 97.6 per cent.

TABLE 12.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO TYPE OF OWNERSHIP, FOR THE ANTHRACITE AND THE BITUMINOUS-COAL INDUSTRIES, FOR THE UNITED STATES AND FOR SELECTED STATES: 1929

STATE AND TYPE OF OWNERSHIP	Number of enterprises	Number of mines	Wage earners (average for the year)	Value of products	STATE AND TYPE OF OWNERSHIP	Number of enterprises	Number of mines	Wage earners (average for the year)	Value of products
United States, total.....	5,174	5,923	601,533	\$1,351,548,071	Montana, total.....	66	68	1,983	\$7,448,138
Corporate.....	3,076	3,788	574,844	1,301,135,430	Corporate.....	17	19	1,784	7,047,634
Other <sup>1</sup> .....	2,098	2,135	26,689	50,412,641	Other <sup>1</sup> .....	49	49	199	400,504
Anthracite (Pennsylvania), total.....	198	303	142,801	384,854,300	New Mexico, total.....	28	43	3,120	8,324,312
Corporate.....	142	246	139,033	373,371,684	Corporate.....	11	25	2,991	8,017,200
Other <sup>1</sup> .....	56	57	3,768	11,482,616	Other <sup>1</sup> .....	17	18	129	307,112
Bituminous coal, total.....	4,976	5,620	458,732	966,693,771	North Dakota, total.....	115	115	994	3,206,031
Corporate.....	2,934	3,542	435,811	927,763,745	Corporate.....	17	17	641	2,433,091
Other <sup>1</sup> .....	2,042	2,078	22,921	38,930,025	Other <sup>1</sup> .....	98	98	353	773,840
Alabama, total.....	157	180	24,781	38,564,531	Ohio, total.....	536	561	21,739	36,916,271
Corporate.....	122	144	23,914	37,444,272	Corporate.....	208	229	19,094	32,774,017
Other <sup>1</sup> .....	35	36	867	1,120,259	Other <sup>1</sup> .....	328	332	2,645	4,142,254
Arkansas, total.....	83	86	3,051	6,172,710	Oklahoma, total.....	97	113	4,710	10,789,770
Corporate.....	55	57	3,128	5,442,960	Corporate.....	67	81	4,021	9,186,605
Other <sup>1</sup> .....	28	29	523	729,750	Other <sup>1</sup> .....	30	32	695	1,603,171
Colorado, total.....	173	176	10,420	26,553,407	Pennsylvania, total.....	1,151	1,387	121,000	262,456,657
Corporate.....	111	114	9,998	25,553,988	Corporate.....	669	887	112,704	248,545,603
Other <sup>1</sup> .....	62	62	422	999,430	Other <sup>1</sup> .....	482	500	8,296	13,911,054
Illinois, total.....	384	401	49,817	114,617,799	Tennessee, total.....	65	78	6,822	9,369,074
Corporate.....	221	237	43,631	112,150,892	Corporate.....	52	65	6,652	9,215,508
Other <sup>1</sup> .....	163	164	1,286	2,466,907	Other <sup>1</sup> .....	13	13	170	153,566
Indiana, total.....	222	235	12,860	31,501,936	Texas, total.....	22	26	1,235	1,674,171
Corporate.....	101	114	12,175	30,293,739	Corporate.....	16	19	1,156	1,537,424
Other <sup>1</sup> .....	121	121	685	1,208,197	Other <sup>1</sup> .....	6	7	79	36,747
Iowa, total.....	167	172	5,942	11,832,816	Utah, total.....	36	40	3,452	18,145,832
Corporate.....	53	58	5,092	10,141,299	Corporate.....	28	32	3,437	18,079,947
Other <sup>1</sup> .....	114	114	850	1,691,517	Other <sup>1</sup> .....	8	8	15	65,885
Kansas, total.....	150	155	3,405	6,952,829	Virginia, total.....	75	88	11,056	21,162,036
Corporate.....	46	40	2,863	5,202,341	Corporate.....	56	69	11,821	20,967,100
Other <sup>1</sup> .....	104	106	1,042	1,750,488	Other <sup>1</sup> .....	19	19	135	194,936
Kentucky, total.....	434	500	54,904	95,647,618	Washington, total.....	32	38	2,835	8,639,739
Corporate.....	344	408	53,851	93,384,875	Corporate.....	21	27	2,056	8,258,654
Other <sup>1</sup> .....	90	92	1,053	2,262,743	Other <sup>1</sup> .....	11	11	179	381,085
Maryland, total.....	52	63	3,042	4,745,279	West Virginia, total.....	686	830	99,217	217,022,962
Corporate.....	34	45	2,839	4,452,150	Corporate.....	582	724	97,639	214,411,690
Other <sup>1</sup> .....	18	18	203	293,129	Other <sup>1</sup> .....	104	106	1,578	2,611,272
Missouri, total.....	188	190	4,657	9,667,708	Wyoming, total.....	35	50	4,693	17,118,580
Corporate.....	64	67	3,738	8,077,905	Corporate.....	24	39	4,651	17,024,008
Other <sup>1</sup> .....	122	123	919	1,589,803	Other <sup>1</sup> .....	11	11	42	94,572

<sup>1</sup> Partnerships, enterprises operated by individuals, etc.

## DISTRIBUTION OF SALES

Distribution of sales, by marketing channels through which coal was sold by producers, by States: 1929 (Table 13).—This report gives statistics showing the distribution channels through which coal was delivered or sold by mine operators, compiled from data reported to the census of mines and quarries for 1929. The

statistics refer only to the first stage in distribution, and do not include data for subsequent marketing outlets.

For the bituminous-coal industry as a whole main offices of mining companies sold directly to consumers (and retailers) more coal than was handled through any other channel, or 35.6 per cent of the total. These

sales, together with those of separate or branch sales offices and affiliated selling companies, constituted 60.1 per cent of the total. Captive tonnage (shown under "a" in Table 13) comprised 21.3 per cent of the total, while sales to independent wholesalers and jobbers, and sales through nonaffiliated agents on commission amounted to 18.2 per cent.

The statistics also show the relative importance of the different channels, by States. These reflect local or sectional developments in respect to integration of

coal production with other industries, the consolidation of producing and selling interests, the distance to markets, and other factors. Pennsylvania and Alabama, for example, indicate high proportions of controlled or "captive" tonnage, due to large coking and other industrial enterprises which mine their own coal. Conversely, Indiana and Virginia show small proportions of "captive" tonnage, while "sales by the main offices of mining companies" rank particularly high for Colorado, Iowa, and Tennessee.

TABLE 13.—DISTRIBUTION OF SALES, BY MARKETING CHANNELS THROUGH WHICH COAL WAS SOLD BY PRODUCERS, FOR THE ANTHRACITE AND THE BITUMINOUS-COAL INDUSTRIES, BY STATES: 1929<sup>1</sup>

MARKETING CHANNELS	Anthracite (Pennsylvania)	Per cent of total	Bituminous coal, total	Per cent of total	Pennsylvania	Per cent of total	West Virginia	Per cent of total
Total sales: <sup>1</sup>								
Tons <sup>2</sup> .....	61,367,350	100.0	523,407,350	100.0	140,610,002	100.0	137,055,763	100.0
Value.....	\$377,036,302	100.0	\$939,937,222	100.0	\$256,002,707	100.0	\$214,570,871	100.0
(a) Deliveries direct to consumers who own or control the mine through direct ownership, and sales to affiliated consumers:								
Tons <sup>2</sup> .....	594,581	1.0	111,342,626	21.3	40,990,872	35.6	18,318,098	13.3
Value.....	\$2,113,277	0.6	\$218,241,284	23.2	98,974,570	38.6	\$31,467,138	14.6
(b) Sales direct to other consumers (including retailers) invoiced by main offices of the mining companies:								
Tons <sup>2</sup> .....	17,210,258	28.0	186,320,092	35.6	51,837,907	36.8	30,710,717	22.3
Value.....	\$100,297,664	26.6	\$347,966,504	37.0	\$91,617,452	35.8	\$46,907,658	21.9
(c) Sales arranged and invoiced by separate or branch sales offices of the mining company:								
Tons <sup>2</sup> .....	396,356	0.6	23,359,370	4.5	1,813,901	1.3	12,161,935	8.8
Value.....	\$1,935,150	0.5	\$37,973,359	4.1	\$3,519,119	1.4	\$17,484,960	8.2
(d) Sales through a separately incorporated selling company owned by the same interests as the mining company:								
Tons <sup>2</sup> .....	21,490,670	35.0	105,126,876	20.0	20,792,051	14.8	44,866,521	32.6
Value.....	\$135,496,171	35.9	\$176,564,076	18.8	\$35,379,501	13.8	\$71,513,074	33.3
(e) Sales to independent wholesalers or jobbers, and sales through nonaffiliated agents on commission:								
Tons <sup>2</sup> .....	21,565,603	35.1	95,173,332	18.2	16,061,933	11.4	30,661,983	22.5
Value.....	\$136,613,014	36.2	\$155,347,499	16.5	\$26,370,287	10.3	\$46,355,044	21.6
(f) Other sales (unspecified):								
Tons <sup>2</sup> .....	109,873	0.2	2,084,554	0.4	107,338	0.1	637,509	0.5
Value.....	\$81,126	0.2	\$3,844,440	0.4	\$192,778	0.1	\$842,991	0.4
Production reported by enterprises whose value of product was less than \$20,000: <sup>1</sup>								
Tons <sup>2</sup> .....			9,061,699		2,415,896		845,291	
Value.....			\$17,727,085		\$4,432,607		\$1,140,977	
Quantity consumed at the mines for power and heat, <sup>1</sup> tons <sup>2</sup>	5,044,980		4,624,467		1,045,805		511,284	

  

MARKETING CHANNELS	Illinois	Per cent of total	Kentucky	Per cent of total	Alabama	Per cent of total	Ohio	Per cent of total
Total sales: <sup>1</sup>								
Tons <sup>2</sup> .....	58,947,143	100.0	59,713,203	100.0	17,837,326	100.0	22,583,942	100.0
Value.....	\$111,501,957	100.0	\$93,811,378	100.0	\$37,753,758	100.0	\$34,328,331	100.0
(a) Deliveries direct to consumers who own or control the mine through direct ownership, and sales to affiliated consumers:								
Tons <sup>2</sup> .....	9,096,613	15.4	9,804,565	16.4	7,862,658	44.1	3,164,020	14.0
Value.....	\$17,085,363	15.3	\$17,697,201	18.9	\$16,466,803	43.6	\$5,385,676	16.7
(b) Sales direct to other consumers (including retailers) invoiced by main offices of the mining companies:								
Tons <sup>2</sup> .....	31,580,583	53.6	20,274,796	34.0	6,128,776	34.4	8,662,702	38.4
Value.....	\$62,468,645	56.0	\$32,796,026	34.9	\$13,856,568	36.7	\$13,500,888	39.3
(c) Sales arranged and invoiced by separate or branch sales offices of the mining company:								
Tons <sup>2</sup> .....	1,693,096	2.9	1,637,038	2.7	64,763	0.4	301,798	1.3
Value.....	\$2,530,237	2.3	\$2,282,234	2.4	\$164,850	0.5	\$471,101	1.4
(d) Sales through a separately incorporated selling company owned by the same interests as the mining company:								
Tons <sup>2</sup> .....	10,122,540	17.2	10,636,592	17.6	640,661	3.6	5,918,570	26.2
Value.....	\$18,904,146	17.0	\$15,552,318	16.6	\$1,144,349	3.0	\$8,776,124	25.6
(e) Sales to independent wholesalers or jobbers, and sales through nonaffiliated agents on commission:								
Tons <sup>2</sup> .....	6,220,890	10.6	17,310,759	29.0	2,996,647	16.8	4,511,531	20.0
Value.....	\$10,167,210	9.1	\$25,295,283	27.0	\$5,854,848	15.5	\$6,142,933	17.9
(f) Other sales (unspecified):								
Tons <sup>2</sup> .....	233,421	0.3	149,482	0.3	134,821	0.7	25,222	0.1
Value.....	\$416,331	0.3	\$187,816	0.2	\$266,540	0.7	\$43,609	0.1
Production reported by enterprises whose value of product was less than \$20,000: <sup>1</sup>								
Tons <sup>2</sup> .....	632,748		691,404		206,633		1,345,691	
Value.....	\$1,420,579		\$678,472		\$451,217		\$2,366,443	
Quantity consumed at the mines for power and heat, <sup>1</sup> tons <sup>2</sup>	950,260		432,628		120,628		151,544	

See footnotes at end of table.

## MINES AND QUARRIES

TABLE 13.—DISTRIBUTION OF SALES, BY MARKETING CHANNELS THROUGH WHICH COAL WAS SOLD BY PRODUCERS, FOR THE ANTHRACITE AND THE BITUMINOUS-COAL INDUSTRIES, BY STATES: 1929<sup>1</sup>—Contd.

MARKETING CHANNELS	Indiana	Per cent of total	Colorado	Per cent of total	Virginia	Per cent of total	Wyoming	Per cent of total
Total sales: <sup>1</sup>								
Tons <sup>2</sup> .....	17,766,570	100.0	9,408,437	100.0	12,599,705	100.0	6,469,350	100.0
Value.....	\$30,066,447	100.0	\$25,502,837	100.0	\$21,099,647	100.0	\$16,569,395	100.0
(a) Deliveries direct to consumers who own or control the mine through direct ownership, and sales to affiliated consumers:								
Tons <sup>2</sup> .....	377,845	2.1	1,450,244	15.4	441,356	3.5	3,135,671	48.5
Value.....	\$492,020	1.6	\$3,128,471	12.3	\$784,616	3.7	\$7,874,126	47.5
(b) Sales direct to other consumers (including retailers) invoiced by main offices of the mining companies:								
Tons <sup>2</sup> .....	5,636,961	31.7	6,711,936	71.3	4,460,804	35.4	2,908,334	45.0
Value.....	\$9,663,660	32.2	\$18,485,612	72.5	\$7,622,464	36.1	\$7,560,114	45.6
(c) Sales arranged and invoiced by separate or branch sales offices of the mining company:								
Tons <sup>2</sup> .....	1,888,378	10.6	46,600	0.5	1,704,920	13.5	20,200	0.3
Value.....	\$3,272,830	10.9	\$139,800	0.5	\$2,919,808	13.8	\$97,672	0.6
(d) Sales through a separately incorporated selling company owned by the same interests as the mining company:								
Tons <sup>2</sup> .....	2,756,080	15.5	656,076	7.0	2,899,432	23.0	195,507	3.0
Value.....	\$4,453,397	14.8	\$2,176,270	8.5	\$4,478,438	21.2	\$538,385	3.2
(e) Sales to independent wholesalers or jobbers, and sales through nonaffiliated agents on commission:								
Tons <sup>2</sup> .....	6,971,431	39.2	512,239	5.4	2,928,000	23.2	209,638	3.2
Value.....	\$11,904,591	39.6	\$1,480,448	5.8	\$5,025,270	23.8	\$499,098	3.0
(f) Other sales (unspecified):								
Tons <sup>2</sup> .....	135,875	0.8	30,742	0.3	165,193	1.3	-----	-----
Value.....	\$269,949	0.9	\$92,230	0.4	\$266,051	1.3	-----	-----
Production reported by enterprises whose value of product was less than \$20,000: <sup>1</sup>								
Tons <sup>2</sup> .....	487,257	-----	238,591	-----	98,416	-----	37,525	-----
Value.....	\$858,715	-----	\$671,104	-----	\$177,035	-----	\$103,672	-----
Quantity consumed at the mines for power and heat, <sup>1</sup> tons <sup>2</sup>	354,237	-----	187,875	-----	38,092	-----	174,827	-----

MARKETING CHANNELS	Utah	Per cent of total	Iowa	Per cent of total	Oklahoma	Per cent of total	Tennessee	Per cent of total	Other States	Per cent of total
Total sales: <sup>1</sup>										
Tons <sup>2</sup> .....	5,048,611	100.0	3,915,067	100.0	3,662,366	100.0	5,285,675	100.0	21,964,190	100.0
Value.....	\$12,929,784	100.0	\$10,800,569	100.0	\$10,312,661	100.0	\$9,179,402	100.0	\$55,460,478	100.0
(a) Deliveries direct to consumers who own or control the mine through direct ownership, and sales to affiliated consumers:										
Tons <sup>2</sup> .....	565,842	11.2	769,231	19.6	894,364	24.8	382,129	7.2	5,083,108	23.1
Value.....	\$1,609,375	12.4	\$2,001,005	18.5	\$2,410,805	23.5	\$696,250	7.6	\$12,158,840	21.9
(b) Sales direct to other consumers (including retailers) invoiced by main offices of the mining companies:										
Tons <sup>2</sup> .....	2,598,345	51.5	2,701,413	69.0	766,250	21.3	3,566,228	66.3	7,894,280	35.7
Value.....	\$6,378,810	49.3	\$7,687,716	71.2	\$2,302,302	22.3	\$6,141,064	66.0	\$21,042,585	37.9
(c) Sales arranged and invoiced by separate or branch sales offices of the mining company:										
Tons <sup>2</sup> .....	7,308	0.1	46,509	1.2	30,000	0.8	102,698	1.9	1,840,720	8.4
Value.....	\$20,635	0.2	\$148,341	1.4	\$107,989	1.0	\$189,196	2.1	\$4,615,581	8.3
(d) Sales through a separately incorporated selling company owned by the same interests as the mining company:										
Tons <sup>2</sup> .....	1,620,290	32.1	205,861	5.3	324,246	9.0	241,573	4.6	3,342,276	15.2
Value.....	\$4,281,235	33.1	\$487,840	4.5	\$819,463	7.9	\$435,650	4.7	\$7,620,580	13.7
(e) Sales to independent wholesalers or jobbers, and sales through nonaffiliated agents on commission:										
Tons <sup>2</sup> .....	256,826	5.1	175,794	4.5	1,440,034	40.0	1,053,047	19.9	3,562,580	16.2
Value.....	\$635,720	4.9	\$419,936	3.9	\$4,250,168	41.2	\$1,717,242	18.7	\$9,230,412	16.6
(f) Other sales (unspecified):										
Tons <sup>2</sup> .....	-----	-----	10,259	0.4	147,472	4.1	-----	-----	801,220	1.4
Value.....	-----	-----	\$65,731	0.5	\$412,934	4.0	-----	-----	\$792,480	1.4
Production reported by enterprises whose value of product was less than \$20,000: <sup>1</sup>										
Tons <sup>2</sup> .....	28,297	-----	313,479	-----	129,127	-----	58,567	-----	1,532,777	-----
Value.....	\$82,515	-----	\$898,606	-----	\$338,061	-----	\$106,098	-----	\$3,700,924	-----
Quantity consumed at the mines for power and heat, <sup>1</sup> tons <sup>2</sup>	16,460	-----	56,762	-----	63,125	-----	52,745	-----	368,195	-----

<sup>1</sup> The statistics given in the table under classes "a" to "f" do not include data for (1) mines whose output was less than 1,000 tons, as this group was not included in the census canvass; (2) those enterprises whose production was valued at less than \$20,000 for the year, these being permitted to report on an abbreviated schedule which did not call for distribution information (the total production of this group was 9,061,699 tons, reported by 2,155 bituminous-coal enterprises); (3) tonnage consumed at the mines for power and heat. Items (2) and (3) are shown below the distributed figures for each State.

<sup>2</sup> Tons, for anthracite, 2,240 pounds; for bituminous coal, 2,000 pounds.

POWER

Power equipment: 1929 (Table 14).—A classification of motive power according to the nature of its use, whether stationary or mobile, is given in Table 14. The latter class embraces power equipment of mine locomotives, portable cutting and loading machines, fans, and other machinery and equipment moved from place to place in the course of operations, as contrasted with power equipment of fixed installations, such as central power plants, hoisting, prepara-

tion and tipple equipment, etc. The small proportion of mobile equipment in the anthracite industry reflects the limited extent to which mining machinery has been found practical in that industry.

The total rating of power equipment in the anthracite industry in 1929 was 33.3 per cent of that for the bituminous-coal industry, while the quantity of anthracite produced was only 13.9 per cent of the quantity of bituminous coal produced.

TABLE 14.—POWER EQUIPMENT, STATIONARY AND MOBILE—NUMBER AND RATED CAPACITY OF PRIME MOVERS, MOTORS, AND GENERATORS, FOR THE UNITED STATES: 1929

Enterprises whose value of product in 1929 was less than \$20,000 were permitted to report on an abbreviated schedule which called for the total number and horsepower rating of prime movers, but not by kinds. Therefore, data for all prime movers reported by enterprises of this size are included with those for stationary steam engines. See Table 11 for statistics showing the relative importance of this class of enterprises]

TYPE	ANTHRACITE (Pennsylvania)						BITUMINOUS COAL					
	Total		Stationary		Mobile		Total		Stationary		Mobile	
	Number	Capacity	Number	Capacity	Number	Capacity	Number	Capacity	Number	Capacity	Number	Capacity
Prime movers and electric motors driven by purchased energy, aggregate.....	10,264	Horsepower 1,041,465	7,811	Horsepower 892,391	2,453	Horsepower 149,074	71,762	Horsepower 3,124,187	38,029	Horsepower 1,777,043	33,723	Horsepower 1,347,144
Prime movers, total.....	3,666	618,042	3,027	552,275	639	66,767	5,171	721,687	4,027	630,960	1,144	90,721
Steam engines.....	3,286	455,327	2,702	390,723	584	64,604	4,542	544,015	3,544	461,837	998	82,178
Steam turbines.....	282	160,424	282	160,424	---	---	199	145,008	199	145,008	---	---
Internal-combustion engines.....	98	2,201	43	1,128	55	1,168	425	28,004	279	19,461	146	8,543
Water wheels and water turbines.....	---	---	---	---	---	---	5	4,660	5	4,660	---	---
Horsepower rating of inactive prime movers, included above.....	---	28,595	---	28,110	---	485	---	61,791	---	57,943	---	3,848
Electric motors driven by purchased energy.....	6,598	423,423	4,784	340,116	1,814	83,307	66,581	2,402,500	34,002	1,146,077	32,679	1,250,423
Electric motors driven by energy generated by enterprises reporting.....	9,917	464,164	7,117	311,009	2,800	152,555	14,379	429,970	7,281	198,677	7,098	231,293
Electric generators.....	139	Kilowatts 128,395	139	Kilowatts 128,395	---	---	978	Kilowatts 271,072	973	Kilowatts 271,072	---	---

Summary: 1909-1929 (Table 15).—The aggregate rating of power equipment (prime movers and electric motors driven by purchased energy) used in the coal-mining industries increased 118.8 per cent between 1909 and 1929, while the number of wage earners employed decreased 8.5 per cent and the tonnage produced increased 33.7 per cent. In 1909, practically all power equipment in use consisted of steam engines (including turbines) while in 1929 the total rating of motors driven by purchased electric energy was more

than twice as great as that for all prime movers combined. Moreover, a large proportion of the prime-mover equipment was used for driving electric generators, and the total rating of motors driven by these was nearly one-third as great as the rating of motors driven by purchased energy. The increased use of electric energy reflects the progress of mechanical methods in the mining of coal—in cutting coal at the mine face, in loading, in underground haulage, in hoisting, in preparation of coal, and in mine ventilation.



Horsepower per mine, per wage earner, and per thousand tons of coal mined, by States: 1909-1929 (Table 16).—During the period 1909-1929 the total horsepower rating of power equipment increased 154.4 per cent while the number of wage earners decreased

10.4 per cent in the bituminous-coal industry. Accordingly, the average power used per wage earner nearly trebled, while the average output of coal per wage earner increased from 736 tons in 1909 to 1,172 tons in 1929.

TABLE 16.—RATED CAPACITY OF POWER EQUIPMENT IN USE—AVERAGES PER MINE, PER WAGE EARNER, AND PER THOUSAND TONS OF COAL PRODUCED, FOR SELECTED STATES: 1929, 1919, AND 1909

STATE	Cen- sus year	Num- ber of col- lieries and mines	Wage earn- ers (aver- age for the year) <sup>1</sup>	Coal pro- duced, tons (2,000 pounds) ex- pressed in thou- sands	HORSEPOWER RATING OF POWER EQUIPMENT				STATE	Cen- sus year	Num- ber of col- lieries and mines	Wage earn- ers (aver- age for the year) <sup>1</sup>	Coal pro- duced, tons (2,000 pounds) ex- pressed in thou- sands	HORSEPOWER RATING OF POWER EQUIPMENT			
					Total	Per mine	Per wage earn- er	Per 1,000 tons of coal pro- duced						Total	Per mine	Per wage earn- er	Per 1,000 tons of coal pro- duced
Anthracite (Penn- sylvania).....	1929	241	142,263	73,245	1,030,668	4,277	7.2	14.1	Missouri.....	1929	100	4,657	3,963	34,812	183	7.5	8.8
	1919	261	140,582	86,708	889,974	3,410	6.1	10.3		1919	196	7,285	3,784	28,385	145	3.9	7.5
	1909	314	167,298	76,786	663,612	2,113	4.0	8.0		1909	220	7,594	3,597	11,898	54	1.6	3.3
Bituminous coal...	1929	5,620	458,732	537,442	3,124,187	556	6.8	5.8	Ohio.....	1929	561	21,739	24,092	112,677	201	5.2	4.7
	1919	3,282	545,798	460,426	2,155,065	260	3.9	4.7		1919	898	40,452	35,141	136,025	151	3.4	3.9
	1909	6,016	511,915	376,953	1,228,026	204	2.4	3.3		1909	640	39,678	27,519	97,422	152	2.5	3.5
Alabama.....	1929	180	24,781	18,189	186,873	1,038	7.5	10.3	Oklahoma.....	1929	113	4,716	3,795	27,789	246	5.9	7.3
	1919	260	24,648	15,411	97,039	373	3.9	6.3		1919	181	7,040	3,783	30,483	278	5.2	9.0
	1909	203	21,635	13,677	54,084	266	2.5	4.0		1909	104	7,484	3,113	26,310	253	3.5	8.5
Colorado.....	1929	176	10,420	9,833	77,174	438	7.4	7.8	Pennsylvania.....	1929	1,387	124,000	144,111	937,157	676	7.7	6.5
	1919	164	11,252	10,183	62,916	384	5.0	6.2		1919	2,584	154,902	150,030	653,808	255	4.3	4.4
	1909	157	13,334	10,705	34,410	219	2.6	3.2		1909	1,509	168,166	137,305	404,654	208	2.4	2.9
Illinois.....	1929	401	49,817	60,705	343,128	856	6.9	5.7	Tennessee.....	1929	78	6,822	5,405	30,684	363	4.5	5.7
	1919	499	73,780	60,331	247,142	495	3.3	4.1		1919	143	9,556	5,132	22,646	160	2.4	4.5
	1909	631	64,942	60,570	166,174	263	2.6	3.3		1909	142	10,519	5,973	16,075	113	1.5	2.7
Indiana.....	1929	235	12,860	18,625	106,809	455	8.3	5.7	Utah.....	1929	40	3,452	5,132	35,380	885	10.3	6.9
	1919	317	24,479	20,505	99,585	314	4.1	4.9		1919	34	3,647	4,593	24,029	707	6.0	5.2
	1909	322	19,070	14,723	45,910	143	2.4	3.1		1909	22	2,683	2,200	6,929	316	2.6	3.1
Iowa.....	1929	172	5,942	4,285	25,763	150	4.3	6.0	Virginia.....	1929	88	11,056	12,745	72,126	820	6.0	5.7
	1919	195	10,584	5,474	26,118	134	2.5	4.8		1919	113	11,215	9,335	41,650	353	3.7	4.5
	1909	311	15,361	7,726	19,118	61	1.2	2.5		1909	85	9,084	4,949	16,630	196	1.8	3.4
Kentucky.....	1929	500	54,904	60,894	290,985	582	5.3	4.8	West Virginia.....	1929	830	99,217	130,032	642,878	775	6.5	4.6
	1919	742	39,769	29,420	120,804	171	3.2	4.3		1919	1,287	87,095	77,617	355,422	276	4.1	4.6
	1909	310	16,471	10,561	44,314	143	2.7	4.2		1909	661	65,228	51,496	155,576	235	2.4	3.0
									Wyoming.....	1929	50	4,693	6,700	45,466	909	9.7	6.8
										1919	65	7,091	7,212	47,075	724	6.6	6.5
										1909	65	7,134	6,295	28,071	432	3.9	4.5

<sup>1</sup> Figures for 1909 are not comparable with those for 1919 and 1929 due to the fact that data relating to the manufacture of coke at the mine are included in the figures for 1909.

<sup>2</sup> See footnote, p. 254.



MINES AND QUARRIES

TABLE 17.—NUMBER AND RATED CAPACITY OF PRIME MOVERS, MOTORS, AND GENERATORS, FOR ENTERPRISES CLASSIFIED ACCORDING TO TOTAL RATING OF POWER EQUIPMENT, FOR THE UNITED STATES: 1929

TYPE	Total, all sizes	RATING OF POWER EQUIPMENT FOR ENTERPRISES INDIVIDUALLY REPORTING TOTAL HORSEPOWER OF—									
		Less than 25	25 to 99	100 to 249	250 to 499	500 to 999	1,000 to 2,499	2,500 to 4,999	5,000 to 9,999	10,000 to 24,999	25,000 or more
ANTHRACITE (PENNSYLVANIA)											
Number of enterprises reporting power equipment <sup>1</sup> .....	190	4	32	18	21	17	25	24	26	11	12
Prime movers and electric motors driven by purchased energy, aggregate horsepower.....	1,041,465	62	1,975	2,480	7,893	11,852	43,230	82,219	186,968	184,861	519,919
Prime movers, total horsepower.....	618,042	42	1,203	1,451	2,605	2,644	12,503	37,121	69,900	93,367	397,206
Steam engines:											
Number.....	3,286	5	32	32	96	34	127	376	448	461	1,675
Horsepower.....	455,327	32	768	980	2,468	2,640	12,114	36,016	68,268	61,178	270,863
Steam turbines:											
Number.....	282		5				11	7	7	43	209
Horsepower.....	160,424		83				165	305	1,182	31,921	126,268
Internal-combustion engines:											
Number.....	98	1	17	15	6	1	3	26	11	17	1
Horsepower.....	2,291	10	352	471	137	4	224	300	450	268	75
Horsepower rating of inactive prime movers, included above.....	28,595		43	35	40						
Electric motors driven by purchased energy:											
Number.....	6,598	4	64	64	166	218	657	773	1,686	1,157	1,509
Horsepower.....	423,423	20	772	1,029	5,288	9,203	30,733	45,098	117,068	91,494	122,713
Electric motors driven by energy generated by enterprises reporting:											
Number.....	9,917			6	3	27	250	222	137	2,564	6,798
Horsepower.....	464,104			80	23	1,170	10,687	9,314	5,820	122,053	315,011
Electric generators:											
Number.....	139			1	1	7	35	16	18	26	35
Kilowatts.....	128,395			125	20	410	3,620	3,070	4,770	27,050	89,330
BITUMINOUS COAL											
Number of enterprises reporting power equipment <sup>1</sup> .....	3,709	466	775	635	535	520	488	191	64	23	6
Prime movers and electric motors driven by purchased energy, aggregate horsepower.....	3,124,187	5,896	41,054	100,210	192,490	370,512	776,855	657,667	491,583	317,462	170,458
Prime movers, total horsepower.....	721,687	3,761	17,606	31,616	53,168	101,490	178,635	130,321	112,762	82,744	9,575
Steam engines:											
Number.....	4,542	373	572	445	470	683	966	407	248	350	19
Horsepower.....	544,015	3,490	16,182	27,798	47,920	93,097	145,323	100,899	59,337	42,084	7,885
Steam turbines:											
Number.....	199		3	8	6	10	49	35	55	31	2
Horsepower.....	145,003		75	880	1,310	3,550	28,581	21,407	50,585	37,120	1,500
Internal-combustion engines:											
Number.....	425	33	54	66	52	67	83	31	16	21	2
Horsepower.....	28,004	271	1,349	2,788	3,938	4,852	4,731	3,505	2,840	3,540	190
Water wheels and water turbines:											
Number.....	5			1				4			
Horsepower.....	4,660			150				4,510			
Horsepower rating of inactive prime movers, included above.....	61,791	22	73	786	1,853	5,605	12,652	11,009	10,448	16,163	3,120
Electric motors driven by purchased energy:											
Number.....	66,581	388	1,523	3,040	5,187	8,320	17,101	13,150	8,477	6,720	2,707
Horsepower.....	2,402,500	2,135	23,448	65,594	139,322	269,013	598,220	527,346	378,821	234,718	160,883
Electric motors driven by energy generated by enterprises reporting:											
Number.....	14,379	2	75	542	886	2,516	4,222	2,180	2,008	1,948	
Horsepower.....	429,970	15	2,244	14,007	23,235	69,150	120,957	64,931	67,053	68,378	
Electric generators:											
Number.....	973	1	25	83	133	219	242	134	82	54	
Kilowatts.....	271,072	12	1,815	10,866	17,528	37,073	66,237	46,696	48,149	42,696	

<sup>1</sup> No power equipment was reported by 8 enterprises in the anthracite industry, and 1,267 in the bituminous-coal industry, 1,114 of which reported a value of product of less than \$20,000.

TIME IN OPERATION

Days per year in operation (Table 18).—Only approximately one-half of the total production of anthracite and bituminous coal was contributed by enterprises working substantially full time, or 250 or more days during the year. Attention is called to the fact that the number of wage earners given in this table represents those on the pay roll on *December 14, or nearest representative day* and differs from the

average number given in other tables. Accordingly, any attempt to derive average output per wage earner would result in considerable variation among the classes shown, as the numbers employed may have varied very markedly during the period in which enterprises were in operation. Table 9 presents such averages, based on average number of wage earners, although no account is taken of the length of the working year in that table.

TABLE 18.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO NUMBER OF DAYS IN OPERATION IN 1929, FOR THE ANTHRACITE AND THE BITUMINOUS-COAL INDUSTRIES, FOR THE UNITED STATES AND FOR SELECTED STATES

This table does not include data for 2,155 bituminous-coal enterprises whose value of product was less than \$20,000. Such enterprises were permitted to report on an abbreviated schedule, which did not call for information pertaining to time in operation. These enterprises reported a combined value of products of \$17,727,085. However, data for 1 such enterprise are included in this table. The table covers data for all enterprises in the anthracite industry]

STATE AND DAYS IN OPERATION						STATE AND DAYS IN OPERATION						
Number of enterprises		Wage earners, Dec. 14 or nearest representative day	Wages	Coal produced, tons <sup>1</sup>	Value of products	Number of enterprises		Wage earners, Dec. 14 or nearest representative day	Wages	Coal produced, tons <sup>1</sup>	Value of products	
Number of enterprises	Number of mines					Number of enterprises	Number of mines					
<b>ANTHRACITE (Pennsylvania), total</b>						<b>Alabama, total</b>						
198		303	\$147,200	\$220,907,059	66,558,839	\$384,854,300	105	128	25,113	\$23,385,886	17,082,820	\$38,113,314
Less than 50.....						Less than 50.....						
3		3					1	1	\$303	53,507	59,394	104,938
2		2	\$229	154,765	43,597	244,533	2	3				
5		5	1,281	881,087	236,253	1,207,272	3	4	400	330,959	254,823	598,781
26		26	3,308	2,919,496	913,237	4,406,386	9	10	1,032	799,088	576,022	1,481,858
47		82	34,089	48,089,947	13,434,237	73,877,057	23	24	3,938	3,314,092	2,731,347	5,554,404
55		81	40,607	61,748,832	18,541,295	107,184,561	27	39	5,500	4,822,391	4,269,630	8,439,466
53		93	62,998	107,154,067	30,805,031	182,150,308	33	41	12,058	12,331,242	8,940,593	19,167,111
7		11	4,708	9,020,956	2,585,180	15,784,183	6	6	1,873	1,734,607	1,150,111	2,766,808
<b>BITUMINOUS COAL, total</b>						<b>Ohio, total</b>						
2,821		3,465	\$472,965	\$63,040,468	\$28,380,790	\$48,900,686	197	222	22,620	\$22,855,162	22,746,065	\$4,549,828
Less than 50.....						Less than 50.....						
18		24	2,699	779,402	573,062	1,020,757	2	2	\$323	93,507	67,682	105,721
46		51	3,980	1,787,835	1,411,849	2,732,371	1	1				
72		85	8,065	5,753,294	4,915,305	9,077,787	7	8	991	301,547	291,070	430,477
201		338	28,593	24,014,576	20,187,050	37,341,810	18	20	2,082	1,709,783	1,699,223	2,299,201
605		714	82,350	87,477,829	76,189,489	142,831,050	43	46	4,725	3,994,065	4,000,489	5,705,400
829		1,023	142,441	177,901,443	163,830,029	299,955,439	60	65	6,586	6,044,400	6,014,995	10,074,808
789		1,015	174,556	228,181,095	221,320,529	388,740,872	55	62	6,943	8,268,483	8,077,250	13,051,941
171		215	20,675	30,084,334	35,955,877	67,276,000	11	18	1,270	1,903,377	1,995,386	2,882,190
<b>Pennsylvania, total</b>						<b>Indiana, total</b>						
661		897	120,944	154,629,725	141,695,544	258,024,050	97	110	13,625	17,579,962	18,137,251	30,643,221
Less than 50.....						Less than 50.....						
2		3	\$1,006	348,800	346,799	565,963	4	9	700	217,410	127,391	223,316
13		20	1,451	1,087,170	946,291	1,710,835	3	3	258	82,515	77,398	114,495
73		95	6,066	5,644,220	4,503,318	8,272,238	4	4	451	362,781	367,534	656,525
126		159	16,930	17,774,406	15,428,538	27,910,113	11	12	1,237	1,082,330	1,120,934	1,886,019
193		281	37,128	49,919,968	45,237,069	87,257,608	24	25	2,944	3,692,851	4,086,119	6,442,069
201		268	49,615	67,499,698	63,398,172	112,112,510	27	30	4,770	6,390,483	6,123,800	11,123,480
43		60	9,148	12,405,463	11,776,367	20,194,795	18	21	2,363	3,749,942	4,045,078	6,809,668
<b>West Virginia, total</b>						<b>Colorado, total</b>						
545		689	100,798	125,542,999	138,180,300	215,881,985	99	102	11,752	15,297,471	9,594,248	25,882,243
Less than 50.....						Less than 50.....						
4		7	267	103,897	108,242	128,123	6	6	\$785	520,060	241,499	777,393
9		10	544	274,800	292,965	428,790	2	2				
40		48	3,806	2,804,968	3,308,736	4,581,779	9	9	864	997,912	653,769	1,753,497
57		70	6,002	5,523,009	6,113,919	8,594,110	25	28	3,149	4,138,164	2,622,350	7,091,438
148		182	25,364	31,154,593	34,998,276	52,852,615	37	37	5,225	6,963,850	4,274,395	11,764,904
236		310	66,076	74,022,306	81,332,274	130,396,096	16	16	1,532	2,345,825	1,613,861	3,905,717
51		62	8,739	11,658,826	12,061,934	18,990,746	4	4	197	331,060	188,384	591,294
<b>Illinois, total</b>						<b>Virginia, total</b>						
215		232	\$2,924	\$7,952,176	\$6,072,375	\$11,197,220	53	66	12,020	\$11,716,499	\$12,646,684	\$20,985,001
Less than 50.....						Less than 50.....						
6		6	1,256	394,459	307,212	555,239	1	1	\$278	152,725	121,295	218,261
7		7	747	585,942	444,451	841,689	4	4				
10		11	3,113	2,304,146	1,790,284	3,273,586	10	12	1,243	1,156,580	1,062,383	1,853,253
33		33	5,938	5,429,439	4,428,538	8,483,943	15	18	2,484	2,440,189	2,482,081	3,770,007
68		80	16,924	21,674,078	18,587,828	36,037,249	22	30	\$8,024	7,966,915	8,980,922	15,186,890
57		60	18,828	28,525,766	24,382,907	46,505,925	1	1				
27		28	5,054	8,180,258	8,136,538	14,764,053	<b>Wyoming, total</b>					
7		7	404	857,488	1,606,447	2,875,436	23	38	5,021	8,660,391	6,662,747	17,014,908
<b>Kentucky, total</b>						<b>Utah, total</b>						
326		392	\$7,895	\$9,451,332	\$6,202,635	\$9,669,146	26	30	4,265	\$6,604,666	\$5,103,337	\$13,063,317
Less than 50.....						Less than 50.....						
1		1	\$518	106,222	123,210	168,520	1	1	\$345	046,140	380,650	907,481
4		5					3	5				
9		11	1,003	420,396	434,009	572,351	8	9	770	1,120,938	854,263	2,305,514
22		24	1,895	1,339,452	1,496,014	1,970,068	8	9	2,122	2,987,535	2,894,032	5,863,616
67		85	10,948	8,550,370	9,682,068	12,152,271	9	9				
123		139	19,043	19,281,982	19,593,010	30,063,044	5	6	1,028	1,844,059	1,474,492	3,930,706
86		109	20,352	23,967,478	23,366,531	39,811,822						
14		18	4,136	5,785,432	5,507,793	9,330,470						

See footnotes at end of table.

## MINES AND QUARRIES

TABLE 18.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO NUMBER OF DAYS IN OPERATION IN 1929, FOR THE ANTHRACITE AND THE BITUMINOUS-COAL INDUSTRIES, FOR THE UNITED STATES AND FOR SELECTED STATES—Continued

(See note at head of this table)

STATE AND DAYS IN OPERATION	Number of enterprises	Number of mines	Wage earners, Dec. 14 or nearest representative day	Wages	Coal produced, tons	Value of products	STATE AND DAYS IN OPERATION	Number of enterprises	Number of mines	Wage earners, Dec. 14 or nearest representative day	Wages	Coal produced, tons	Value of products			
Iowa, total.....	59	64	6,449	\$7,264,460	3,971,889	\$10,934,210	New Mexico, total.....	12	27	2,964	\$4,498,752	2,578,512	\$8,165,793			
100 to 149.....	7	9	659	582,704	315,342	824,671	150 to 199.....	4	10	2,964	4,498,752	2,578,512	8,165,793			
150 to 199.....	27	29	2,345	2,307,226	1,176,181	3,594,775	200 to 249.....	3	5							
200 to 249.....	17	18	2,504	3,123,501	1,695,177	4,541,416	250 to 299.....	5	12							
250 to 299.....	6	6	2,941	1,251,029	785,189	2,003,348	Montana, total.....	18	20	1,943	3,232,498	3,330,564	7,126,071			
300 and over.....	2	2					100 to 149.....	4	4	313	383,523	244,209	625,738			
Oklahoma, total.....	67	83	5,485	5,173,601	3,606,047	10,451,715	150 to 199.....	6	8	894	1,334,871	936,034	2,670,692			
75 to 99.....	1	1	2,889	702,289	321,822	1,058,982	200 to 249.....	3	3	498	1,088,619	821,966	1,823,721			
100 to 149.....	17	20					150 to 199.....	25	26	1,903	2,024,631	1,196,002	3,347,704			
150 to 199.....	25	26	1,903	2,024,631	1,196,002	3,347,704	250 to 299.....	3	3	2,238	375,485	1,278,355	1,096,020			
200 to 249.....	16	24	1,409	1,416,761	800,743	2,345,234	300 and over.....	2	2							
250 to 299.....	7	11	2,224	2,029,920	1,347,300	3,699,795	Kansas, total.....	47	52	3,293	3,043,308	2,601,084	6,045,061			
300 and over.....	1	1					50 to 74.....	1	1	168	76,101	146,070	290,582			
Tennessee, total.....	51	64	7,235	5,921,461	5,346,450	9,262,976	75 to 99.....	3	3	554	452,221	353,986	853,470			
75 to 99.....	1	1	2,650	232,011	211,804	400,620	100 to 149.....	12	13					150 to 199.....	18	21
100 to 149.....	3	3					1,056	737,062	627,086	1,043,092	200 to 249.....	3	9	287	363,470	400,070
150 to 199.....	10	10	2,691	2,222,736	1,932,760	3,454,634	250 to 299.....	3	3	70	110,909	165,085	387,087			
200 to 249.....	21	26	2,632	2,729,652	2,524,756	4,304,630	300 and over.....	2	2							
250 to 299.....	15	20	4,548	4,565,870	3,610,310	8,713,614	Arkansas, total.....	55	58	4,332	3,368,986	1,714,172	5,840,088			
300 and over.....	1	4					50 to 74.....	4	4	253	105,165	52,857	180,166			
Missouri, total.....	72	76	4,548	4,565,870	3,610,310	8,713,614	75 to 99.....	0	0	335	165,517	109,678	314,725			
50 to 74.....	2	2	2,204	128,329	119,791	268,789	100 to 149.....	14	15	1,128	778,569	350,113	1,230,508			
75 to 99.....	2	3					223	223,180	186,603	413,604	150 to 199.....	22	23	2,152	1,737,908	937,695
100 to 149.....	6	6	1,271	1,222,618	841,675	2,110,050	200 to 249.....	4	4	198	223,021	128,542	454,900			
150 to 199.....	20	21	2,035	2,063,688	1,417,275	3,630,154	250 to 299.....	3	3	260	308,806	115,287	450,220			
200 to 249.....	25	28	463	690,494	657,915	1,453,111	300 and over.....	2	3							
250 to 299.....	10	10	292	327,561	337,051	832,905	Maryland, total.....	31	42	2,998	2,981,202	2,537,857	4,546,842			
300 and over.....	0	0	3,111	4,614,160	2,558,995	8,524,997	100 to 149.....	1	2	411	327,063	260,005	481,234			
Washington, total.....	21	27					150 to 199.....	3	7					1,102	1,078,993	977,874
100 to 149.....	1	1	1,862	2,811,491	1,753,465	5,551,557	200 to 249.....	11	12	896	900,037	752,917	1,380,500			
150 to 199.....	1	1					1,802	1,802,669	805,530	2,975,440	250 to 299.....	10	14	589	675,109	538,061
200 to 249.....	7	11	1,240	1,802,669	805,530	2,975,440	300 and over.....	6	6							

<sup>1</sup> Tons, for anthracite, 2,240 pounds; for bituminous coal, 2,000 pounds.

<sup>2</sup> This total differs considerably from that for "Wage earners (average for the year)," 142,801 for anthracite and 447,125 for bituminous coal, given in certain other tables of this report. See GENERAL EXPLANATIONS—Persons Engaged.

<sup>3</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

<sup>4</sup> See headnote.

PERSONS ENGAGED

Persons engaged, by class and sex (Table 19).— Approximately 95 per cent of all persons employed in the coal-mining industries were wage earners, which class includes foremen, enginemen, hoistmen, electricians, miners and helpers, timbermen, trackmen, laborers and all others employed on a tonnage or day basis. "Other salaried employees" which includes superin-

tendents, managers, technical employees, clerical and other office employees comprised 4 per cent of the total number of persons engaged. Female employees, mainly office workers, represented less than four-tenths of 1 per cent of the total number engaged. Proprietors and firm members are those reported by unincorporated enterprises, practically all of which were small producers.

TABLE 19.—PERSONS ENGAGED, BY SEX: 1929

[This table does not include data for salaried officers and employees of "Central Administrative" offices. See Table 20]

INDUSTRY	ALL CLASSES			PROPRIETORS AND FIRM MEMBERS		PRINCIPAL SALARIED OFFICERS OF CORPORATIONS		OTHER SALARIED OFFICERS AND EMPLOYEES		WAGE EARNERS (AVERAGE FOR THE YEAR)	
	Total	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
United States.....	638,035	630,778	2,257	3,002	19	2,770	75	23,609	2,027	601,397	136
Anthracite (Pennsylvania).....	150,494	150,047	447	36	2	158	5	7,054	438	142,799	2
Bituminous coal.....	482,541	480,731	1,810	2,966	17	2,612	70	16,555	1,589	458,698	134

Central-administrative-office employees (Table 20).— This table was compiled from data reported separately on special schedules and not included in the returns for the operating enterprises. It gives the number of employees reported by offices maintained independently of mine offices and usually at a distance from the mining operations, as in New York City, Cleveland, or Chicago. Figures for these employees are included only in this table. In the cases of com-

panies whose mining operations are incidental to manufacturing (coke, gas, etc.), public utility operations, or other activities, the data for central-administrative-office employees have been omitted from this table and included in the data for the census of manufactures, if within the scope of that census—in other words, attributed to the final producing activities of such companies.

TABLE 20.—CENTRAL-ADMINISTRATIVE-OFFICE EMPLOYEES—NUMBER, BY SEX, AND SALARIES, FOR THE UNITED STATES: 1929

CLASS	NUMBER			SALARIES	CLASS	NUMBER			SALARIES
	Total	Male	Female			Total	Male	Female	
United States, total.....	3,575	2,834	741	\$11,752,181	Bituminous coal, total.....	2,800	2,189	671	\$9,806,570
Principal salaried officers of corporations.....	492	480	12	4,882,234	Principal salaried officers of corporations.....	429	417	12	4,277,691
Other central-administrative-office employees.....	3,083	2,354	729	6,869,947	Other central-administrative-office employees.....	2,431	1,772	659	5,528,879
Anthracite (Pennsylvania), total.....	715	645	70	1,945,611					
Principal salaried officers of corporations.....	63	63		604,543					
Other central-administrative-office employees.....	652	582	70	1,341,068					

Size of enterprises according to number of wage earners. (Table 21).—Of the total number of enterprises (4,976) in the bituminous-coal industry, more than one-half employed 20 or fewer wage earners each, and accounted for only 3.6 per cent of the total number of wage earners and 3 per cent of the total value of products. Enterprises employing from 101 to 500

wage earners accounted for slightly more than one-half of the total number of wage earners. In the anthracite industry 90.1 per cent of the wage earners were employed in 58 enterprises reporting 501 or more while only 1.6 per cent were employed by enterprises reporting 100 or fewer.

MINES AND QUARRIES

TABLE 21.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO NUMBER OF WAGE EARNERS, FOR THE ANTHRACITE AND THE BITUMINOUS-COAL INDUSTRIES, FOR THE UNITED STATES AND FOR SELECTED STATES: 1929

STATE AND NUMBER OF WAGE EARNERS PER ENTERPRISE	Number of enterprises	Number of mines	Wage earners (average for the year)		Wages	Value of products	STATE AND NUMBER OF WAGE EARNERS PER ENTERPRISE	Number of enterprises	Number of mines	Wage earners (average for the year)		Wages	Value of products	
			Number	Per cent of total						Number	Per cent of total			
ANTHRACITE (Pennsylvania), total														
	198	303	142,801	100.0	\$229,967,059	\$384,854,300	Ohio, total						\$24,446,830	\$36,016,271
1 to 5	31	81	84	0.1	183,120	340,570	1 to 5	234	234	631	2.9	598,461	1,063,607	
6 to 20	20	21	221	0.2	305,099	635,445	6 to 20	158	103	1,771	8.1	1,926,988	2,954,103	
21 to 50	21	21	710	0.5	1,008,401	2,015,351	21 to 50	52	55	1,721	7.9	2,017,342	3,243,833	
51 to 100	17	18	1,118	0.8	1,920,181	4,157,503	51 to 100	34	38	2,409	11.1	2,559,341	4,174,652	
101 to 250	32	34	5,052	3.5	7,365,876	12,391,228	101 to 250	36	39	5,490	25.3	6,152,328	9,301,374	
251 to 500	19	19	6,983	4.9	11,818,793	20,309,355	251 to 500	15	17	5,109	23.6	5,869,696	8,787,923	
501 to 1,000	34	36	23,201	16.3	30,788,793	46,445,514	501 to 1,000	7	15	4,008	21.2	5,322,683	7,390,689	
1,001 to 2,500	11	24	17,256	12.1	28,634,747	46,256,128	Indiana, total						18,101,859	31,501,936
2,501 and over	13	99	88,091	61.7	141,983,040	233,303,210	1 to 5	98	98	268	2.1	288,152	509,636	
BITUMINOUS COAL, total														
	4,976	5,020	458,732	100.0	574,800,072	966,693,771	6 to 20	80	39	354	2.8	444,631	702,043	
1 to 5	1,384	1,384	3,079	0.9	4,085,903	7,463,210	21 to 50	27	28	924	7.2	1,081,664	2,029,670	
6 to 20	1,109	1,123	12,310	2.7	13,628,802	21,454,276	51 to 100	20	25	1,477	11.5	2,203,437	4,098,235	
21 to 50	676	720	23,169	5.1	24,360,921	40,831,155	101 to 250	19	20	2	3	3,930	5,880,132	
51 to 100	619	692	46,624	9.9	50,637,241	84,438,106	251 to 500	17	22	5,907	45.9	8,203,858	12,858,671	
101 to 250	703	830	114,605	25.0	137,277,417	235,169,035	Virginia, total						11,846,453	21,162,036
251 to 500	334	472	116,890	25.5	150,100,319	245,078,628	1 to 5	15	15	61	0.5	52,989	82,230	
501 to 1,000	105	106	67,093	14.6	88,961,042	145,688,095	6 to 20	11	11	145	1.2	142,428	219,178	
1,001 to 2,500	34	142	47,404	10.3	64,027,533	108,148,409	21 to 50	12	12	421	3.5	376,245	710,177	
2,501 and over	7	61	27,752	6.0	41,720,894	77,922,857	51 to 100	11	11	834	7.0	788,592	1,267,955	
Pennsylvania, total														
	1,151	1,387	121,000	100.0	157,730,207	262,456,687	101 to 250	14	15	2,249	18.8	2,060,218	3,334,161	
1 to 5	269	209	798	0.7	816,723	1,487,198	251 to 500	7	12	2,537	21.2	2,838,816	5,195,011	
6 to 20	300	305	3,295	2.7	3,551,957	5,207,408	501 to 1,000	3	3	3	3	5,709	5,588,170	
21 to 50	189	211	6,417	5.3	6,133,629	9,627,895	1,001 to 2,500	1	2	1	2	47.8	5,588,170	
51 to 100	149	170	11,088	9.2	11,295,012	17,920,233	2,501 and over	1	7	1	7		10,358,185	
101 to 250	148	184	23,946	19.8	25,314,032	47,100,944	Colorado, total						15,700,860	26,553,407
251 to 500	54	38	19,304	16.0	23,008,238	42,910,770	1 to 5	50	50	149	1.4	188,550	346,467	
501 to 1,000	23	42	14,190	11.7	20,093,828	32,433,287	6 to 20	39	39	384	3.7	553,897	832,608	
1,001 to 2,500	15	7	22,100	18.3	30,193,719	50,816,205	21 to 50	19	19	634	6.1	897,895	1,472,918	
2,501 and over	4	36	19,853	16.4	31,319,169	54,897,216	51 to 100	33	33	2,459	23.6	3,675,815	6,175,937	
West Virginia, total														
	686	830	99,217	100.0	126,350,696	217,022,962	101 to 250	25	26	4,373	42.0	6,768,094	12,002,408	
1 to 5	92	92	278	0.3	283,087	491,157	251 to 500	7	9	2,421	23.2	3,022,109	5,723,071	
6 to 20	83	87	1,066	1.1	1,187,901	1,895,707	Tennessee, total						5,999,023	9,369,074
21 to 50	95	96	3,291	3.3	3,435,123	5,251,620	1 to 5	6	6	23	0.3	17,024	27,617	
51 to 100	103	112	7,658	7.7	8,602,307	13,890,694	6 to 20	7	7	64	0.9	44,961	61,767	
101 to 250	186	214	30,164	30.4	36,200,368	60,870,727	21 to 50	12	12	434	6.4	322,298	482,646	
251 to 500	101	152	35,210	35.5	45,810,719	77,724,375	51 to 100	14	15	1,068	15.7	915,414	1,343,006	
501 to 1,000	21	44	12,916	13.0	17,505,087	29,578,890	101 to 250	20	23	3,062	44.7	2,912,238	4,679,292	
1,001 to 2,500	3	15	8,641	8.7	12,827,104	27,408,783	251 to 500	6	10	2,181	32.0	1,787,688	2,774,686	
2,501 and over	2	18					Iowa, total						7,820,575	11,832,816
Kentucky, total														
	434	500	54,904	100.0	60,155,095	95,647,618	1 to 5	84	84	267	4.5	309,902	562,227	
1 to 5	53	53	161	0.3	147,691	254,900	6 to 20	32	32	368	5.7	411,088	584,919	
6 to 20	69	69	794	1.4	748,584	1,165,266	21 to 50	18	18	576	9.7	657,705	1,203,356	
21 to 50	67	71	2,424	4.4	1,924,379	2,897,599	51 to 100	17	18	1,156	19.5	1,409,649	2,125,171	
51 to 100	92	99	6,844	12.5	6,118,862	9,050,878	101 to 250	11	13	1,710	28.9	2,321,119	3,200,530	
101 to 250	90	90	14,941	27.2	15,241,159	24,786,141	251 to 500	4	5	1,880	31.7	2,710,212	4,066,607	
251 to 500	48	64	16,415	29.9	20,325,310	32,658,725	Oklahoma, total						6,392,461	10,789,776
501 to 1,000	10	23	6,249	11.4	6,980,460	10,828,965	1 to 5	11	11	38	0.8	39,367	62,228	
1,001 to 2,500	5	22	7,076	12.9	8,662,660	13,405,034	6 to 20	30	30	342	7.3	407,677	652,645	
Illinois, total														
	384	401	49,817	100.0	68,922,106	114,617,799	21 to 50	24	27	833	17.7	930,603	1,511,050	
1 to 5	114	114	338	0.7	377,942	662,032	51 to 100	21	28	1,508	32.0	1,924,793	3,393,204	
6 to 20	84	84	876	1.8	1,063,671	1,698,011	101 to 250	10	14	3	3	1,905	3,081,181	
21 to 50	41	42	1,445	2.9	2,038,679	3,424,855	501 to 1,000	1	3			42.3	3,081,181	
51 to 100	28	30	1,962	3.9	2,541,608	4,693,220	Wyoming, total						8,716,950	17,118,580
101 to 250	54	57	9,119	18.3	12,749,454	22,059,773	1 to 5	8	8	15	0.3	18,841	47,034	
251 to 500	33	34	11,686	23.5	15,956,604	24,572,794	6 to 20	5	5	44	0.9	55,821	97,147	
501 to 1,000	25	28	17,133	34.4	23,960,315	40,213,579	21 to 50	3	3	80	1.7	94,511	249,901	
1,001 to 2,500	5	12	7,255	14.6	10,233,933	17,292,626	51 to 100	6	7	485	10.3	972,297	1,575,075	
Alabama, total														
	157	180	24,781	100.0	23,666,802	38,564,631	101 to 250	8	10	1,234	26.3	1,838,082	4,252,538	
1 to 5	27	27	77	0.3	69,016	131,743	251 to 500	4	9	1,835	60.4	5,737,398	10,896,885	
6 to 20	30	30	321	1.3	293,354	483,518	Missouri, total						5,150,437	9,067,708
21 to 50	17	17	625	2.5	441,830	825,176	1 to 5	72	72	222	4.8	206,511	395,804	
51 to 100	16	17	1,328	5.4	1,218,228	1,908,725	6 to 20	55	55	536	12.8	612,003	1,082,275	
101 to 250	30	35	4,919	19.8	4,203,186	7,241,781	21 to 50	20	30	949	20.4	1,080,298	2,234,647	
251 to 500	29	41	10,353	41.8	10,240,617	16,573,923	51 to 100	26	27	1,749	37.6	1,965,731	4,220,554	
501 to 1,000	5	9					101 to 250	3	3			24.5	1,285,044	
1,001 to 2,500	3	4					501 to 1,000	1	3				1,734,428	

1 Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

Prevailing hours of labor (Table 22).—The wage earners of each enterprise were classed as a unit in accordance with the hours reported as prevailing for the majority, regardless of the fact that some worked more or fewer hours. The inquiry for these data requested the "normal number of hours per week for the individual wage earners." Undoubtedly most of

the enterprises reporting less than 40 hours would have adopted a longer working week if the additional product could have been disposed of. Likewise, many of the enterprises reporting 48 hours or more found it necessary to curtail operations for a portion of the year, thus reducing the number of hours per week for wage earners during such time.

TABLE 22.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO PREVAILING HOURS OF LABOR PER WEEK, FOR THE ANTHRACITE AND THE BITUMINOUS-COAL INDUSTRIES, FOR THE UNITED STATES AND FOR SELECTED STATES: 1929

[This table does not include data for 2,155 bituminous-coal enterprises whose value of product was less than \$20,000. Such enterprises were permitted to report on an abbreviated schedule, which did not call for information pertaining to prevailing hours of labor. These enterprises reported a combined value of products of \$17,727,035. However, data for 1 such enterprise are included in this table. The table covers data for all enterprises in the anthracite industry.]

STATE AND PREVAILING HOURS OF LABOR PER WEEK	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	Value of products	STATE AND PREVAILING HOURS OF LABOR PER WEEK	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	Value of products
<b>ANTHRACITE (Pennsylvania), total.....</b>						<b>Ohio, total.....</b>					
Under 25.....	3	3	460	\$220,067,059	\$384,854,300	Under 25.....	5	5	254	\$22,073	\$22,855,162
25 and over but under 36.....	4	4	451			25 and over but under 36.....	6	6	1,204		\$34,549,828
36 and over but under 40.....	4	4	30			36 and over but under 40.....	2	2			255,585
40.....	4	4	30			40.....	13	13	1,949		467,629
44 and over but under 48.....	5	7	3,188	5,421,847	8,492,478	Over 40 but under 44.....	1	1			1,030,102
48.....	151	254	188,229	222,800,290	373,504,028	44 and over but under 48.....	13	13	768		1,840,639
Over 48 but under 54.....	3	3	11	17,407	40,807	48.....	140	168	17,240		28,403,885
54 and over but under 63.....	26	26	1,437	637,989	1,141,053	54 and over but under 63.....	11	14	568		1,745,024
63 and over.....	2	2				<b>Indiana, total.....</b>					
<b>BITUMINOUS COAL, total.....</b>						<b>Virginia, total.....</b>					
Under 25.....	2,821	3,465	447,125	\$63,040,468	\$48,966,680	Under 25.....	3	3	393		\$34,549,828
25 and over but under 36.....	111	110	9,911	8,826,904	14,319,338	25 and over but under 36.....	0	0	1,234		2,560,241
36 and over but under 40.....	226	209	39,691	44,606,136	71,422,605	36 and over but under 40.....	2	2			1,321,617
40.....	46	55	5,587	6,742,933	10,815,825	40.....	2	2	1,423		
44 and over but under 48.....	221	253	26,842	34,059,833	59,075,055	44 and over but under 48.....	1	1			25,820,700
48.....	19	20	3,075	4,268,993	8,037,411	<b>Colorado, total.....</b>					
Over 48 but under 54.....	89	108	11,514	13,422,751	22,140,214	Under 25.....	5	5	465		\$20,985,091
54 and over but under 63.....	1,641	2,308	320,715	416,093,901	699,431,016	25 and over but under 36.....	5	5	1,586		1,572,089
63 and over.....	27	41	3,672	3,420,101	5,331,360	36 and over but under 40.....	2	2			361,139
<b>Pennsylvania, total.....</b>						<b>Tennessee, total.....</b>					
Under 25.....	31	32	2,036	1,750,760	3,108,983	Under 25.....	2	2	1,410		2,165,064
25 and over but under 36.....	50	67	6,695	6,086,617	9,895,682	25 and over but under 36.....	6	7	1,422		2,186,570
36 and over but under 40.....	8	9	916	1,215,098	1,871,239	36 and over but under 40.....	2	5	8,619		16,165,777
40.....	52	64	8,343	11,290,733	20,510,231	48.....	4	42	352		467,600
44 and over but under 48.....	3	3	108	108,757	200,687	54 and over but under 63.....	3	3			25,832,243
48.....	25	28	1,593	1,591,407	2,340,928	<b>West Virginia, total.....</b>					
Over 48 but under 54.....	461	662	95,855	127,866,471	212,428,765	Under 25.....	9	10	610		\$20,985,091
54 and over but under 63.....	11	18	887	932,216	1,341,876	25 and over but under 36.....	20	29	3,930		4,512,400
63 and over.....	3	4	360	485,800	888,106	36 and over but under 40.....	4	4	300		339,556
<b>West Virginia, total.....</b>						<b>Iowa, total.....</b>					
Under 25.....	545	680	98,413	125,542,009	215,881,985	Under 25.....	2	2	1,033		839,979
25 and over but under 36.....	9	10	610	521,908	850,424	25 and over but under 36.....	6	7	1,881		1,219,465
36 and over but under 40.....	20	29	3,930	4,512,400	7,118,148	36 and over but under 40.....	1	16	1,547		436,298
40.....	4	4	300	339,556	460,198	44 and over but under 48.....	2	2	3,140		4,708,627
44 and over but under 48.....	36	41	6,224	8,595,900	15,699,598	48.....	5	5	611		665,418
48.....	6	7	1,328	1,740,156	2,936,227	<b>Kentucky, total.....</b>					
Over 48 but under 54.....	447	568	79,433	100,353,089	171,124,388	Under 25.....	14	18	1,612		1,490,521
54 and over but under 63.....	16	26	1,452	6,598,262	13,397,890	25 and over but under 36.....	46	72	10,198		13,832,227
63 and over.....	1	1				36 and over but under 40.....	6	6	589		1,442,339
<b>Kentucky, total.....</b>						<b>Wyoming, total.....</b>					
Under 25.....	326	392	54,134	59,451,332	94,669,146	Under 25.....	23	38	4,649		8,660,391
25 and over but under 36.....	14	18	1,612	1,004,414	1,490,521	40.....	2	2	1,482		843,431
36 and over but under 40.....	46	72	10,198	9,422,571	13,832,227	44 and over but under 48.....	3	3	4,167		7,816,960
40.....	52	61	6,845	7,018,739	12,877,053	48.....	18	33	4,409		6,173,601
44 and over but under 48.....	3	3	1,083	1,714,513	2,657,785	<b>Oklahoma, total.....</b>					
48.....	176	196	28,451	32,316,834	52,209,112	Under 25.....	3	4	77		63,349
Over 48 but under 54.....	3	3	149	104,218	133,140	25 and over but under 36.....	4	6	331		488,905
54 and over but under 63.....	15	21	4,617	5,981,004	9,936,969	36 and over but under 40.....	2	2	1,195		282,941
<b>Kentucky, total.....</b>						<b>Missouri, total.....</b>					
Under 25.....	14	18	1,612	1,004,414	1,490,521	Under 25.....	4	4	175		200,643
25 and over but under 36.....	46	72	10,198	9,422,571	13,832,227	25 and over but under 36.....	8	10	1,272		2,004,534
36 and over but under 40.....	6	6	589	589,889	850,424	36 and over but under 40.....	3	3	118		101,322
40.....	52	61	6,845	7,018,739	12,877,053	40.....	12	13	537		1,599,773
44 and over but under 48.....	3	3	1,083	1,714,513	2,657,785	Over 40 but under 44.....	1	1	1,111		668,171
48.....	176	196	28,451	32,316,834	52,209,112	44 and over but under 48.....	2	2	1,640		3,542,571
Over 48 but under 54.....	3	3	149	104,218	133,140	48.....	36	37	1,840		634,026
54 and over but under 63.....	15	21	4,617	5,981,004	9,936,969	54 and over but under 63.....	6	6	183		
<b>Kentucky, total.....</b>						<b>Missouri, total.....</b>					
Under 25.....	14	18	1,612	1,004,414	1,490,521	Under 25.....	4	4	175		200,643
25 and over but under 36.....	46	72	10,198	9,422,571	13,832,227	25 and over but under 36.....	8	10	1,272		2,004,534
36 and over but under 40.....	6	6	589	589,889	850,424	36 and over but under 40.....	3	3	118		101,322
40.....	52	61	6,845	7,018,739	12,877,053	40.....	12	13	537		1,599,773
44 and over but under 48.....	3	3	1,083	1,714,513	2,657,785	Over 40 but under 44.....	1	1	1,111		668,171
48.....	176	196	28,451	32,316,834	52,209,112	44 and over but under 48.....	2	2	1,640		3,542,571
Over 48 but under 54.....	3	3	149	104,218	133,140	48.....	36	37	1,840		634,026
54 and over but under 63.....	15	21	4,617	5,981,004	9,936,969	54 and over but under 63.....	6	6	183		
<b>Kentucky, total.....</b>						<b>Missouri, total.....</b>					
Under 25.....	14	18	1,612	1,004,414	1,490,521	Under 25.....	4	4	175		200,643
25 and over but under 36.....	46	72	10,198	9,422,571	13,832,227	25 and over but under 36.....	8	10	1,272		2,004,534
36 and over but under 40.....	6	6	589	589,889	850,424	36 and over but under 40.....	3	3	118		101,322
40.....	52	61	6,845	7,018,739	12,877,053	40.....	12	13	537		1,599,773
44 and over but under 48.....	3	3	1,083	1,714,513	2,657,785	Over 40 but under 44.....	1	1	1,111		668,171
48.....	176	196	28,451	32,316,834	52,209,112	44 and over but under 48.....	2	2	1,640		3,542,571
Over 48 but under 54.....	3	3	149	104,218	133,140	48.....	36	37	1,840		634,026
54 and over but under 63.....	15	21	4,617	5,981,004	9,936,969	54 and over but under 63.....	6	6	183		

1 Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

2 See headnote.

Days per week in operation (Table 23).—The schedule used in the canvass for 1929 presented the following inquiry:

“Does the number of hours (per week for individual wage earner) refer to a 6-day, a 5½-day, or a 5-day week, or to some other basis (specify)?” The number of days reported, therefore, represents what the operators considered normal for the year. Those who reported

less than 5 days would undoubtedly have operated more days per week had it been necessary to supply any increase in the demand for coal. On the other hand, those who reported six and seven days per week include a number of enterprises which found it necessary to work fewer days per week for a considerable part of the year, due to slack demand. See explanation preceding Table 18, pertaining to derived averages.

TABLE 23.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO NUMBER OF DAYS IN OPERATION PER WEEK, FOR THE ANTHRACITE AND THE BITUMINOUS-COAL INDUSTRIES, FOR THE UNITED STATES AND FOR SELECTED STATES: 1929

[This table does not include data for 2,155 bituminous-coal enterprises whose value of product was less than \$20,000. Such enterprises were permitted to report on an abbreviated schedule, which did not call for information pertaining to time in operation. These enterprises reported a combined value of products of \$17,727,035. However, data for 1 such enterprise are included in this table. The table covers data for all enterprises in the anthracite industry]

ANTHRACITE (Pennsylvania), total						ILLINOIS, total							
STATE AND DAYS PER WEEK	Number of enterprises	Number of mines	Wage earners, Dec. 14 or nearest representative day	Wages	Coal produced, tons <sup>1</sup>	Value of products	STATE AND DAYS PER WEEK	Number of enterprises	Number of mines	Wage earners, Dec. 14 or nearest representative day	Wages	Coal produced, tons <sup>1</sup>	Value of products
ANTHRACITE (Pennsylvania), total	198	303	2147,200	\$229,907,059	66,558,830	\$384,854,300	Illinois, total	215	232	52,924	\$67,952,176	60,072,375	\$113,197,220
Three or under	2	2					Three or under	16	17	3,638	3,047,504	2,472,371	4,544,141
Three and one-half	1	1					Three and one-half	3	3	1,890	2,445,630	1,968,478	4,044,190
Four and one-half	1	1	3 714	601,897	165,904	839,905	Four	14	17	5,354	7,203,937	6,449,356	11,478,473
Seven	1	1					Four and one-half	2	2	1,888	2,262,132	2,128,099	3,629,711
Four	3	3	475	558,154	165,992	938,830	Five	10	11	215	377,389	752,138	1,170,798
Five	6	6	86	97,750	61,773	186,993	Five and one-half	4	4	215	377,389	752,138	1,170,798
Five and one-half	14	10	3,429	5,461,584	1,625,531	8,529,593	Six	163	176	39,721	52,083,345	45,298,567	86,893,280
Six	170	273	142,556	223,249,674	64,539,579	374,358,973	Seven	3	3	314	532,230	1,003,316	1,436,618
BITUMINOUS COAL, total	2,821	3,465	472,965	563,040,468	628,380,790	948,066,686	Alabama, total	105	128	25,113	23,385,886	17,982,820	38,113,314
Three or under	124	133	13,277	11,039,617	10,339,674	17,751,639	Three or under	11	12	1,597	1,186,891	1,095,610	2,245,546
Three and one-half	33	41	5,397	5,727,775	4,480,254	9,012,723	Three and one-half	4	4	909	1,033,020	660,429	1,517,667
Four	159	204	28,376	30,963,586	28,239,988	49,189,860	Four	11	16	2,023	1,680,526	1,665,642	2,920,185
Four and one-half	46	66	7,858	8,742,060	8,076,584	14,075,921	Four and one-half	2	2	6,970	7,058,659	5,468,123	11,132,057
Five	269	317	46,437	46,937,030	43,602,672	80,160,041	Five	26	34	550	628,032	439,629	935,434
Five and one-half	84	99	8,453	9,815,204	9,748,723	17,291,716	Five and one-half	5	6	13,064	11,898,702	8,663,397	19,362,425
Six	2,101	2,600	368,774	449,167,086	422,730,286	759,747,731	Six	46	56	22,855,162	22,746,065	34,549,828	
Seven	6	6	393	647,201	1,163,512	1,697,065	Ohio, total	197	222	22,620	22,855,162	22,746,065	34,549,828
Pennsylvania, total	661	897	120,944	154,629,725	141,695,544	258,024,050	Three or under	5	5	360	185,036	183,270	255,685
Three or under	31	33	2,369	1,994,398	1,845,808	3,201,403	Three and one-half	6	6	280	273,674	220,004	416,036
Three and one-half	10	16	888	714,938	628,687	1,105,299	Four	2	2	1,013	1,030,102	1,070,363	1,737,466
Four	37	42	4,073	4,361,133	3,690,649	7,274,792	Four and one-half	12	12	750	948,899	939,277	1,757,776
Four and one-half	7	13	1,484	1,907,442	1,930,237	3,186,369	Five and one-half	158	183	20,211	20,417,451	20,333,151	30,382,966
Five	57	71	9,258	11,715,963	10,929,389	21,086,189	Indiana, total	97	110	13,625	17,579,962	13,137,251	30,643,221
Five and one-half	34	42	2,260	2,271,859	1,878,008	3,417,277	Three or under	3	3	353	524,133	520,463	931,663
Six	485	630	100,616	131,664,495	120,792,166	218,752,721	Three and one-half	1	1	883	1,124,233	978,868	1,722,208
West Virginia, total	545	689	100,798	125,542,999	138,186,366	215,881,985	Four	6	6	619	1,027,919	876,609	1,848,189
Three or under	13	14	1,578	1,359,010	1,705,659	2,080,033	Four and one-half	2	2	11,770	14,903,677	15,761,311	26,141,161
Three and one-half	2	2	1,764	1,987,114	2,186,231	3,010,343	Five	3	3	12,029	11,716,409	12,646,684	20,985,061
Four	11	13	1,548	1,999,562	2,123,892	3,298,878	Virginia, total	53	66	12,029	11,716,409	12,646,684	20,985,061
Four and one-half	7	14	7,204	9,924,045	10,663,106	17,474,490	Three or under	3	3	255	245,747	232,946	378,690
Five	38	46	2,417	3,259,478	3,484,218	5,403,571	Four	5	6	1,184	1,246,538	1,243,647	1,780,084
Five and one-half	9	14	86,287	107,013,790	118,023,260	184,009,670	Four and one-half	1	3	1,604	1,400,846	1,409,715	2,186,570
Six	465	596	87,895	59,451,332	60,202,635	94,669,146	Five	7	9	9,086	8,823,278	9,760,376	16,033,377
Kentucky, total	326	392	59,451,332	60,202,635	94,669,146		Six	37	45	11,752	15,297,471	9,594,248	25,832,243
Three or under	16	19	1,061,624	1,061,624	1,207,028	1,592,506	Colorado, total	99	102	11,752	15,297,471	9,594,248	25,832,243
Three and one-half	3	4	379	248,404	320,946	350,781	Three or under	4	4	656	651,476	476,233	1,075,971
Four	35	52	8,280	7,463,601	8,248,428	10,692,052	Four	4	4	379	550,129	378,964	1,220,632
Four and one-half	10	13	1,677	1,371,357	1,348,684	2,113,378	Five	6	6	224	255,725	176,604	479,702
Five	60	70	8,921	9,144,028	8,800,158	14,744,276	Six	84	87	10,493	13,840,141	8,562,447	23,006,938
Five and one-half	7	7	317	730,044	773,919	1,094,731	Seven	1	1				
Six	195	227	36,216	39,432,279	39,498,472	64,111,422							

<sup>1</sup> Tons, for anthracite, 2,240 pounds; for bituminous coal, 2,000 pounds.  
<sup>2</sup> This total differs considerably from that for "Wage earners (average for the year)," 142,801 for anthracite and 447,125 for bituminous coal, given in certain other tables of this report. See GENERAL EXPLANATIONS—Persons Engaged.  
<sup>3</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.  
<sup>4</sup> See headnote.

Wage earners employed, by months (Tables 24 and 25).—Table 24 gives statistics for wage earners employed below ground and on the surface. (See head-note, Table 24.) For bituminous underground mines reporting these data, 86.5 per cent and 13.5 per cent of wage earners were employed underground and on the surface, respectively. These percentages vary from State to State, due to the differences in mining conditions as well as to the nature and extent of processing of coal in preparation plants. Open-pit bituminous mines employed 8,489 wage earners (average for the year) or 1.9 per cent of the total number.

Underground mines employed practically all the wage earners in the anthracite industry. Of these 78 per cent were employed underground and 22 per cent on the surface. The higher percentage of wage earners on the surface for anthracite mines as com-

pared with bituminous mines reflects the relative requirements of preparation of the mined products.

Table 25 shows the degree of regularity in the coal-mining industries for 1929, 1919, and 1909 for the United States as a whole and for principal States for 1929. The number given for each month represents the number on the pay roll on the 15th of the month and does not take into account the fluctuations in the numbers employed that occur within the month or part-time employment. In the bituminous-coal industry, the ratios of minimum to maximum employment for the three leading States—Pennsylvania, West Virginia, and Kentucky—and Alabama appreciably raise the combined ratio for all States, since some of the other States show wide fluctuations in employment during the year.

TABLE 24.—WAGE EARNERS, BY MONTHS, FOR UNDERGROUND MINES, EMPLOYED BELOW GROUND AND ON THE SURFACE, AND FOR OPEN-PIT MINES, FOR THE ANTHRACITE AND THE BITUMINOUS-COAL INDUSTRIES, BY STATES: 1929

[This table does not include data for 2,155 bituminous-coal enterprises whose value of product was less than \$20,000. Such enterprises were permitted to report on an abbreviated schedule, which did not call for information as to kind of operation or below-ground and surface employees. These enterprises employed a total of 11,607 wage earners. However, data for 1 such enterprise are included in this table. The table covers data for all enterprises in the anthracite industry. The month of maximum employment is indicated by bold-faced figures and that of minimum employment by italic figures]

STATE AND CLASS OF MINE AND WAGE EARNER	Average number employed during year	NUMBER EMPLOYED ON 15TH DAY OF MONTH OR NEAREST REPRESENTATIVE DAY												Per cent minimum is of maximum
		January	February	March	April	May	June	July	August	September	October	November	December	
<b>ANTHRACITE (Pennsylvania), total</b> .....	142,801	151,788	147,181	130,468	145,788	144,770	182,159	<i>127,108</i>	140,835	144,195	146,303	146,702	147,241	83.7
Underground mines, total.....	142,063	151,244	146,719	138,767	144,985	143,871	131,275	<i>126,860</i>	140,088	143,507	145,460	140,007	140,409	83.5
Below ground.....	110,857	118,005	114,565	108,365	113,879	112,528	102,832	<i>97,992</i>	109,297	111,912	113,514	113,932	114,468	83.0
Surface.....	31,206	33,239	32,154	30,402	31,006	31,343	28,943	<i>28,363</i>	30,791	31,595	31,952	32,075	32,001	86.3
Washeries, dredges, and open-pit mines.....	738	539	<i>492</i>	701	803	899	884	743	747	688	837	785	772	51.4
<b>BITUMINOUS COAL, total</b> .....	447,125	468,779	470,383	462,662	433,182	424,457	<i>422,016</i>	425,558	434,086	444,241	456,858	461,759	464,020	89.7
Underground mines, total.....	438,036	457,551	460,746	453,558	424,918	416,300	<i>413,609</i>	417,793	426,285	436,330	447,907	453,159	455,414	89.8
Below ground.....	379,437	397,301	400,082	393,826	367,762	359,580	<i>356,759</i>	359,845	367,413	376,837	387,245	392,247	394,349	89.2
Surface.....	59,199	60,250	60,664	59,732	57,156	56,720	<i>50,860</i>	57,948	58,872	59,493	60,722	60,912	61,065	92.9
Open-pit mines.....	8,489	9,228	9,637	9,104	8,264	8,157	8,406	<i>7,765</i>	7,801	7,911	8,391	8,000	8,606	80.6
Underground mines:														
Alabama, total.....	24,284	24,649	24,035	24,518	24,264	24,056	24,067	<i>23,987</i>	23,952	23,991	24,207	24,524	24,605	97.1
Below ground.....	20,863	20,619	20,684	20,545	20,298	20,172	20,212	<i>20,040</i>	20,064	20,084	20,303	20,572	20,645	96.0
Surface.....	3,931	4,030	3,951	3,973	3,966	3,884	3,855	3,937	3,888	3,907	3,904	3,952	3,960	95.7
Colorado, total.....	10,988	12,045	11,805	11,055	8,810	8,222	<i>8,006</i>	8,226	8,738	10,193	10,922	11,410	11,621	66.5
Below ground.....	8,455	10,208	10,008	9,303	7,347	6,814	<i>6,081</i>	6,770	7,196	8,535	9,162	9,649	9,835	64.9
Surface.....	1,633	1,837	1,797	1,752	1,463	1,408	<i>1,325</i>	1,447	1,542	1,658	1,760	1,761	1,786	75.4
Illinois, total.....	47,219	54,806	53,005	53,131	43,114	40,083	<i>39,455</i>	41,471	44,050	47,184	49,427	50,286	49,011	72.7
Below ground.....	43,075	49,862	49,095	48,721	39,478	37,120	<i>35,915</i>	37,722	40,068	42,921	44,982	45,726	45,292	72.0
Surface.....	4,144	4,944	4,510	4,410	3,636	3,563	<i>3,540</i>	3,749	3,987	4,263	4,445	4,560	4,619	76.7
Indiana, total.....	10,557	11,750	11,677	11,304	10,167	10,134	9,951	9,816	<i>9,498</i>	10,065	10,587	10,671	11,063	80.8
Below ground.....	9,490	10,547	10,476	10,143	9,150	9,133	8,949	8,818	<i>8,550</i>	9,078	9,533	9,673	9,929	81.1
Surface.....	1,067	1,203	1,201	1,161	1,017	1,001	1,002	998	<i>948</i>	987	1,054	1,098	1,134	78.8
Iowa, total.....	5,455	6,164	6,283	6,068	5,012	4,364	<i>4,280</i>	4,464	4,546	5,522	6,013	6,249	6,510	65.4
Below ground.....	5,044	5,708	5,828	5,620	4,640	4,015	<i>3,927</i>	4,120	4,182	5,092	5,553	5,776	6,047	64.9
Surface.....	411	456	455	442	372	349	<i>353</i>	344	364	430	460	473	463	70.4
Kentucky, total.....	63,710	54,866	55,307	54,007	52,567	51,726	<i>51,321</i>	51,837	52,951	53,548	55,102	55,110	55,581	92.3
Below ground.....	46,380	47,369	47,806	47,150	45,318	44,635	<i>44,200</i>	44,632	45,508	46,146	47,567	47,606	48,020	92.0
Surface.....	7,380	7,497	7,501	7,457	7,249	7,091	<i>7,121</i>	7,205	7,443	7,402	7,535	7,504	7,561	93.8
Missouri, total.....	3,238	3,670	3,683	3,456	2,962	2,810	2,706	<i>2,689</i>	3,031	3,244	3,389	3,545	3,678	73.0
Below ground.....	2,987	3,389	3,397	3,200	2,733	2,577	2,486	<i>2,467</i>	2,795	3,004	3,124	3,275	3,404	72.5
Surface.....	251	281	286	256	229	233	<i>220</i>	236	236	240	265	270	274	76.9
Ohio, total.....	19,325	19,572	20,079	20,024	17,880	<i>17,347</i>	17,968	18,350	19,216	19,717	20,356	20,683	20,703	83.8
Below ground.....	17,200	17,476	17,966	17,863	15,949	<i>15,461</i>	16,005	16,266	17,078	17,485	18,053	18,372	18,412	84.0
Surface.....	2,125	2,096	2,113	2,161	1,931	<i>1,886</i>	1,963	2,084	2,138	2,232	2,298	2,311	2,291	81.6

<sup>1</sup> Data for 2 mines having both open-pit and underground operations are included in the figures for open-pit mines in this table, while these data are included in the figures for underground mines in Table 9.



## MINES AND QUARRIES

TABLE 24.—WAGE EARNERS, BY MONTHS, FOR UNDERGROUND MINES, EMPLOYED BELOW GROUND AND ON THE SURFACE, AND FOR OPEN-PIT MINES, FOR THE ANTHRACITE AND THE BITUMINOUS-COAL INDUSTRIES, BY STATES: 1929—Continued

STATE AND CLASS OF MINE AND WAGE EARNER	Average number employed during year	NUMBER EMPLOYED ON 15TH DAY OF MONTH OR NEAREST REPRESENTATIVE DAY												Per cent minimum is of maximum
		January	February	March	April	May	June	July	August	September	October	November	December	
<b>BITUMINOUS COAL—Continued.</b>														
<b>Underground mines—Continued</b>														
Oklahoma, total.....	4,077	4,893	4,988	3,640	2,874	<i>2,599</i>	3,019	3,502	4,090	4,475	4,915	4,936	4,974	52.1
Below ground.....	3,653	4,388	4,475	3,267	2,556	<i>2,296</i>	2,703	3,133	3,681	4,004	4,405	4,436	4,460	52.0
Surface.....	424	505	513	382	318	<i>273</i>	316	369	418	471	510	500	514	53.1
Pennsylvania, total.....	117,684	119,073	121,196	121,537	118,537	116,066	115,283	<i>115,008</i>	115,123	115,842	116,633	118,283	110,533	94.6
Below ground.....	102,558	103,943	105,903	106,316	103,685	101,766	100,333	<i>99,668</i>	100,067	100,332	101,294	102,902	104,324	94.0
Surface.....	15,126	15,130	15,293	15,221	14,852	<i>14,300</i>	14,950	15,038	15,056	15,510	15,339	15,321	15,209	97.1
Tennessee, total.....	6,588	6,452	6,500	6,464	<i>6,148</i>	6,529	6,417	6,460	6,537	6,748	6,900	6,976	6,993	88.0
Below ground.....	5,548	5,429	5,461	5,397	<i>5,174</i>	5,407	5,417	5,423	5,500	5,713	5,837	5,908	5,820	87.6
Surface.....	1,040	1,023	1,039	1,067	<i>969</i>	1,032	1,000	1,037	1,037	1,035	1,063	1,071	1,173	87.1
Virginia, total.....	11,803	12,382	12,325	12,220	11,694	11,634	11,631	<i>11,484</i>	11,550	11,720	11,870	11,550	11,500	92.7
Below ground.....	9,926	10,478	10,420	10,318	9,861	9,793	9,755	<i>9,595</i>	9,644	9,886	9,967	9,675	9,716	91.6
Surface.....	1,877	1,904	1,905	1,902	<i>1,833</i>	1,841	1,876	1,889	1,906	1,834	1,903	1,875	1,784	96.2
West Virginia, total.....	97,882	97,686	98,388	97,046	97,115	<i>96,531</i>	96,671	97,035	98,056	97,538	98,207	99,627	98,728	96.9
Below ground.....	82,555	82,680	83,251	82,901	82,017	<i>81,532</i>	81,421	81,501	82,419	82,082	83,386	84,110	83,204	90.7
Surface.....	15,327	<i>15,006</i>	15,137	15,045	15,098	15,109	15,250	15,534	15,637	15,456	15,821	15,517	15,524	96.0
Wyoming, total.....	4,626	4,820	5,015	4,701	4,939	4,931	4,853	4,000	4,302	4,005	4,943	5,178	5,121	76.3
Below ground.....	3,811	3,908	4,063	3,957	3,552	3,289	3,225	3,275	3,036	4,086	4,089	4,309	4,251	74.8
Surface.....	815	912	952	884	787	742	728	734	756	819	854	869	870	70.5
Other States, total.....	22,100	25,214	25,280	22,788	19,440	18,968	<i>18,301</i>	19,607	20,546	22,132	23,436	24,122	24,884	74.8
Below ground.....	18,452	21,207	21,249	19,119	16,104	15,650	<i>15,592</i>	16,106	17,024	18,480	19,085	20,298	20,930	73.4
Surface.....	3,648	4,007	4,031	3,669	3,336	3,318	<i>3,309</i>	3,401	3,522	3,643	3,751	3,824	3,954	82.5

TABLE 25.—WAGE EARNERS, BY MONTHS, FOR THE UNITED STATES AND FOR THE ANTHRACITE AND THE BITUMINOUS-COAL INDUSTRIES, 1929, 1919, AND 1909, AND FOR THE BITUMINOUS-COAL INDUSTRY, BY STATES

[The month of maximum employment is indicated by bold-faced figures and that of minimum employment by *italic* figures]

STATE	Average number employed during year	NUMBER EMPLOYED ON 15TH DAY OF MONTH OR NEAREST REPRESENTATIVE DAY												Per cent minimum is of maximum
		January	February	March	April	May	June	July	August	September	October	November	December	
United States:														
1929.....	601,533	630,946	630,087	614,265	589,839	579,782	564,681	<i>563,385</i>	586,014	600,082	614,774	620,864	623,685	80.3
1919.....	693,170	736,105	707,846	693,563	675,373	680,035	680,057	715,294	732,340	742,826	750,897	<i>758,860</i>	738,744	61.1
1909.....	681,090	691,244	686,322	679,791	649,870	<i>646,592</i>	652,894	659,434	667,146	685,284	704,930	720,341	729,873	88.7
Anthracite (Pennsylvania):														
1929.....	142,801	151,788	147,181	139,468	145,788	144,770	132,159	<i>127,103</i>	140,835	144,195	146,303	146,702	147,241	83.7
1919.....	147,372	146,241	145,985	143,437	<i>142,091</i>	144,925	145,010	143,397	149,220	149,827	150,847	150,594	151,555	94.1
1909.....	169,175	172,679	172,417	173,906	167,928	168,007	168,715	167,166	<i>165,486</i>	165,760	169,729	170,358	168,943	95.7
Bituminous coal:														
1929.....	458,732	479,163	482,906	474,797	444,051	435,012	<i>423,522</i>	436,280	445,179	455,887	468,471	474,072	476,444	89.6
1919.....	545,798	539,364	561,861	550,126	532,682	535,110	<i>541,647</i>	560,897	583,120	593,304	598,550	<i>608,466</i>	587,140	51.4
1909.....	511,915	518,565	513,905	506,885	481,942	<i>478,586</i>	484,179	492,288	501,660	519,474	535,210	540,933	560,330	85.4
Alabama.....	24,781	25,221	25,210	24,989	24,727	24,523	24,569	24,434	<i>24,410</i>	24,469	24,743	25,000	25,074	96.8
Arkansas.....	3,651	4,388	4,333	2,666	<i>2,014</i>	2,448	2,813	3,404	3,850	4,281	4,452	4,572	4,562	43.9
Colorado.....	10,420	12,443	12,195	11,418	9,101	8,493	<i>8,269</i>	8,497	9,025	10,523	11,281	11,734	12,003	96.6
Illinois.....	49,817	56,809	56,266	55,811	45,635	43,219	<i>41,932</i>	44,057	46,693	49,770	52,095	52,974	52,548	73.2
Indiana.....	12,860	14,187	14,168	13,774	12,435	12,298	12,295	12,039	<i>11,692</i>	12,283	12,862	12,924	13,410	81.0
Iowa.....	5,942	6,713	6,844	6,611	5,462	4,760	<i>4,640</i>	4,861	4,940	6,013	6,551	6,810	7,089	65.5
Kansas.....	3,405	4,169	4,188	4,000	2,524	2,380	<i>2,459</i>	2,684	3,203	3,555	3,846	3,837	3,869	50.9
Kentucky.....	54,904	56,243	56,096	55,745	53,570	52,755	<i>52,340</i>	52,865	54,065	54,666	56,462	56,473	56,671	91.0
Maryland.....	3,042	3,173	3,213	3,172	2,993	2,842	<i>2,949</i>	2,940	2,893	2,974	3,134	3,176	3,207	86.0
Missouri.....	4,657	6,276	5,209	4,931	4,305	4,131	3,973	<i>3,945</i>	4,421	4,677	4,796	4,986	5,175	74.8
Montana.....	1,983	2,338	2,323	2,197	1,879	1,590	<i>1,532</i>	1,567	1,692	1,938	2,230	2,261	2,196	65.5
New Mexico.....	3,120	3,449	3,469	3,470	3,296	3,244	3,120	3,082	2,936	<i>2,758</i>	2,842	2,830	2,847	79.5
North Dakota.....	994	1,230	1,142	1,044	690	666	689	708	743	1,095	1,277	1,327	1,303	50.1
Ohio.....	21,739	21,933	22,746	22,670	20,263	<i>19,555</i>	20,196	20,621	21,598	22,052	22,866	23,211	23,162	84.2
Oklahoma.....	4,716	5,678	5,791	4,313	3,377	<i>3,079</i>	3,557	4,084	4,715	5,123	5,570	5,650	5,673	53.2
Oregon.....	33	39	33	37	32	30	31	28	30	30	33	34	34	71.8
Pennsylvania.....	121,000	122,450	124,029	124,980	121,875	119,971	118,519	<i>118,223</i>	118,316	118,570	119,900	121,615	122,063	94.0
Tennessee.....	6,322	6,808	6,800	6,818	6,474	6,888	6,727	6,590	6,683	6,859	7,013	7,094	7,048	91.3
Texas.....	1,235	1,262	1,229	1,227	1,219	1,210	1,221	1,232	1,215	1,214	1,232	1,274	1,288	94.1
Utah.....	3,452	4,060	3,938	3,486	3,078	2,819	<i>2,733</i>	2,764	2,991	3,423	3,771	4,037	4,327	63.2
Virginia.....	11,956	12,542	12,485	12,378	11,846	11,785	11,732	<i>11,633</i>	11,999	11,878	12,024	11,706	11,719	92.8
Washington.....	2,835	3,050	3,085	3,007	2,809	2,755	2,681	2,658	<i>2,574</i>	2,675	2,760	2,877	2,995	83.2
West Virginia.....	99,217	99,243	99,959	99,500	98,639	98,044	98,190	<i>98,042</i>	99,073	98,610	100,360	100,925	100,013	97.1
Wyoming.....	4,603	4,901	5,092	4,862	4,401	4,089	<i>4,014</i>	4,073	4,460	4,980	5,016	5,253	5,172	76.4
Other States.....	1,458	1,503	1,730	1,691	1,298	1,445	1,456	1,240	1,319	1,412	1,355	1,403	1,578	71.7

<sup>1</sup> Figures for 1909 are not comparable with those for 1919 and 1929 due to the fact that data relating to the manufacture of coke at the mine are included in the figures for 1909.

GENERAL TABLES

Tables 26 and 27 present in detail, for 1929, statistics relating to the coal-mining industries for the United States as a whole and for each State for which separate figures can be given without disclosing, exactly or approximately, the data reported by individual enterprises.

TABLE 26.—CONSUMPTION OF FUEL AND ELECTRIC ENERGY, BY STATES: 1929

[This table does not include data for 2,155 bituminous-coal enterprises whose value of product was less than \$20,000. Such enterprises were permitted to report on an abbreviated schedule, which did not call for information pertaining to fuel and electric energy consumed. These enterprises reported a combined value of products of \$17,727,085, or 1.8 per cent of the total. However, the table covers data for all enterprises in the anthracite industry]

STATE	FUEL AND ELECTRIC ENERGY CONSUMED								
	FUEL						ELECTRIC ENERGY		
	COAL		Coke	Fuel oils	Gasoline and kerosene	GAS		Purchased	Generated by enterprises reporting
	Anthracite	Bituminous				Manufactured	Natural		
	Tons, 2,240 pounds	Tons, 2,000 pounds	Gallons	Gallons	M cubic feet	M cubic feet	Kw.-hours	Kw.-hours	
United States.....	5,044,989	4,553,300	30,301	748,871	847,007	56,471	246,529	2,514,596,840	942,939,404
Anthracite (Pennsylvania).....	5,044,989	28,833	30,301	36,930	92,033	56,471	246,529	470,248,027	478,423,569
Bituminous.....		4,524,467		711,941	754,974			2,044,348,813	464,540,925
Alabama.....		120,628	8,015		27,070			152,287,482	21,580,610
Arkansas.....		17,925		5,344	23,455			8,613,640	
Colorado.....		187,875			5,491			35,147,016	7,455,462
Illinois.....		960,260		104,499	186,962			140,223,868	38,204,585
Indiana.....		354,237		3,600	100,830			56,144,832	2,035,985
Iowa.....		56,762	25	21,100	2,400			12,002,539	
Kansas.....		56,611		820	9,200			5,143,373	162,200
Kentucky.....		432,023	750	2,080	29,134		102,345	171,230,702	52,660,166
Maryland.....		12,531		39,000	10,855		600	8,395,839	1,492,456
Missouri.....		72,588			15,717			10,823,140	27,080,000
Montana.....		39,367						12,619,103	2,009,140
New Mexico.....		42,614						9,856,680	13,507,960
North Dakota.....		33,716	600	4,500	72,140	55,827		1,727,350	24,500
Ohio.....		151,544		425,825	73,440			50,620,755	3,701,030
Oklahoma.....		63,125		187	13,508		12,375	10,704,762	40,800
Oregon.....		460						83,498	
Pennsylvania.....		1,045,805	20,911	32,024	120,991		88,525	668,536,799	118,857,253
Tennessee.....		52,745		3,402	22,930			25,953,621	7,692,000
Texas.....		17,671			500			629,313	
Utah.....		16,460			10,200			33,065,901	681,404
Virginia.....		38,092		2,400				62,998,714	201,600
Washington.....		29,760						29,551,356	
West Virginia.....		511,284		7,160	15,568	1,144	42,684	515,737,650	113,529,744
Wyoming.....		174,827						9,917,668	50,305,945
Other States.....		44,952			5,574			2,436,303	3,278,092

MINES AND QUARRIES

TABLE 27.—DETAILED STATISTICS FOR THE INDUSTRY, BY STATES: 1929 1

[This table presents statistics for each State for which it is possible to give separate figures without disclosing data for individual enterprises. Certain of the "Other States," however, were of greater importance in the industry than some of the States shown separately.]

STATE	Num-ber of enter-prises	Num-ber of min-ers (all classes)	PERSONS ENGAGED IN INDUSTRY				PRINCIPAL EXPENSES OF OPERATION AND DEVELOPMENT							Ex-pen-ditures for de-velop-ment (in-cluded in prin-cipal ex-penses) (thou-sands)	Coal produced, tons (2,000 pounds)		
			Total	Pro-ducers and mem-bers	Prin-cipal salar-ied offi-cers and of-ficers of cor-pora-tions	Other salar-ied offi-cers and em-ploy-ees	Wage earners (aver-age for the year)	Salaries and wages			Contract work	Cost of supplies, fuel, and purchased electric energy					
								Dollars	Dollars	Dollars		Dollars	Dollars			Dollars	Dollars
United States.....	5,174	5,923	633,935	3,021	2,845	25,636	601,533	1,083,637,347	10,852,695	57,323,265	804,767,131	8,691,435	149,805,887	14,949,026	37,247,908	24,548	611,988,395
Anthracite (Pennsylvania).....	198	303	150,494	38	163	7,492	142,801	313,400,536	854,016	18,451,914	229,967,059	6,801,808	43,307,491	7,419,721	6,508,527	7,902	74,545,900
Bituminous.....	4,976	5,620	482,541	2,983	2,682	18,144	488,732	770,236,811	9,998,679	33,841,351	574,800,072	1,889,627	106,438,396	7,529,305	30,739,381	16,646	537,442,495
Alabama.....	157	180	26,039	39	118	1,101	24,781	33,761,052	572,261	2,185,063	23,668,802	91,317	5,449,568	242,057	1,563,984	871	18,189,453
Arkansas.....	83	86	3,880	53	66	110	3,661	136,727	189,145	3,630,148	15,235	48,346	3,630,148	48,346	202,644	182	1,823,524
Colorado.....	173	176	10,957	97	75	365	10,420	20,824,446	336,372	862,378	15,700,860	261,306	2,616,787	333,088	723,655	703	9,832,839
Illinois.....	384	401	52,196	265	212	1,902	49,817	90,219,849	906,551	3,905,612	68,922,106	204,107	12,115,662	1,574,227	2,591,524	2,668	60,705,123
Indiana.....	222	235	13,711	199	87	565	12,860	24,865,734	419,330	1,082,369	18,101,859	43,245	3,718,903	510,387	989,641	275	18,624,608
Iowa.....	167	172	6,368	160	65	201	5,942	9,800,629	209,952	430,226	7,820,579	2,170	988,425	121,069	227,112	305	4,285,368
Kansas.....	150	155	3,716	205	79	79	3,405	4,818,602	66,350	161,361	3,617,171	7,097	710,406	121,780	135,487	296	2,956,190
Kentucky.....	434	500	57,912	128	419	2,461	54,904	80,447,826	1,247,304	4,688,113	60,155,095	41,468	10,923,814	564,584	2,977,503	1,559	60,894,039
Maryland.....	52	63	3,202	21	30	109	3,042	4,144,131	86,324	240,006	3,114,228	22,216	540,026	24,869	129,689	91	2,638,216
Missouri.....	186	190	5,066	174	74	161	4,657	7,178,368	207,791	273,444	5,150,487	196,676	1,145,658	136,956	241,816	136	3,964,458
Montana.....	66	68	2,154	56	18	97	1,983	4,945,318	70,838	249,660	4,420,551	3,450,551	813,641	37,462	156,480	479	3,442,518
New Mexico.....	28	43	3,324	119	9	176	3,120	6,182,394	51,825	425,977	5,756,417	8,740	899,812	40,909	167,284	177	7,631,042
North Dakota.....	115	115	1,176	114	7	60	994	1,931,997	33,220	132,558	1,799,370	8,740	348,431	40,909	67,351	105	1,631,524
Ohio.....	536	561	22,368	504	111	514	21,739	31,225,670	404,578	1,074,005	24,440,838	89,095	3,894,114	244,111	1,178,371	190	24,601,576
Oklahoma.....	97	113	5,016	49	55	203	4,716	8,774,486	180,210	387,852	6,392,491	1,824	1,384,566	123,131	285,373	150	3,793,174
Oregon.....	3	3	40	1	1	5	33	68,537	300	6,720	51,871	1,474	4,270	1,990	1,912	8	16,368
Pennsylvania.....	1,151	1,397	126,321	645	529	4,147	121,000	208,168,131	1,885,577	9,783,029	157,730,227	461,748	27,915,503	1,815,514	8,574,753	4,564	144,111,440
Tennessee.....	65	78	7,287	17	78	370	6,822	3,683,534	368,970	624,812	3,058,722	5,688	73,742	60,135	317,599	226	40,403,623
Texas.....	22	26	1,369	7	20	47	1,255	2,223,690	38,970	24,317	2,198,373	120,193	120,193	18,037	24,374	13	1,100,397
Utah.....	36	40	3,746	13	36	245	3,453	4,673,521	243,049	580,199	6,685,673	115,657	1,640,510	27,655	428,784	618	5,131,684
Virginia.....	75	88	12,478	28	56	438	11,056	16,730,281	988,099	888,099	11,846,453	2,344	2,554,208	62,759	1,061,402	73	12,745,100
Washington.....	32	33	2,977	14	17	130	2,835	5,685,130	41,715	254,884	4,688,325	2,344	60,858	60,858	232,900	249	2,602,080
West Virginia.....	686	830	104,349	161	545	4,426	99,217	171,764,738	2,168,617	9,790,421	126,350,606	292,028	24,293,487	735,159	8,124,325	2,660	139,031,657
Wyoming.....	35	60	4,903	12	20	173	4,698	11,689,731	86,023	147,161	8,716,950	31,771	1,750,130	366,141	291,546	138	6,700,272
Other States 7.....	21	22	1,547	9	7	73	1,438	2,777,134	89,786	151,725	1,807,681	1,470	609,531	116,926	80,275	61	6,885,292

STATE	Value of products	Machinery and other equipment purchased during the year (total cost)	PRIME MOTORS AND ELECTRIC MOTORS DRIVEN BY PURCHASED ENERGY										Electric motors driven by energy generated by enterprises		Electric generators				
			Aggregate horse-power	Total horse-power of prime movers		Steam engines		Steam turbines		Internal combustion engines		Water wheels and water turbines		Electric motors driven by purchased energy		Number	Horse-power	Number	Kilo-watts
				Number	Horse-power	Number	Horse-power	Number	Horse-power	Number	Horse-power	Number	Horse-power	Number	Horse-power				
United States.....	1,351,548,071	40,527,144	4,165,652	7,828	999,342	481	305,452	523	30,295	5	4,660	73,179	2,825,923	24,296	894,134	1,112	9,354		
Anthracite (Pennsylvania).....	384,854,300	5,579,720	1,041,465	3,285	455,327	282	160,424	98	2,291	5	4,660	6,598	423,423	9,917	464,164	139	9,898		
Bituminous.....	966,693,771	34,947,424	3,124,187	4,542	544,015	199	145,028	425	28,004	5	4,660	66,581	2,402,500	14,379	429,970	973	9,354		
Alabama.....	38,564,531	1,504,760	186,873	98	15,554	7	5,450	22	1,937			3,659	183,932	139	6,148	25	9,354		
Arkansas.....	6,172,710	170,573	20,658	62	6,087			10	270			1,476	14,301			1	9,898		
California.....	26,555,407	683,670	77,174	174	18,663	14	6,405	6	157			1,476	51,944			57	9,898		
Colorado.....	114,017,789	7,431,521	343,193	780	114,093	30	19,801	63	4,281			3,684	991,971	3,084	76,394	165	43,911		
Illinois.....	31,301,936	1,072,936	106,809	366	36,997	6		22	533			2,086	68,297	2,295	9,368	38	7,165		
Iowa.....	11,832,816	146,011	25,763	390	7,020			6	100			543	18,643	37	1,436	6	1,000		
Kansas.....	6,932,839	263,794	18,548	169	11,103	3	30	4	102			277	7,311	20	963	4	1,297		
Kentucky.....	90,647,615	2,715,015	290,955	59,022	37,694	30	20,383	24	813			7,241	237,933	1,071	48,605	125	32,300		
Maryland.....	4,745,279	30,339	11,444	3,364	2,791			3	573			1,094	8,083	104	2,256	10	1,500		
Missouri.....	9,667,708	907,225	34,812	221	12,467			10	248			602	22,087	49	1,605	8	1,097		
Montana.....	7,448,138	591,657	38,896	8,941	6,265	2	800	6	1,875			424	19,055	52	2,787	2	506		
New Mexico.....	8,324,312	125,067	23,813	11	4,315	6	4,710	2	70			268	14,218	293	10,554	11	6,935		
North Dakota.....	3,205,931	80,478	10,310	83	3,832	6		2	126			188	6,509	26	403	8	6,935		
Ohio.....	36,916,271	1,043,869	112,977	233	27,633			40	4,118			2,440	81,226	472	14,597	62	9,636		
Oklahoma.....	10,789,776	234,541	27,789	118	11,492			7	131			3,599	16,166	14	425	6	9,636		
Oregon.....	85,003		170	40	40			1				6	130				625		
Pennsylvania.....	262,456,657	7,911,303	997,157	180,855	131,243	47	41,135	97	8,327	1	150	21,017	756,802	3,104	100,037	217	68,377		
Tennessee.....	9,309,074	178,446	30,684	9,763	6,547	3	2,675	21	541			383	20,821	39	2,697	6	1,455		
Texas.....	1,674,171	47,683	4,966	60	2,988			8	178			784	1,800	19	339	3	1,500		
Utah.....	13,145,832	753,511	36,386	1,030	970			1	60			768	34,356	4	280	7	614		
Virginia.....	21,162,036	752,956	72,126	2,052	1,692	1	150	4	240			1,811	70,044	66	2,227	6	1,150		
Washington.....	8,639,739	183,352	27,302	3,767	3,707			1	50			602	23,535			3	300		
West Virginia.....	217,022,962	7,745,857	642,878	98,300	59,409	38	32,119	30	2,272	3	4,500	14,331	544,578	2,786	91,839	169	54,032		
Wyoming.....	17,118,580	321,201	45,466	26,807	16,637	12	10,170	1	8			1,268	18,659	1,268	40,505	24	17,525		
Other States.....	3,077,656	11,800	8,073	41	4,276			1				106	3,789	97	3,630	10	1,915		

1 See GENERAL EXPLANATIONS—Preparation of Products.  
 2 See GENERAL EXPLANATIONS—The Enterprise.  
 3 For anthracite, includes collieries, washeries, and dredges. See footnote, p. 254.  
 4 Not including data for salaried officers and employees of "Central Administrative" offices. (See Table 20.)  
 5 Includes 90,356 horsepower reported for inactive prime movers (28,595 for the anthracite industry and 61,791 for the bituminous-coal industry).  
 6 Includes 61,428 kilowatts reported for inactive generators (11,775 for the anthracite industry and 49,653 for the bituminous-coal industry).  
 7 Arizona, 4 enterprises; Georgia, 1; Michigan, 7; North Carolina, 1; South Dakota, 8.

# MINES AND QUARRIES—GOLD, SILVER, COPPER, LEAD, AND ZINC

## INTRODUCTION

**Scope of the report.**—This report gives the results of the census of mines and quarries for 1929 for the metal-mining industries, which comprise, as used for convenience in this report, enterprises engaged principally in the mining and milling of materials valuable for their content of one or more of the following metals: Gold, silver, copper, lead, and zinc. It shows the progress of the industries by comparison of the results of the census for 1929 with those for the last two preceding censuses of mines and quarries; the geographic distribution of the industries by States; the size of operating enterprises; power equipment, by kind, number, and capacity; time in operation for enterprises and length of working week for wage earners; the numbers of persons engaged in the industries, classified as proprietors and firm members, salaried officers and employees, and wage earners; and fuel consumption, by kind. It includes also a table presenting statistics in detail for the United States as a whole, for each industry, and for those States for which separate figures can be given without disclosing, exactly or approximately, the data reported by individual enterprises. However, special permission to present State statistics was given in a number of instances by individual operators whose production constituted practically all of the production of an industry within the State, thus making possible more detailed presentation than otherwise would have been permitted under census limitations.

Statistics for the production of placer gold are shown separately from those for the production from lode mines, mine dumps, and old tailings.

The statistics in this report are presented separately for six mining industries; namely, gold (lode), silver, copper, lead, zinc, and gold (placer). The assignment of the mining enterprises to these industries was based on the metal of chief value in the ores, concentrates, bullion, etc., produced during 1929. This classification is necessarily arbitrary because most mines produce ores which contain two or more metals, although some mines produce ores which are distinctly or solely valuable for gold, or silver, or copper, or lead, or zinc. This method of classification is similar to that used in the previous census except that for 1919 but four industry classes were used—gold and silver, copper, lead and zinc, and placer gold. By combining the statistics for 1929 for the gold and the silver, and for the lead

and the zinc industries, respectively, the results are comparable to the figures given for 1919. Any classification of enterprises based on the value of the metal content of the ores would necessarily change from time to time because of price changes, because the relative proportion of metals contained in the ores varies at different depths and portions of the mines, and because of changes in technique which permit higher percentages of recovery from the ores. Thus, certain enterprises which were classified as silver mines in 1919 (due largely to the high price of silver) were classified as zinc or lead mines in 1929.

The statistics relating to nonproducing enterprises (development only) in the metal-mining industries are presented for this group as a whole. Classification by industry was not possible because no product was reported. The statistics for this class are not considered complete because of the intermittent nature of operations, which resulted in failure of contact with the operators, either by mail or field canvass, in many instances.

Beneficiation operations, including concentration, amalgamation, cyanidation, leaching and precipitation, etc., whether conducted at the mine or by independently operated plants, are classified by the census as mining operations and the data for these are, therefore, included in the statistics given in this report. The statistics for the metal-mining industries also include data for operations on mine dumps and old tailings.

On the other hand, the final processes in the extraction of the metals in smelters and refineries, including electrolytic refineries, are classified as manufacturing operations and statistics for these are excluded from this report (as was also done in the report for the census of mines and quarries for 1919). The data for these operations are covered by the statistics for the smelting and refining industries (nonferrous metals), census of manufactures, as are also those for roasting and other beneficiating processes performed at smelting plants. However, data for the reduction of gold and silver ores or concentrates to bullion at mines or mills are included in the statistics given in this report.

**Classification of enterprises and determination of net mine values.**—The schedules for metal mines requested the character, quantity, and value of products. In addition, operators were requested to report

the mine value of the different metals contained in the ore or concentrates produced. If these data were not a matter of record, estimates were accepted. The following excerpt from a census request for this information addressed to a producer of a complex ore containing copper as the principal metal indicates the method of estimating the net value at the mine suggested as a guide in those cases in which operators found it difficult or impossible to compile the data directly from their mill, smelter or refinery settlement returns:

In Inquiry 10, *Products*, care should be taken to report the net value at your mill of your products; that is, the smelter value of the product, less transportation to smelter and all smelter charges (or estimated cost). The net value so ascertained should be apportioned among the metals contained in the concentrates. If apportionment of the net value is not a matter of record or should it be difficult or impossible to determine from your records, it should be prorated on the basis of the proportionate smelter value of each of the metals recovered. The following specifically indicates the method of calculating and reporting the figures desired for your products—

Gross smelter return (or value) of ----- pounds of copper derived from concentrates.....	\$-----
Gross smelter return (or value) of ----- ounces of gold derived from concentrates.....	-----
Gross smelter return (or value) of ----- ounces of silver derived from concentrates.....	-----
Gross smelter return (or value) of ----- pounds of lead derived from concentrates.....	-----
Gross smelter return (or value) of ----- pounds of zinc derived from concentrates.....	-----
Gross smelter value of other products.....	-----
-----	
Total smelter value of metals derived from your concentrates.....	-----
Less smelter, transportation, and all other charges applicable to product after milling....	-----
Net value of metals in concentrates at your mill.....	-----
which is made up as follows:	
Value at mill of copper derived from concentrates.....	-----
Value at mill of gold derived from concentrates....	-----
Value at mill of silver derived from concentrates....	-----
Value at mill of lead derived from concentrates.....	-----
Value at mill of zinc derived from concentrates....	-----
Value at mill of other products.....	-----
-----	
Total net value of concentrates at mill.....	-----

In many cases operators reported as the net value of gold and silver their full refined market value, and charged the principal metal produced with all the costs of transportation, smelting, etc. In such cases the figures were revised so that gold and silver products should carry their proportionate share of these costs, as indicated in the preceding paragraphs. Some operators were able to report net mine or mill values for each of the metals in the ore or concentrates produced, each metal carrying the actual charges ascribable to it. In these instances, the figures were not revised to the basis suggested (i. e., proportionate to the smelter or refined values) but were tabulated as reported. In still other cases, where the *total net value only* of the ore or concentrates was reported, the net value for each metal in the ore or concentrates sold was apportioned on the basis of the gross value of each, which value was obtained by multiplying the

New York average prices for each of the refined metals for the year by the quantity of each produced by the enterprise. This method applied mainly to relatively small producers. The figures given in this report, therefore, represent the results based upon methods as outlined, and are presented with the view to indicate, as closely as possible, the separate contribution of each of the metals.

This information served as a basis on which to classify enterprises according to the metal of principal value in the ores or concentrates produced, as well as a basis for checking, and for estimating when necessary, the net value of receipts to the operator, which was the value of products required by the census schedule, and which has been tabulated by the Census Bureau. Moreover, this procedure has made possible the presentation of the net value of mineral products for each of the several mining industries (excluding the added value resulting from smelting and refining operations), by States, apportioned among the metals produced according to the net value of the contribution of each.

Differences in the value of products as reported by the Bureau of the Census and the Bureau of Mines.—The values of products reported by the Bureau of the Census for the metal-mining industries are based on the net amounts received f. o. b. mines or mills by the operators for ore, concentrates, precipitates, and bullion, or the estimated equivalent of sales values of such products when these were further treated (smelted or refined) by the mining company. The values so reported are not the values of the metals produced or recoverable from these materials by smelting and refining, but are less by at least the costs of transportation to and treatment at smelters and refineries, and the cost of marketing the metals.

On the other hand, the figures reported by the Bureau of Mines represent somewhat different objectives from those of the Bureau of the Census. The primary purpose of the former is to record the physical volume of production—in ounces, pounds, and tons. The Bureau of Mines has tabulated the total quantity of ore mined and the quantities of concentrates and other materials produced, as well as the quantities of recoverable metal, but has not tabulated the actual value of these products to the mine operators. It shows as value of product of the metal mines the full market value (based on New York average prices for the year) of the metals produced or recoverable from the mine and mill products. Moreover, no classification of metal mines based upon the quantity or value of metallic content of ores or concentrates is undertaken by the Bureau of Mines. The quantities and values, as reported by that bureau, comprise the products of all mines without regard to major product or other possible basis of classification, except for placer-gold mines, the data for which are shown separately. There is, therefore, no simple or uniform relation between the value of metals mined, as re-

ported by the Bureau of Mines, and the value of the products of the metal-mining industries, as reported by the Bureau of the Census, but each set of figures supplements the other.

### PRINCIPAL STATISTICS

General summary for the United States: 1929 (Table 1).—This table presents summary statistics for 1929 for the copper, lead, zinc, gold (lode and placer), and silver mining industries: (See explanation, Classification of enterprises, page 1.) Considered as a group, these metal-mining industries ranked second among the mining industries in the United States on the basis of value of products, and third in number of wage earners employed, being exceeded only by the bituminous-coal industry in value of products, and by bituminous-coal and anthracite industries in number of wage earners. Considered separately, however, on the basis of value of products, these metal-mining

industries ranked among the mining industries in the United States, as follows: Copper, third; lead, seventh; zinc, eighth; gold (lode), eleventh; silver, seventeenth; gold (placer), twenty-seventh. The copper industry contributed 66.6 per cent of the value of products of this group, and the others contributed as follows: Lead, 15.9 per cent; zinc, 10.5 per cent; gold (lode), 4.1 per cent; silver, 2 per cent; gold (placer) nine-tenths of 1 per cent.

The value of products includes, in addition to the amounts received for products indicated by the industry designation, receipts for other mineral products, for other products not specified, for custom milling and other treatment of ores, etc., for power sold, and for work or miscellaneous services for other enterprises. The amount of such receipts from various sources in each of the metal-mining industries is shown in Table 3.

TABLE 1.—SUMMARY FOR THE METAL-MINING INDUSTRIES, FOR THE UNITED STATES: 1929

	Total	Copper	Lead	Zinc	Gold		Silver
					Lode	Placer	
Number of enterprises <sup>1</sup> .....	719	143	155	148	174	32	67
Number of mines.....	850	180	171	204	184	37	74
Persons engaged, total <sup>2</sup> .....	85,255	48,043	15,004	12,799	5,885	686	2,838
Proprietors and firm members.....	286	76	53	25	89	18	25
Salaried officers and employees <sup>3</sup> .....	6,036	3,465	944	874	443	80	220
Wage earners (average for the year) <sup>4</sup> .....	78,933	44,502	14,007	11,000	5,353	578	2,593
Power equipment, total horsepower.....	1,178,530	701,791	194,330	163,357	69,829	20,280	28,943
Principal expenses, total <sup>5</sup> .....	\$242,695,304	\$145,163,728	\$41,287,337	\$30,593,469	\$15,724,187	\$2,427,091	\$7,499,442
Salaries <sup>6</sup> .....	17,138,284	10,186,354	2,546,150	2,507,204	1,131,247	259,841	607,428
Wages.....	126,343,793	78,199,785	22,917,435	16,274,339	8,665,508	970,010	4,326,719
Contract work <sup>7</sup> .....	4,944,297	2,594,908	1,032,085	621,478	556,148	1,708	137,970
Supplies.....	63,862,568	43,095,395	10,377,787	7,965,835	4,112,489	590,173	1,820,829
Fuel.....	11,305,357	9,210,052	680,700	865,305	436,181	1,421	121,608
Purchased electric energy.....	14,051,015	6,027,234	3,733,230	2,309,198	832,617	603,938	484,798
Expenditures for development (included above in "Principal expenses").....	36,040,000	22,151,000	5,668,000	2,506,000	3,739,000	76,000	1,902,000
Value of products <sup>8</sup> .....	425,831,355	283,517,373	67,501,778	44,866,026	17,650,174	3,770,241	8,457,203

<sup>1</sup> See GENERAL EXPLANATIONS—The Enterprise.

<sup>2</sup> Includes 30 enterprises operating as custom mills, or on dumps and old tailings.

<sup>3</sup> See GENERAL EXPLANATIONS—Persons Engaged.

<sup>4</sup> Not including data for salaried officers and employees of "Central Administrative" offices. (See Table 17.)

<sup>5</sup> See GENERAL EXPLANATIONS—Expenses.

<sup>6</sup> See GENERAL EXPLANATIONS—Value of Products.

Nonproducing mines (Table 2).—Nonproducing mines (development only) operated as separate enterprises represented a small part of the metal-mining industries. The statistics relate to metal mines considered as a group since no classification of enterprises by industries was possible because no products were reported. The number of wage earners employed was less than 7 per cent of the number employed in

producing enterprises, while the expenditures for development work by these enterprises was 31.9 per cent of the corresponding expenditures of producing enterprises and 4.7 per cent of the aggregate of "Principal expenses" reported for producing enterprises. The statistics for nonproducing enterprises are not included in any of the other tables in this report.

TABLE 2.—SUMMARY FOR NONPRODUCING ENTERPRISES, FOR THE UNITED STATES: 1929

[No data for nonproducing metal-mining enterprises are included in any other table in this report]

Number of enterprises.....	733	Expenditures for development (included above in "Principal expenses").....	\$11,503,564
Number of mines.....	826	Machinery and other equipment purchased during the year, total cost.....	\$1,802,116
Persons engaged, total.....	5,389	Prime movers and electric motors driven by purchased energy, total horsepower.....	62,602
Salaried officers and employees.....	637	Prime movers.....	33,386
Wage earners (average for the year).....	5,252	Electric motors driven by purchased energy.....	29,216
Principal expenses, total.....	\$13,127,768		
Salaries.....	\$1,253,376		
Wages.....	\$7,204,967		
Contract work.....	\$303,437		
Supplies, fuel, and purchased electric energy.....	\$3,866,978		

DETAIL OF PRODUCTS

Mine value of products of metal mines, by industries: 1929.—Table 3 gives statistics showing the total value of products for each of the metal-mining industries apportioned among the metals contained in the products on the basis of the contribution of each.

(See "Classification of enterprises and determination of net mine values," page 1.) For example, for copper enterprises as a whole, the value of copper represented 93.5 per cent of the mine value of principal metals produced; silver, 2.7 per cent; etc.

TABLE 3.—MINE VALUE OF PRODUCTS OF METAL MINES, BY INDUSTRIES: 1929

PRODUCT	METAL-MINING INDUSTRIES, TOTAL		COPPER INDUSTRY		LEAD INDUSTRY		ZINC INDUSTRY		GOLD (LOBE) INDUSTRY		GOLD (PLACER) INDUSTRY		SILVER INDUSTRY	
	Amount	Per cent of total	Amount	Per cent of total	Amount	Per cent of total	Amount	Per cent of total	Amount	Per cent of total	Amount	Per cent of total	Amount	Per cent of total
Total value of products.....	\$425,831,855		\$283,517,373		\$67,561,778		\$44,866,026		\$17,650,174		\$3,779,241		\$8,457,263	
Mine value of principal metals recoverable from ore, concentrates, precipitates, or bullion produced, total.....	420,443,363	100.0	282,068,143	100.0	65,531,210	100.0	43,849,754	100.0	16,894,898	100.0	3,771,765	100.0	8,337,593	100.0
Copper.....	265,884,902	63.2	263,766,958	93.5	1,336,122	2.0	436,892	1.0	127,511	0.8			217,419	2.6
Lead.....	58,390,160	13.9	1,367,095	0.5	48,513,905	74.0	7,037,831	17.4	68,793	0.4			812,536	9.7
Zinc.....	45,677,207	10.8	2,491,519	0.9	7,560,963	11.5	34,848,815	79.5	902	( <sup>1</sup> )			680,008	8.2
Gold.....	29,254,745	7.0	6,837,863	2.4	1,171,155	1.8	260,068	0.6	16,175,283	95.7	3,770,317	100.0	1,039,459	12.5
Silver.....	21,336,349	5.1	7,604,798	2.7	6,949,065	10.6	670,548	1.5	522,400	3.1	1,448	( <sup>1</sup> )	5,538,171	67.0
Mine value of manganese, pyrites, cadmium, and platinum.....	891,616		874,053								7,376		10,187	
Custom milling.....	2,374,749				1,188,965		349,800		736,691				99,293	
Other products and miscellaneous service.....	2,122,127		585,177		841,603		666,472		18,585		100		10,190	

<sup>1</sup> Less than one-tenth of 1 per cent.

Mine value of principal products of metal mines, by States: 1929.—Table 4 gives statistics, by States, showing the total mine values of gold, silver, copper, lead, and zinc derived from metal-mining enterprises as classified by the census. (See "Classification of enterprises and determination of net mine values," page 1.) As no similar compilation of data for these industries, as given in this and the preceding table, has ever been made by the Census Bureau or other Federal agency, no comparisons can be made with earlier years. However, any material shifting in the relative prices of the metals would naturally affect the classification of many enterprises as well as the relative significance of the several products for most of them, and therefore the results as a whole. These tables indicate the degree of inter-relationship which exists among the producing activities of enterprises engaged in the production of gold, silver, copper, lead, and zinc, and presents in

quantitative terms the joint-product nature of the metal-mining industries.

In addition to the values given as compiled from census reports, the quantities of recoverable metals mined as reported by the United States Bureau of Mines for the several States and the United States are also shown. The two sets of figures (value and quantity) permit the calculation of average mine values per unit of measure, which are also shown. The variations in average values from State to State accord with variations in the nature of ores, treatment costs, transportation costs, and other factors which affect the net mine or realization value of the mined product.

In a few cases, figures can not be shown for certain industries in a State, or for a State as a whole, as to do so would result in disclosure of data for individual enterprises. These data are included under the caption "Other States" unless otherwise indicated.



## MINES AND QUARRIES

TABLE 4.—MINE VALUE OF PRINCIPAL PRODUCTS OF METAL-MINING INDUSTRIES, BY STATES: 1929

[In some industries, in order to avoid disclosing data for individual enterprises, the figures for certain States have been combined. In such cases an (x) is placed in the column from which the figures have been omitted, and the figures have been combined with those for "Other States." The totals for States, however, are correct as given.]

	UNITED STATES		Arizona	California	Colorado	Idaho	Kansas	Michigan	Missouri
	Amount	Per cent of total							
Total.....	\$420,443,363	-----	\$114,636,213	\$12,417,860	\$8,864,438	\$10,809,083	\$11,033,861	\$29,683,859	\$23,434,640
Mine value of COPPER produced.....	<sup>2</sup> 265,884,902	100.0	107,650,937	4,332,366	925,569	532,607	-----	29,683,859	-----
By copper-mining enterprises.....	263,766,958	99.2	107,517,030	4,329,700	709,263	460,805	-----	29,683,859	-----
By lead-mining enterprises.....	1,336,122	0.5	97,615	164	136,497	(x)	-----	-----	-----
By zinc-mining enterprises.....	436,892	0.2	1,022	-----	5,637	-----	-----	-----	-----
By gold-mining (lode) enterprises.....	127,511	( <sup>1</sup> )	11,965	1,211	71,802	-----	-----	-----	-----
By silver-mining enterprises.....	217,419	0.1	22,405	1,301	2,370	(x)	-----	-----	-----
Quantity produced <sup>1</sup> ..... pounds.....	<sup>2</sup> 1,951,143,988	-----	830,628,411	33,218,994	8,905,074	5,131,438	-----	186,402,218	-----
Average value at mine..... per pound.....	\$0.136	-----	\$0.130	\$0.130	\$0.104	\$0.104	-----	\$0.158	-----
Mine value of LEAD produced.....	<sup>6</sup> 58,390,160	100.0	550,331	35,211	1,710,360	12,739,150	2,854,587	-----	22,503,136
By copper-mining enterprises.....	1,357,005	2.3	119,127	-----	205,391	-----	-----	-----	-----
By lead-mining enterprises.....	48,513,905	83.1	410,596	34,681	1,112,756	12,211,564	670,890	-----	22,406,230
By zinc-mining enterprises.....	7,637,831	13.1	721	-----	104,544	416,568	2,183,607	-----	6,906
By gold-mining (lode) enterprises.....	68,793	0.1	4,034	530	48,564	-----	-----	-----	-----
By silver-mining enterprises.....	812,530	1.4	15,903	-----	59,105	111,018	-----	-----	-----
Quantity produced <sup>1</sup> ..... pounds.....	<sup>6</sup> 1,261,880,000	-----	16,054,000	1,430,000	48,890,000	267,300,000	53,192,000	-----	366,938,000
Average value at mine..... per pound.....	\$0.045	-----	\$0.034	\$0.025	\$0.035	\$0.043	\$0.054	-----	\$0.057
Mine value of ZINC produced.....	<sup>10</sup> 45,577,207	100.0	98,016	-----	1,434,922	2,955,848	8,179,274	-----	901,062
By copper-mining enterprises.....	2,491,519	5.5	-----	-----	35,789	-----	-----	-----	-----
By lead-mining enterprises.....	7,590,963	16.6	(x)	-----	773,176	2,210,230	451,010	-----	( <sup>8</sup> )
By zinc-mining enterprises.....	34,843,815	76.5	(x)	-----	618,800	739,618	7,728,264	-----	<sup>9</sup> 901,062
By gold-mining (lode) enterprises.....	902	( <sup>1</sup> )	-----	-----	902	-----	-----	-----	-----
By silver-mining enterprises.....	680,008	1.5	-----	-----	8,275	-----	-----	-----	-----
Quantity produced <sup>1</sup> ..... pounds.....	<sup>10</sup> 1,448,876,000	-----	2,458,000	-----	58,862,000	91,850,000	219,700,000	-----	22,034,000
Average value at mine..... per pound.....	\$0.031	-----	\$0.040	-----	\$0.024	\$0.032	\$0.037	-----	\$0.041
Mine value of GOLD produced.....	<sup>15</sup> 29,254,745	100.0	3,368,450	7,687,902	3,344,450	524,350	-----	-----	-----
By copper-mining enterprises.....	6,837,863	23.4	3,057,479	288,557	62,645	(x)	-----	-----	-----
By lead-mining enterprises.....	1,171,155	4.0	52,221	71	177,463	174,867	-----	-----	-----
By zinc-mining enterprises.....	260,698	0.9	722	-----	9,893	9	-----	-----	-----
By gold-mining (lode) enterprises.....	16,175,233	55.3	235,331	3,926,706	3,050,119	(x)	-----	-----	-----
By gold-mining (placer) enterprises.....	3,770,317	12.9	2,428	3,461,648	38,496	45,789	-----	-----	-----
By silver-mining enterprises.....	1,039,459	3.5	20,269	30,920	5,834	-----	-----	-----	-----
Quantity produced <sup>1</sup> ..... fine ounces.....	<sup>15</sup> 1,682,536.81	-----	292,318.14	412,479.25	213,689.69	20,247.11	-----	-----	-----
Average value at mine..... per ounce.....	\$17.39	-----	\$16.65	\$18.64	\$15.65	( <sup>17</sup> )	-----	-----	-----
Mine value of SILVER produced.....	<sup>18</sup> 21,336,340	100.0	2,969,320	362,390	1,449,137	3,057,119	-----	-----	30,448
By copper-mining enterprises.....	7,604,708	35.6	2,673,200	150,168	593,983	(x)	-----	-----	-----
By lead-mining enterprises.....	6,949,095	32.6	(x)	16,446	404,101	2,186,088	-----	-----	30,448
By zinc-mining enterprises.....	670,548	3.1	722	-----	71,159	68,001	-----	-----	-----
By gold-mining (lode) enterprises.....	522,409	2.4	13,825	12,478	152,778	(x)	-----	-----	-----
By gold-mining (placer) enterprises.....	1,448	( <sup>1</sup> )	101	835	232	280	-----	-----	-----
By silver-mining enterprises.....	5,588,171	26.2	(x)	182,463	226,884	(x)	-----	-----	-----
Quantity produced <sup>1</sup> ..... fine ounces.....	<sup>18</sup> 60,335,405	-----	7,543,293	1,176,895	4,897,377	9,414,403	-----	-----	181,038
Average value at mine..... per ounce.....	\$0.354	-----	\$0.394	\$0.308	\$0.330	\$0.325	-----	-----	\$0.168

See footnotes at end of table.

TABLE 4.—MINE VALUE OF PRINCIPAL PRODUCTS OF METAL-MINING INDUSTRIES, BY STATES: 1929—Contd.

[See note at head of this table]

	Montana	Nevada	New Mexico	Oklahoma	South Dakota	Utah	Wisconsin	Other States <sup>1</sup>
Total.....	\$55,369,733	\$24,494,588	\$17,136,849	\$17,915,377	\$6,591,144	\$66,211,777	\$1,330,312	\$11,513,614
Mine value of COPPER produced.....	43,076,022	18,619,520	13,247,280	-----	-----	44,922,410	-----	<sup>2</sup> 2,895,223
By copper-mining enterprises.....	42,847,868	18,604,665	12,918,915	-----	-----	43,800,632	-----	2,889,321
By lead-mining enterprises.....	49,637	4,900	7,502	-----	-----	1,001,628	-----	<sup>3</sup> 38,129
By zinc-mining enterprises.....	109,715	4,870	310,460	-----	-----	436	-----	-----
By gold-mining (lode) enterprises.....	19,287	3,507	-----	-----	-----	19,739	-----	-----
By silver-mining enterprises.....	50,012	6,709	2,072	-----	-----	93,975	-----	<sup>4</sup> 139,575
Quantity produced <sup>5</sup> .....pounds.....	297,725,973	140,138,809	97,717,262	-----	-----	318,282,523	-----	<sup>6</sup> 32,993,286
Average value at mine.....per pound.....	\$0.145	\$0.133	\$0.136	-----	-----	\$0.141	-----	-----
Mine value of LEAD produced.....	1,754,003	619,481	660,252	4,477,101	-----	9,549,662	164,195	<sup>7</sup> 772,641
By copper-mining enterprises.....	560,648	145,122	2,064	-----	-----	234,743	-----	-----
By lead-mining enterprises.....	788,645	260,996	82,712	919,798	-----	8,883,810	( <sup>8</sup> )	687,077
By zinc-mining enterprises.....	334,695	177,821	575,476	3,557,303	-----	2,055	<sup>9</sup> 164,195	28,000
By gold-mining (lode) enterprises.....	4,182	1,014	-----	-----	-----	10,469	-----	-----
By silver-mining enterprises.....	65,833	34,528	-----	-----	-----	468,585	-----	57,564
Quantity produced <sup>5</sup> .....pounds.....	39,214,000	19,692,000	22,260,000	93,026,000	-----	298,754,000	3,072,000	<sup>7</sup> 1,908,000
Average value at mine.....per pound.....	\$0.045	\$0.031	\$0.030	\$0.048	-----	\$0.032	\$0.053	-----
Mine value of ZINC produced.....	4,865,599	537,043	2,432,595	13,438,276	-----	2,627,194	1,106,117	<sup>11</sup> 6,040,661
By copper-mining enterprises.....	2,416,160	-----	( <sup>8</sup> )	-----	-----	(x)	-----	<sup>12</sup> 37,711
By lead-mining enterprises.....	<sup>12</sup> 476,330	( <sup>13</sup> )	82,712	588,326	-----	2,059,021	-----	<sup>13</sup> 713,133
By zinc-mining enterprises.....	<sup>12</sup> 2,368,488	( <sup>13</sup> )	<sup>14</sup> 2,432,595	12,849,950	-----	(x)	1,166,117	<sup>14</sup> 6,334,537
By gold-mining (lode) enterprises.....	-----	-----	-----	-----	-----	-----	-----	-----
By silver-mining enterprises.....	152,264	-----	-----	-----	-----	521,469	-----	-----
Quantity produced <sup>5</sup> .....pounds.....	136,362,000	16,920,000	68,910,000	384,084,000	-----	103,020,000	33,072,000	<sup>11</sup> 311,214,000
Average value at mine.....per pound.....	\$0.036	\$0.032	\$0.035	\$0.035	-----	\$0.025	\$0.034	-----
Mine value of GOLD produced.....	904,323	2,848,207	516,611	-----	6,546,124	3,139,330	-----	<sup>16</sup> 375,989
By copper-mining enterprises.....	409,020	1,024,712	204,422	-----	-----	1,076,140	-----	<sup>17</sup> 44,888
By lead-mining enterprises.....	28,995	20,963	1,407	-----	-----	715,603	-----	-----
By zinc-mining enterprises.....	35,059	11,108	203,763	-----	-----	124	-----	-----
By gold-mining (lode) enterprises.....	391,808	1,388,705	-----	-----	6,546,124	(x)	-----	<sup>18</sup> 636,490
By gold-mining (placer) enterprises.....	39,441	402,710	2,500	-----	-----	(x)	-----	<sup>19</sup> 219,456
By silver-mining enterprises.....	-----	-----	13,469	-----	-----	-----	-----	<sup>20</sup> 526,807
Quantity produced <sup>5</sup> .....fine ounces.....	54,758.03	163,711.22	35,176.46	-----	316,836.85	240,410.63	-----	<sup>16</sup> 22,900.43
Average value at mine.....per ounce.....	\$16.52	\$17.40	\$14.66	-----	\$20.66	\$13.06	-----	-----
Mine value of SILVER produced.....	4,769,786	1,869,737	281,102	-----	45,020	5,973,181	-----	<sup>19</sup> 529,100
By copper-mining enterprises.....	3,861,810	210,411	76,740	-----	-----	471,961	-----	<sup>1</sup> 66,369
By lead-mining enterprises.....	346,730	138,108	(x)	-----	-----	3,707,048	-----	<sup>2</sup> 120,096
By zinc-mining enterprises.....	324,088	24,049	180,727	-----	-----	1,202	-----	-----
By gold-mining (lode) enterprises.....	28,529	175,472	-----	-----	45,020	77,541	-----	<sup>3</sup> 16,766
By gold-mining (placer) enterprises.....	-----	-----	-----	-----	-----	-----	-----	-----
By silver-mining enterprises.....	768,629	1,321,097	(x)	-----	-----	1,715,429	-----	<sup>4</sup> 1,433,660
Quantity produced <sup>5</sup> .....fine ounces.....	12,716,977	4,923,526	1,121,546	-----	85,182	17,592,396	-----	<sup>19</sup> 1,182,272
Average value at mine.....per ounce.....	\$0.375	\$0.380	\$0.251	-----	\$0.529	\$0.340	-----	-----

<sup>1</sup> See headnote.  
<sup>2</sup> Not including data for Alaska, Missouri, and Pennsylvania.  
<sup>3</sup> Comprises data for North Carolina, Oregon, Tennessee, Texas, Vermont, Washington, and Wyoming.  
<sup>4</sup> Less than one-tenth of 1 per cent.  
<sup>5</sup> As reported by U. S. Bureau of Mines for continental United States.  
<sup>6</sup> Not including data for Alaska, Illinois, Kentucky, and Oregon. However, data for Virginia is included in value but not in quantity figures; this exclusion is not sufficient to alter results for average value as shown.  
<sup>7</sup> Comprises data for Arkansas, Texas, and Washington. In addition, data for Virginia is included in value.  
<sup>8</sup> Included with data for zinc-mining enterprises.  
<sup>9</sup> Includes data for lead-mining enterprises.  
<sup>10</sup> Not including data for Arkansas and Illinois.  
<sup>11</sup> Comprises data for New Jersey, New York, Tennessee, Virginia, and Washington.  
<sup>12</sup> Includes data for Nevada.  
<sup>13</sup> Includes data for Montana.  
<sup>14</sup> Includes data for copper-mining enterprises.  
<sup>15</sup> Not including data for Alabama, Alaska, Georgia, Pennsylvania, Wyoming, and the Philippine Islands.  
<sup>16</sup> Comprises data for North Carolina, Oregon, Tennessee, Texas, and Washington.  
<sup>17</sup> Computed average for Idaho above established value for gold, due to differences in reports received by the Census Bureau and the Bureau of Mines.  
<sup>18</sup> Not including data for Alaska, Illinois, Michigan, North Carolina, Pennsylvania, and the Philippine Islands.  
<sup>19</sup> Comprises data for Oregon, Tennessee, Texas, Vermont, and Washington.

PROGRESS OF THE INDUSTRIES

Summary for the United States: 1909-1929 (Table 5).—This table presents, for metal-mining industries as a whole, and separately for the copper, lead and zinc, gold and silver, and placer-gold mining industries, the principal statistics as reported at the last three censuses of mines and quarries. It shows a pronounced increase in the value of production for the industries

as a whole, while the number of enterprises and mines has decreased very materially.

In those instances in 1909 in which an enterprise conducted at the same time mining and smelting (and refining) operations, data for both were included in the mining statistics. The extent of the inclusion of smelting (and refining) data is not now ascertainable. Accordingly, the figures for 1909 are not strictly comparable with those for 1919 and 1929.

MINES AND QUARRIES

TABLE 5.—SUMMARY FOR THE METAL-MINING INDUSTRIES, FOR THE UNITED STATES: 1909-1929

[This and all other tables except Table 2 cover producing enterprises only]

	1929	1919	1909 <sup>1</sup>	PER CENT OF INCREASE OR DECREASE (-)	
				1919-1929	1909-1919
<b>METAL-MINING INDUSTRIES</b>					
Number of enterprises <sup>2</sup> .....	3 710	1, 479	3, 460	-51. 4	-57. 2
Number of mines.....	850	1, 030	5, 235	-47. 9	-68. 9
Persons engaged, total.....	85, 255	90, 211	111, 247	-5. 5	-18. 9
Proprietors and firm members.....	286	1, 340	4, 988	-78. 8	-78. 0
Salaried officers and employees <sup>4</sup> .....	5, 036	6, 445	5, 297	-0. 3	21. 7
Wage earners (average for the year) <sup>5</sup> .....	78, 933	82, 417	100, 962	-4. 2	-18. 4
Power equipment, total horsepower.....	1, 178, 580	936, 559	715, 267	25. 8	30. 0
Principal expenses, total <sup>6</sup> .....	\$242, 695, 804	\$231, 019, 856	\$173, 333, 908	5. 1	33. 3
Salaries <sup>4</sup> .....	17, 188, 284	15, 317, 235	9, 034, 747	12. 2	69. 5
Wages.....	126, 343, 793	122, 330, 242	93, 398, 581	2. 9	31. 5
Contract work.....	4, 044, 297	2, 655, 074	4, 545, 387	80. 2	-41. 6
Supplies.....	68, 862, 558	64, 872, 542	44, 849, 457	6. 2	44. 6
Fuel.....	11, 305, 357	15, 737, 317	21, 505, 736	-28. 2	17. 9
Purchased electric energy.....	14, 051, 015	9, 607, 446	241, 107, 623	46. 3	32. 1
Value of products <sup>7</sup> .....	425, 831, 855	\$318, 435, 927		33. 7	
<b>COPPER</b>					
Number of enterprises <sup>2</sup> .....	143	195	188	-26. 7	3. 7
Number of mines.....	180	226	368	-20. 4	-38. 0
Persons engaged, total.....	48, 043	46, 999	53, 758	2. 2	-12. 6
Proprietors and firm members.....	79	103	79	-26. 2	( <sup>9</sup> )
Salaried officers and employees <sup>4</sup> .....	8, 495	3, 179	2, 036	9. 0	56. 1
Wage earners (average for the year) <sup>5</sup> .....	44, 502	43, 717	51, 643	1. 5	-15. 3
Power equipment, total horsepower.....	701, 791	522, 426	376, 464	34. 3	38. 8
Principal expenses, total <sup>6</sup> .....	\$145, 163, 723	\$123, 993, 072	\$90, 784, 099	17. 1	36. 6
Salaries <sup>4</sup> .....	10, 136, 354	8, 039, 741	3, 714, 028	26. 1	116. 5
Wages.....	78, 199, 735	66, 390, 194	49, 382, 979	10. 3	34. 4
Contract work.....	2, 594, 908	421, 753	644, 562	518. 3	-84. 6
Supplies.....	43, 995, 395	34, 275, 369	23, 718, 373	28. 4	44. 5
Fuel.....	9, 210, 052	11, 310, 485	13, 324, 157	-18. 6	11. 9
Purchased electric energy.....	6, 027, 234	3, 555, 530	124, 020, 023	69. 5	44. 9
Value of products <sup>7</sup> .....	283, 517, 373	\$179, 730, 031		57. 7	
<b>LEAD AND ZINC</b>					
Number of enterprises <sup>2</sup> .....	303	432	977	-29. 9	-55. 3
Number of mines.....	375	473	1, 142	-20. 7	-58. 9
Persons engaged, total.....	27, 803	24, 030	10, 601	15. 7	22. 6
Proprietors and firm members.....	78	412	1, 947	-81. 1	-78. 8
Salaried officers and employees <sup>4</sup> .....	1, 818	1, 734	847	4. 8	104. 7
Wage earners (average for the year) <sup>5</sup> .....	25, 907	21, 884	16, 807	18. 4	30. 2
Power equipment, total horsepower.....	357, 737	229, 401	110, 559	55. 9	107. 5
Principal expenses, total <sup>6</sup> .....	\$71, 880, 856	\$56, 093, 433	\$19, 004, 229	28. 1	195. 2
Salaries <sup>4</sup> .....	5, 053, 414	3, 834, 940	1, 092, 500	31. 8	251. 0
Wages.....	39, 191, 774	30, 708, 319	10, 477, 657	27. 6	103. 1
Contract work.....	1, 653, 663	863, 471	197, 259	91. 5	337. 7
Supplies.....	18, 843, 672	15, 311, 548	4, 836, 023	19. 8	216. 6
Fuel.....	1, 536, 005	2, 783, 249	2, 400, 724	-44. 8	123. 0
Purchased electric energy.....	6, 102, 428	2, 591, 906	29, 416, 047	135. 4	135. 4
Value of products <sup>7</sup> .....	112, 427, 804	\$75, 173, 293		49. 6	155. 6
<b>GOLD AND SILVER, LODE</b>					
Number of enterprises <sup>2</sup> .....	241	740	1, 010	-67. 4	-54. 2
Number of mines.....	258	799	2, 845	-67. 7	-71. 9
Persons engaged, total.....	8, 723	17, 531	33, 567	-50. 2	-47. 8
Proprietors and firm members.....	114	712	2, 011	-84. 0	-64. 6
Salaried officers and employees <sup>4</sup> .....	663	1, 333	2, 128	-52. 1	-35. 0
Wage earners (average for the year) <sup>5</sup> .....	7, 946	15, 436	29, 428	-48. 5	-47. 5
Power equipment, total horsepower.....	95, 772	149, 100	200, 966	-33. 8	-25. 8
Principal expenses, total <sup>6</sup> .....	\$23, 223, 629	\$45, 090, 613	\$57, 475, 605	-48. 5	-21. 6
Salaries <sup>4</sup> .....	1, 736, 675	3, 005, 761	3, 797, 380	-42. 2	-20. 8
Wages.....	12, 982, 224	23, 817, 657	30, 869, 371	-45. 5	-22. 8
Contract work.....	694, 118	1, 237, 043	3, 003, 984	-43. 9	-65. 7
Supplies.....	5, 933, 318	13, 040, 807	14, 100, 617	-54. 5	-7. 5
Fuel.....	557, 879	1, 623, 124	5, 105, 253	-65. 6	-22. 4
Purchased electric energy.....	1, 317, 415	2, 336, 136	77, 434, 301	-43. 6	-30. 1
Value of products <sup>7</sup> .....	26, 107, 437	\$54, 164, 039		-51. 8	
<b>GOLD, PLACER</b>					
Number of enterprises <sup>2</sup> .....	32	112	678	-71. 4	-83. 5
Number of mines.....	37	132	880	-72. 0	-85. 0
Persons engaged, total.....	686	1, 051	4, 321	-58. 4	-61. 8
Proprietors and firm members.....	18	122	951	-85. 2	-87. 2
Salaried officers and employees <sup>4</sup> .....	30	149	286	-39. 6	-47. 9
Wage earners (average for the year) <sup>5</sup> .....	578	1, 380	3, 084	-58. 1	-55. 3
Power equipment, total horsepower.....	20, 280	35, 632	27, 278	-43. 1	30. 6
Principal expenses, total <sup>6</sup> .....	\$2, 427, 091	\$5, 372, 733	\$6, 069, 975	-58. 7	-3. 2
Salaries <sup>4</sup> .....	259, 841	436, 793	430, 773	-40. 5	1. 4
Wages.....	970, 010	1, 914, 072	2, 669, 574	-49. 3	-23. 3
Contract work.....	1, 708	132, 307	96, 582	-98. 7	83. 4
Supplies.....	590, 173	2, 244, 728	2, 194, 444	-73. 7	2. 3
Fuel.....	1, 421	20, 459	675, 602	-93. 1	69. 4
Purchased electric energy.....	635, 933	1, 123, 374	10, 237, 252	-46. 3	-8. 5
Value of products <sup>7</sup> .....	3, 779, 241	9, 368, 561		-59. 7	

<sup>1</sup> Figures for 1909 are only roughly comparable with those for 1919 and 1929. See explanation preceding table, p. 293.  
<sup>2</sup> See GENERAL EXPLANATIONS—The Enterprise.  
<sup>3</sup> Includes 30 enterprises operating as custom mills, or on dumps and old tailings.  
<sup>4</sup> Not including data for salaried officers and employees of "Central Administrative" offices for 1929. (See Table 17.) However, these data are included in the figures for 1919 and 1909.  
<sup>5</sup> See GENERAL EXPLANATIONS—Persons Engaged.  
<sup>6</sup> See GENERAL EXPLANATIONS—Expenses.  
<sup>7</sup> See GENERAL EXPLANATIONS—Value of Products.  
<sup>8</sup> Figures for 1919 have been revised to make them comparable with 1929 by exclusion of cost of ore purchased as material.  
<sup>9</sup> Per cent not computed where base is less than 100.

Principal statistics, by States (Table 6).—Although statistics may be given separately for most States for 1929 because of permission given by operators in those cases where the question of disclosure of data for individual enterprises arose, similar statistics are not available for a number of important producing States for 1919. Therefore, it is necessary to show comparative figures, by States, on the basis of the presentation for 1919. The total value of products of the metal-mining industries was 33.7 per cent greater in 1929 than in 1919. In this connection, attention is called to the comparative average New York values of refined metals, as published by the United States Bureau of Mines, as follows: For 1919—silver \$1.12 per ounce; copper 18.6

cents, lead 5.3 cents, and zinc 7.3 cents, per pound; for 1929—silver 53.3 cents, copper 17.6 cents, lead 6.3 cents, and zinc 6.6 cents. It is significant that the increased activity of the metal-mining industries as reported for 1929 was coincident with a decrease of 47.9 per cent in the number of mines large enough to come within the scope of the census. Most of this decrease occurred in the gold and silver mining industries, which also show a marked decline in the total value of products, due in large measure to the fall in the price of silver during the decade, which fact also changed the classification of a number of enterprises included in the silver industry for 1919 to other industry classifications for 1929.

TABLE 6.—SUMMARY, BY INDUSTRIES AND STATES: 1929 AND 1919

INDUSTRY AND STATE	Census year	Number of enterprises <sup>1</sup>	Number of mines	Wage earners (average for the year) <sup>2</sup>	Wages	Cost of supplies	Cost of fuel	Cost of purchased electric energy	Contract work	Value of products <sup>3</sup>	Horse-power rating of power equipment
United States.....	1929	719	850	78,933	\$126,343,793	\$68,862,568	\$11,305,357	\$14,051,015	\$4,944,297	\$425,831,855	1,178,680
Per cent of increase or decrease (—)	1919	1,479	1,630	82,417	\$122,830,242	\$64,872,542	\$15,737,317	\$9,607,446	\$2,656,074	\$318,435,927	936,559
		-51.4	-47.9	-4.2	2.9	6.2	-28.2	46.3	80.2	33.7	25.8
COPPER.....	1929	143	180	44,502	\$73,199,785	\$43,905,395	\$0,210,052	\$0,027,234	\$2,594,908	\$283,517,373	701,791
Per cent of increase or decrease (—)	1919	195	226	43,717	\$69,390,194	\$34,275,369	\$11,310,485	\$3,555,530	\$421,753	\$179,730,031	522,426
		-26.7	-20.4	1.8	10.3	28.4	-18.6	99.5	515.3	57.7	34.3
Arizona.....	1929	63	68	15,564	\$26,947,217	\$16,919,123	\$4,055,402	\$1,488,400	\$1,129,548	\$113,980,541	192,753
Per cent of increase.....	1919	75	89	14,237	\$24,856,574	\$13,454,473	\$4,034,605	\$1,161,670	\$292,123	\$82,689,085	157,599
		( <sup>4</sup> )	( <sup>4</sup> )	9.3	8.4	25.8	0.5	28.1	286.7	37.8	22.3
California.....	1929	10	11	994	\$1,756,846	\$1,106,824	\$26,310	\$237,032	—	\$4,748,996	14,293
Per cent of increase or decrease (—)	1919	15	16	1,055	\$1,550,430	\$1,078,351	\$119,256	\$271,298	\$38,320	\$2,397,610	12,648
		( <sup>4</sup> )	( <sup>4</sup> )	-5.8	13.3	2.6	-77.9	-12.6	—	98.1	13.0
Colorado.....	1929	3	4	513	\$774,844	\$314,080	\$37,112	\$131,692	\$97,274	\$1,697,051	6,491
Per cent of increase.....	1919	5	5	35	\$43,032	\$17,448	\$85	\$490	—	\$26,723	25
		( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	1,700.6	1,700.1	( <sup>4</sup> )	20,775.9	—	0,250.5	( <sup>4</sup> )
Idaho.....	1929	4	4	163	\$279,307	\$126,400	\$30,782	\$6,991	\$48,518	\$523,014	1,971
Per cent of increase or decrease (—)	1919	8	8	87	\$159,033	\$72,515	\$7,603	\$11,205	\$3,514	\$340,309	985
		( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	75.6	74.3	419.1	-88.6	1,280.7	53.7	100.1
Michigan.....	1929	9	18	7,834	\$0,838,442	\$4,692,483	\$2,397,922	\$168,474	\$32,902	\$29,633,859	131,593
Per cent of increase or decrease (—)	1919	22	28	12,235	\$14,608,804	\$5,612,075	\$4,146,775	\$114,048	\$34,476,336	\$94,079,589	109,589
		( <sup>4</sup> )	( <sup>4</sup> )	-36.0	-32.7	-16.4	-42.2	47.7	—	-13.9	-22.4
Montana, Oregon, and Washington.....	1929	10	20	10,574	\$18,843,248	\$5,987,482	\$348,427	\$1,415,315	\$19,248	\$50,364,318	145,690
Per cent of increase or decrease (—)	1919	30	32	8,509	\$13,486,350	\$5,036,185	\$755,257	\$1,127,257	\$7,725	\$28,365,290	84,765
		( <sup>4</sup> )	( <sup>4</sup> )	23.0	39.7	18.9	-53.9	25.6	149.2	77.0	71.9
Nevada, New Mexico, and Utah.....	1929	36	37	8,116	\$13,750,204	\$4,224,432	\$2,261,110	\$2,449,597	\$1,267,358	\$79,506,317	202,345
Per cent of increase.....	1919	35	40	6,924	\$10,989,094	\$8,720,510	\$2,199,533	\$806,203	\$80,071	\$30,269,748	90,045
		( <sup>4</sup> )	( <sup>4</sup> )	17.2	25.1	63.1	2.8	203.8	1,482.8	162.7	124.7
Other States <sup>4</sup> .....	1929	8	9	744	\$1,009,687	\$624,566	\$43,987	\$129,793	—	\$3,013,277	6,655
	1919	5	8	545	\$697,277	\$283,310	\$47,312	\$63,269	—	\$1,164,930	6,770
LEAD AND ZINC.....	1929	303	375	25,907	\$39,191,774	\$18,343,672	\$1,536,005	\$6,102,423	\$1,653,563	\$112,427,804	357,737
Per cent of increase or decrease (—)	1919	432	473	21,384	\$30,708,319	\$15,311,548	\$2,783,249	\$2,591,006	\$863,471	\$75,173,206	229,401
		-29.9	-20.7	18.4	27.6	19.8	-44.8	135.4	91.5	49.6	55.9
Arizona.....	1929	13	13	309	\$398,348	\$219,764	\$23,636	—	\$22,143	\$770,543	1,917
Per cent of increase.....	1919	15	16	101	\$114,651	\$89,344	\$10,896	—	\$17,400	\$127,843	634
		( <sup>4</sup> )	( <sup>4</sup> )	205.9	247.4	146.0	116.9	—	26.6	502.7	202.4
Colorado.....	1929	27	30	971	\$1,814,745	\$708,943	\$30,341	\$267,324	\$4,827	\$3,852,674	10,920
Per cent of increase or decrease (—)	1919	27	37	936	\$1,435,521	\$523,492	\$34,798	\$191,572	\$31,838	\$2,311,108	12,384
		( <sup>4</sup> )	( <sup>4</sup> )	3.7	26.4	35.4	-12.8	39.5	-84.8	66.7	-11.8
Idaho.....	1929	34	39	3,648	\$6,480,491	\$2,052,036	\$103,723	\$768,690	\$69,650	\$18,641,423	59,579
Per cent of increase or decrease (—)	1919	20	21	1,820	\$3,251,942	\$1,558,866	\$118,176	\$280,312	\$156,759	\$9,529,723	25,429
		( <sup>4</sup> )	( <sup>4</sup> )	100.4	99.3	89.4	-8.0	174.2	-55.6	95.6	134.3
Kansas.....	1929	37	52	2,710	\$3,490,048	\$1,945,095	\$135,323	\$707,910	\$138,232	\$11,035,153	37,399
Per cent of increase or decrease (—)	1919	30	30	1,141	\$1,760,200	\$977,212	\$201,020	\$107,797	\$68,092	\$4,862,340	11,496
		( <sup>4</sup> )	( <sup>4</sup> )	137.5	98.3	99.1	-48.2	556.7	103.1	127.0	225.3

See footnotes at end of table.

## MINES AND QUARRIES

TABLE 6.—SUMMARY, BY INDUSTRIES AND STATES: 1929 AND 1919—Continued

INDUSTRY AND STATE	Census year	Number of enterprises <sup>1</sup>	Number of mines	Wage earners (average for the year) <sup>2</sup>	Wages	Cost of supplies	Cost of fuel	Cost of purchased electric energy	Contract work	Value of products <sup>3</sup>	Horsepower rating of power equipment
LEAD AND ZINC—Continued											
Missouri.....	1929	24	29	4,089	\$0,232,834	\$2,606,532	\$325,401	\$1,742,624	\$55,513	\$23,593,448	84,888
	1919	93	96	4,793	\$5,955,929	\$2,567,624	\$1,106,807	\$98,415	\$65,798	\$15,878,508	56,098
Per cent of increase or decrease (—)		( <sup>4</sup> )	( <sup>5</sup> )	-15.7	4.6	5.0	-70.6	1,670.7	-15.6	48.0	48.9
Oklahoma.....	1929	63	93	4,507	\$0,037,369	\$3,528,772	\$353,083	\$904,593	\$242,088	\$18,027,077	61,839
	1919	111	123	5,253	\$0,008,250	\$4,218,142	\$733,285	\$743,944	\$228,899	\$18,979,720	55,182
Per cent of increase or decrease (—)		-43.2	-24.4	-14.2	-12.6	-16.3	-51.8	21.6	6.0	-5.0	12.1
Wisconsin.....	<sup>6</sup> 1929	9	9	284	\$363,961	\$202,521	\$5,817	\$151,108	\$24,252	\$1,326,162	4,523
	1919	23	34	1,078	\$1,390,349	\$930,990	\$31,143	\$405,839	\$96,027	\$3,733,109	9,758
Per cent of decrease (—)		( <sup>7</sup> )	( <sup>8</sup> )	-73.7	-73.8	-78.2	-81.3	-62.8	-74.7	-64.5	-53.6
Montana, Nevada, New Mexico, Utah, and Washington.....	1929	79	88	7,002	\$11,333,918	\$5,172,847	\$248,950	\$1,178,545	\$959,144	\$27,003,126	61,568
	<sup>9</sup> 1919	72	73	3,647	\$0,038,184	\$3,003,626	\$237,669	\$405,305	\$115,219	\$12,800,842	27,612
Per cent of increase.....		( <sup>10</sup> )	( <sup>11</sup> )	92.0	87.7	72.2	4.7	153.3	732.5	110.9	123.0
New Jersey, New York, and Tennessee.....	1929	6	8	1,014	\$2,464,391	\$714,302	\$279,014	\$198,367	\$137,655	\$6,782,411	29,398
	<sup>10</sup> 1919	7	8	2,733	\$3,362,939	\$1,237,974	\$233,561	\$199,503	\$48,200	\$6,052,662	26,557
Per cent of increase or decrease (—)		( <sup>12</sup> )		-30.0	-27.0	-42.3	19.5	-0.6	185.2	12.1	10.7
Other States <sup>3</sup> .....	1929	11	14	523	\$585,969	\$202,200	\$25,052	\$183,267	-----	\$1,395,787	5,706
	1919	34	35	382	\$490,345	\$204,278	\$15,894	\$99,219	\$35,589	\$3,351	3,351
GOLD AND SILVER, LOSE											
California.....	1929	241	258	7,946	\$12,982,224	\$5,938,318	\$557,879	\$1,317,415	\$694,118	\$26,107,437	98,772
	1919	740	799	15,436	\$23,817,057	\$13,040,897	\$1,023,124	\$2,336,130	\$1,237,043	\$54,104,089	149,100
Per cent of decrease (—)		-67.4	-67.7	-48.5	-45.7	-54.5	-48.0	-43.0	-43.9	-51.9	-33.8
Colorado.....	1929	61	61	1,601	\$2,584,143	\$1,056,182	\$25,219	\$346,973	\$381,812	\$4,155,009	24,377
	1919	90	109	2,881	\$3,870,121	\$2,172,304	\$150,402	\$672,413	\$20,507	\$8,439,544	33,412
Per cent of increase or decrease (—)		( <sup>13</sup> )	( <sup>14</sup> )	-41.3	-33.2	-51.4	-83.2	-39.4	1,761.9	-50.8	-27.0
Montana.....	1929	55	60	1,640	\$2,618,332	\$1,068,435	\$234,592	\$343,915	\$173,355	\$4,360,311	13,283
	1919	198	234	3,495	\$5,075,929	\$3,259,774	\$517,200	\$679,716	\$177,130	\$12,821,315	32,421
Per cent of decrease (—)		-72.2	-70.5	-52.8	-52.9	-67.2	-54.6	-49.4	-2.1	-60.0	-59.0
Nevada.....	1929	21	23	488	\$780,771	\$204,972	\$11,603	\$80,853	\$24,982	\$1,474,428	5,020
	1919	116	121	1,107	\$2,033,815	\$679,786	\$88,265	\$100,273	\$30,434	\$2,754,857	9,121
Per cent of decrease (—)		-81.9	-81.0	-55.9	-61.6	-56.6	-86.8	-19.4	-17.9	-46.5	-38.3
Nevada.....	1929	45	46	973	\$1,705,026	\$954,796	\$77,872	\$354,600	\$95,019	\$3,432,044	20,446
	1919	148	148	3,808	\$3,808,482	\$2,006,091	\$205,463	\$534,707	\$177,312	\$9,687,431	32,605
Per cent of decrease (—)		-69.6	-68.9	-53.3	-55.2	-64.6	-70.7	-33.7	-40.4	-64.6	-37.3
Arizona and Utah.....	1929	38	38	1,256	\$2,227,513	\$772,923	\$34,079	\$143,871	\$16,250	\$4,170,422	7,425
	1919	100	101	2,809	\$4,285,121	\$2,277,825	\$224,216	\$326,381	\$709,210	\$11,674,992	21,191
Per cent of decrease (—)		-62.0	-62.4	-55.3	-48.0	-66.1	-84.8	-55.9	-98.0	-64.3	-65.0
Oregon, South Dakota, and Texas.....	1929	6	6	1,527	\$2,514,547	\$1,450,980	\$159,975	\$4,174	-----	\$7,188,018	22,020
	<sup>11</sup> 1919	14	19	2,169	\$2,890,959	\$1,267,045	\$270,440	\$47,072	\$3,612	\$6,024,460	14,412
Per cent of increase or decrease (—)		( <sup>15</sup> )	( <sup>16</sup> )	-29.6	-13.0	15.4	-40.8	-91.1	-----	19.3	57.0
Other States <sup>3</sup> .....	1929	15	15	362	\$551,892	\$335,050	\$14,479	\$43,029	\$2,700	\$1,326,605	4,085
	1919	65	67	891	\$1,253,233	\$698,012	\$107,058	\$75,574	\$28,838	\$2,761,440	5,938
GOLD, PLACER											
California.....	1929	32	37	578	\$970,010	\$590,173	\$1,421	\$603,938	\$1,708	\$3,779,241	20,280
	1919	112	132	1,380	\$1,914,072	\$2,244,728	\$20,459	\$1,128,874	\$132,807	\$9,368,561	35,932
Per cent of decrease (—)		-71.4	-72.0	-58.1	-49.3	-73.7	-93.1	-46.3	-98.7	-59.7	-43.1
Other States <sup>3</sup> .....	1929	10	10	87	\$130,798	\$42,270	\$1,421	\$43,139	\$1,708	\$309,646	2,609
	1919	52	54	278	\$438,666	\$302,808	\$14,888	\$176,938	\$5,837	\$1,430,907	6,144

<sup>1</sup> See GENERAL EXPLANATIONS—The Enterprise.

<sup>2</sup> See GENERAL EXPLANATIONS—Persons Engaged.

<sup>3</sup> See GENERAL EXPLANATIONS—Value of Products.

<sup>4</sup> Figures for 1919 have been revised to make them comparable with 1929 by exclusion of cost of ore purchased as material.

<sup>5</sup> Per cent not computed where base is less than 100.

<sup>6</sup> See Table 23 for States not shown separately for 1929.

<sup>7</sup> Not including data for 1 small enterprise in the zinc industry, to avoid disclosure of data for individual enterprises.

<sup>8</sup> Not including data for 1 small enterprise in the lead industry, to avoid disclosure of data for individual enterprises.

<sup>9</sup> Includes data for 1 enterprise in South Dakota.

<sup>10</sup> Includes data for 1 enterprise in Pennsylvania.

<sup>11</sup> Includes data for 1 enterprise in Georgia.

TYPE OF OWNERSHIP

As shown in Table 7, corporations operated 616 mines, or 72.5 per cent of the total number, employed 96.4 per cent of the total number of wage earners, and contributed 97.6 per cent of the total value of products. The average value of products per enterprise for unin-

corporated enterprises (individuals, partnerships, etc.) was only \$46,637, and of the total number (217) only 18 reported a value of products exceeding \$100,000. The larger enterprises in this class were principally those in the zinc-mining industry in Oklahoma and those in the mining industries in Colorado.

TABLE 7.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO TYPE OF OWNERSHIP, BY INDUSTRIES, FOR SELECTED STATES: 1929

INDUSTRY AND STATE	ALL CLASSES				CORPORATE				OTHER <sup>1</sup>			
	Number of enterprises	Number of mines	Wage earners (average for the year)	Value of products	Number of enterprises	Number of mines	Wage earners (average for the year)	Value of products	Number of enterprises	Number of mines	Wage earners (average for the year)	Value of products
United States, total.....	719	850	78,933	\$425,831,855	502	616	76,094	\$415,711,500	217	234	2,839	\$10,120,295
Copper.....	143	180	44,502	283,517,373	92	128	44,047	282,226,806	51	52	455	1,290,567
Lead.....	155	171	14,007	67,561,778	112	127	13,671	66,817,826	43	44	330	743,952
Zinc.....	148	204	11,900	44,866,026	118	162	10,636	39,280,478	30	42	1,264	5,579,548
Gold, lode.....	174	184	5,353	17,650,174	113	122	4,900	16,461,007	61	62	453	1,189,167
Silver.....	67	74	2,593	8,457,283	47	52	2,332	7,313,286	20	22	261	1,143,977
Gold, placer.....	32	37	578	3,779,241	20	25	508	3,606,157	12	12	70	173,084
Copper:												
Arizona.....	63	68	15,564	113,980,541	35	30	15,339	113,404,780	28	29	225	575,761
Montana.....	7	26	10,508	50,154,473	4	23	10,508	50,154,473	3	3	( <sup>3</sup> )	( <sup>3</sup> )
Utah.....	9	10	3,160	46,227,987	8	9	3,160	46,227,987	1	1	( <sup>3</sup> )	( <sup>3</sup> )
Michigan.....	9	18	7,834	29,683,859	9	18	7,834	29,683,859				
Nevada.....	13	13	2,698	10,984,910	7	7	2,652	19,695,036	6	6	46	289,874
New Mexico.....	14	14	2,258	13,293,420	7	7	2,147	13,041,478	7	7	111	251,942
California.....	10	11	994	4,748,996	7	8	977	4,708,366	3	3	17	40,600
Lead:												
Missouri.....	13	15	3,773	22,955,417	9	11	3,764	22,937,482	4	4	9	17,935
Idaho.....	28	32	3,189	17,400,861	24	28	3,172	17,356,515	4	4	17	44,346
Utah.....	29	34	4,083	17,249,862	29	34	4,083	17,249,862				
Colorado.....	18	20	733	2,946,136	13	15	653	2,772,207	5	5	80	173,920
Montana.....	16	17	379	1,581,577	8	9	334	1,364,596	8	8	45	215,981
Oklahoma.....	6	6	390	1,508,124	6	6	390	1,508,124				
Kansas.....	7	7	282	1,122,822	4	4	222	1,027,265	3	3	60	95,557
Zinc:												
Oklahoma.....	57	87	4,117	16,518,953	46	67	3,253	12,690,272	11	20	864	3,819,681
Kansas.....	30	45	2,428	9,912,331	28	40	2,428	9,912,331	2	5	( <sup>3</sup> )	( <sup>3</sup> )
New Mexico.....	8	9	1,036	4,046,072	7	8	1,036	4,046,072	1	1	( <sup>3</sup> )	( <sup>3</sup> )
Wisconsin.....	9	9	284	1,326,162	8	8	284	1,326,162	1	1	( <sup>3</sup> )	( <sup>3</sup> )
Idaho.....	6	7	450	1,240,562	6	7	450	1,240,562				
Gold, lode:												
South Dakota.....	2	2	1,304	6,591,144	2	2	1,304	6,591,144				
Colorado.....	44	53	1,497	4,087,060	37	46	1,234	3,421,114	7	7	263	635,946
California.....	58	58	1,627	3,940,925	34	34	1,562	3,756,519	24	24	65	184,406
Nevada.....	31	32	363	1,568,698	14	14	282	1,374,484	17	18	81	194,214
Silver:												
Utah.....	11	11	939	3,305,749	8	8	860	2,652,058	3	3	79	653,691
Nevada.....	14	14	610	1,863,346	10	10	559	1,713,311	4	4	51	145,035
Montana.....	12	14	262	1,030,622	8	10	243	936,412	4	4	49	94,210
Gold, placer:												
California.....	22	27	491	3,469,595	13	18	447	3,312,519	9	9	44	157,076

<sup>1</sup> Partnerships, enterprises operated by individuals, etc.  
<sup>2</sup> Includes data for "Other" types of ownership.

<sup>3</sup> Included with "Corporate." See footnote 2.

SCALE OF OPERATION

Enterprises classified according to value of products (Table 8).—Of the total number of enterprises (719), only 33, or 4.6 per cent, whose value of products was \$2,500,000 or more, contributed 74.1 per cent of the

total value and employed 59.1 per cent of the total number of wage earners. Conversely 417, or 58 per cent of all enterprises, in the smallest two groups shown, contributed only 1.5 per cent of the total value of products.

MINES AND QUARRIES

TABLE 8.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO VALUE OF PRODUCTS, BY INDUSTRIES, FOR SELECTED STATES: 1929

INDUSTRY, STATE, AND VALUE OF PRODUCTS PER ENTERPRISE	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	VALUE OF PRODUCTS		INDUSTRY, STATE, AND VALUE OF PRODUCTS PER ENTERPRISE	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	VALUE OF PRODUCTS	
					Amount	Per cent of total						Amount	Per cent of total
United States, total.....	719	850	78,933	\$126,343,798	\$425,831,855	100.0	LEAD—Continued						
Less than \$20,000.....	302	315	2,276	2,984,520	2,307,415	0.6	Missouri, total.....	13	15	3,773	\$5,900,659	\$22,955,417	100.0
\$20,000 to \$49,999.....	115	127	1,049	2,780,164	3,911,840	0.9	Less than \$20,000.....	6	6				
\$50,000 to \$99,999.....	54	67	1,628	2,178,035	4,003,480	0.9	\$20,000 to \$49,999.....	1	1				
\$100,000 to \$249,999.....	81	88	3,764	5,515,492	12,791,889	3.0	\$250,000 to \$499,999.....	1	1	13,773	5,900,659	22,955,417	100.0
\$250,000 to \$499,999.....	71	86	6,840	10,358,599	24,897,000	5.8	\$500,000 to \$999,999.....	1	1				
\$500,000 to \$999,999.....	40	56	7,281	10,508,079	26,249,076	6.2	\$1,000,000 to \$2,499,999.....	2	2				
\$1,000,000 to \$2,499,999.....	23	59	8,584	14,012,209	36,142,224	8.5	\$2,500,000 to \$4,999,999.....	2	2				
\$2,500,000 to \$4,999,999.....	12	14	8,267	13,286,513	39,726,619	9.3	\$5,000,000 and over.....	2	4				
\$5,000,000 and over.....	21	48	38,354	64,659,082	275,742,306	64.8	Idaho, total.....	28	32	3,189	5,787,889	17,400,861	100.0
							Less than \$20,000.....	9	11	83	133,439	93,211	0.5
							\$20,000 to \$49,999.....	4	4	43	91,166	133,730	0.8
							\$50,000 to \$99,999.....	2	2				
							\$100,000 to \$249,999.....	3	3	1,200	360,172	774,753	4.5
							\$250,000 to \$499,999.....	5	5	448	795,621	1,805,281	10.4
							\$500,000 to \$999,999.....	2	2				
							\$2,500,000 to \$4,999,999.....	2	2	12,415	4,407,491	14,593,886	83.9
							\$5,000,000 and over.....	1	3				
							Utah, total.....	20	34	4,083	6,601,787	17,240,862	100.0
							Less than \$20,000.....	4	4	29	30,456	15,422	0.1
							\$20,000 to \$49,999.....	7	7	130	184,150	224,690	1.3
							\$50,000 to \$99,999.....	2	2				
							\$100,000 to \$249,999.....	1	1	1,150	160,363	353,775	2.1
							\$250,000 to \$499,999.....	6	6	512	725,244	1,902,004	11.0
							\$500,000 to \$999,999.....	3	3	579	987,701	1,807,658	10.5
							\$1,000,000 to \$2,499,999.....	4	6				
							\$2,500,000 to \$4,999,999.....	2	2	12,677	4,603,873	12,946,313	75.1
							Colorado, total.....	18	20	733	1,440,603	2,946,136	100.0
							Less than \$20,000.....	11	13	114	181,579	65,722	2.2
							\$20,000 to \$49,999.....	1	1				
							\$50,000 to \$99,999.....	1	1	1,127	208,259	373,005	12.7
							\$100,000 to \$249,999.....	2	2				
							\$250,000 to \$499,999.....	2	2				
							\$1,000,000 to \$2,499,999.....	1	1	1,492	1,059,770	2,507,409	85.1
							ZINC, total.....	148	204	11,000	16,274,339	44,866,026	100.0
							Less than \$20,000.....	24	27	139	143,453	193,815	0.4
							\$20,000 to \$49,999.....	21	21	297	357,308	752,159	1.7
							\$50,000 to \$99,999.....	14	14	455	544,717	1,001,317	2.2
							\$100,000 to \$249,999.....	38	43	1,840	2,405,846	6,313,994	14.1
							\$250,000 to \$499,999.....	25	33	1,902	2,568,331	8,264,040	18.4
							\$500,000 to \$999,999.....	17	20	2,543	3,357,155	10,675,909	23.8
							\$1,000,000 to \$2,499,999.....	7	34				
							\$2,500,000 to \$4,999,999.....	2	3	14,724	6,867,469	17,650,792	39.4
							Oklahoma, total.....	57	87	4,117	5,609,272	16,618,953	100.0
							Less than \$20,000.....	3	3	11	8,885	28,212	0.2
							\$20,000 to \$49,999.....	11	11	143	194,113	408,971	2.5
							\$50,000 to \$99,999.....	5	6	97	122,194	340,121	2.1
							\$100,000 to \$249,999.....	17	20	707	954,576	2,916,702	17.7
							\$250,000 to \$499,999.....	11	12	805	1,109,186	3,450,708	20.9
							\$500,000 to \$999,999.....	7	13	1,126	1,343,319	4,339,663	26.3
							\$1,000,000 to \$2,499,999.....	3	23	1,228	1,777,199	5,034,576	30.5
							Kansas, total.....	80	45	2,428	3,140,236	9,912,331	100.0
							Less than \$20,000.....	1	1				
							\$20,000 to \$49,999.....	1	1	153	70,315	136,732	1.4
							\$50,000 to \$99,999.....	1	1				
							\$100,000 to \$249,999.....	13	14	621	772,331	1,906,708	20.1
							\$250,000 to \$499,999.....	8	11	644	864,890	2,380,239	28.9
							\$500,000 to \$999,999.....	4	9				
							\$1,000,000 to \$2,499,999.....	2	8	11,110	1,432,700	4,913,652	49.6
							New Mexico, total.....	8	9	1,036	1,429,239	4,046,072	100.0
							Less than \$20,000.....	2	2				
							\$20,000 to \$49,999.....	1	1	1,106	265,658	375,637	9.3
							\$50,000 to \$99,999.....	1	1				
							\$100,000 to \$249,999.....	2	3				
							\$250,000 to \$499,999.....	1	1	1,840	1,163,581	3,670,435	90.7
							\$500,000 to \$999,999.....	1	1				
							\$2,500,000 to \$4,999,999.....	1	1				
							GOLD (lode), total.....	174	184	5,353	8,655,505	17,650,174	100.0
							Less than \$20,000.....	110	113	789	954,902	865,110	4.0
							\$20,000 to \$49,999.....	26	31	446	717,490	868,043	4.0
							\$50,000 to \$99,999.....	12	12	307	476,845	845,124	4.8
							\$100,000 to \$249,999.....	11	11	588	974,490	1,501,548	8.5
							\$250,000 to \$499,999.....	11	13	1,332	2,162,228	4,246,690	24.1
							\$500,000 to \$999,999.....	2	2				
							\$1,000,000 to \$2,499,999.....	1	1	1,941	3,369,650	9,325,153	52.8
							\$5,000,000 and over.....	1	1				

1 Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

TABLE 8.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO VALUE OF PRODUCTS, BY INDUSTRIES, FOR SELECTED STATES: 1929—Continued

INDUSTRY, STATE, AND VALUE OF PRODUCTS PER ENTERPRISE	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	VALUE OF PRODUCTS		INDUSTRY, STATE, AND VALUE OF PRODUCTS PER ENTERPRISE	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	VALUE OF PRODUCTS	
					Amount	Per cent of total						Amount	Per cent of total
<b>GOLD (lode)—Continued</b>							<b>SILVER—Continued</b>						
South Dakota, total.....	2	2	1,304	\$2,209,107	\$8,591,144	100.0	Utah, total.....	11	11	939	\$1,628,964	\$3,305,749	100.0
\$50,000 to \$99,999.....	1	1	1,304	2,209,107	8,591,144	100.0	Less than \$20,000.....	6	5	78	150,763	53,405	1.6
\$5,000,000 and over.....	1	1					\$50,000 to \$99,999.....	1	1				
Colorado, total.....	44	53	1,497	2,418,321	4,057,000	100.0	\$100,000 to \$249,999.....	1	1	1,603	1,064,532	2,717,413	82.2
Less than \$20,000.....	20	22	195	283,610	180,938	4.6	\$250,000 to \$499,999.....	2	2				
\$20,000 to \$49,999.....	9	14	224	377,942	307,764	7.6	Nevada, total.....	14	14	610	1,124,830	1,863,346	100.0
\$50,000 to \$99,999.....	6	6	105	169,149	443,573	10.9	Less than \$20,000.....	5	5	153	227,504	42,708	2.3
\$100,000 to \$249,999.....	3	3	180	203,715	411,010	10.1	\$20,000 to \$49,999.....	3	3				
\$250,000 to \$499,999.....	5	7	1,793	1,293,905	2,707,775	66.7	\$50,000 to \$99,999.....	1	1	194	165,574	430,324	23.1
\$500,000 to \$999,999.....	1	1					\$100,000 to \$249,999.....	2	2				
California, total.....	58	58	1,627	2,463,593	3,940,925	100.0	\$250,000 to \$499,999.....	2	2	1,340	698,782	1,298,245	69.7
Less than \$20,000.....	42	42	260	324,748	278,482	7.1	\$500,000 to \$999,999.....	1	1				
\$20,000 to \$49,999.....	8	8	103	142,244	250,001	6.4	Montana, total.....	12	14	292	509,840	1,030,622	100.0
\$50,000 to \$99,999.....	1	1	1,170	271,380	357,164	0.1	Less than \$20,000.....	4	4	58	99,986	20,546	2.6
\$100,000 to \$249,999.....	2	2					\$20,000 to \$49,999.....	1	1				
\$250,000 to \$499,999.....	4	4	1,094	1,745,221	3,054,078	77.5	\$50,000 to \$99,999.....	4	5	194	153,476	672,847	65.3
\$500,000 to \$999,999.....	1	1					\$100,000 to \$249,999.....	2	3				
Nevada, total.....	31	32	363	580,196	1,568,698	100.0	\$250,000 to \$499,999.....	1	1	1,000,000 to \$2,499,999.....	970,010	3,779,241	100.0
Less than \$20,000.....	21	22	121	160,102	174,403	11.1	California, total.....	22	27				
\$20,000 to \$49,999.....	5	5	52	80,574	159,506	10.2	Less than \$20,000.....	12	12	70	99,001	97,204	2.8
\$50,000 to \$99,999.....	2	2	1,190	339,520	1,234,789	78.7	\$20,000 to \$49,999.....	3	3				
\$100,000 to \$249,999.....	1	1					\$250,000 to \$499,999.....	4	4	199	155,315	655,432	17.3
\$250,000 to \$499,999.....	1	1	\$500,000 to \$999,999.....	1	1	1,305	567,533	2,735,903	72.4				
\$500,000 to \$999,999.....	1	1	SILVER, total.....	67	74					2,593	4,326,719	8,457,263	100.0
Less than \$20,000.....	20	30	440	705,364	229,003	2.7	California, total.....	22	27	491	839,212	3,469,595	100.0
\$20,000 to \$49,999.....	13	17	186	272,440	462,858	5.5	Less than \$20,000.....	12	12	70	99,001	97,204	2.8
\$50,000 to \$99,999.....	8	9	237	401,190	620,671	7.3	\$20,000 to \$49,999.....	3	3				
\$100,000 to \$249,999.....	7	8	281	478,892	1,074,043	12.7	\$50,000 to \$99,999.....	1	1	55	86,255	414,693	12.0
\$250,000 to \$499,999.....	4	4	381	688,180	1,330,550	15.7	\$100,000 to \$249,999.....	3	3				
\$500,000 to \$999,999.....	5	5	1,068	1,780,653	4,740,138	56.0	\$250,000 to \$499,999.....	1	1	1,305	567,533	2,735,903	78.9
\$1,000,000 to \$2,499,999.....	1	1					\$1,000,000 to \$2,499,999.....	2	2				

1 Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

**POWER**

Power equipment in use in 1929 (Table 9).—This table gives statistics for power equipment, by kinds as well as by the nature of installation, whether stationary or mobile, for the metal-mining industries for 1929. The data for electric motors driven by electric energy generated in the reporting enterprises are not included in the "aggregate horsepower," as shown in this and other tables, because such inclusion would result in duplication of the figures for the horsepower of the prime movers used in driving the generators. For the industries as a whole, approximately 34 per cent of the stationary prime-mover power was used directly and about 66 per cent was employed in driving generators. The use of electric power equipment dominated in each of the industries, and in the copper and lead mining industries the generator capacity was more than two-thirds of the total horsepower rating of the stationary prime-mover equipment. In a number of

instances, although prime movers and generators have been displaced by purchased electric energy, they are maintained by the enterprises for use in emergencies. This accounts for the high ratios of generator capacity to rating of motors reported as driven by energy generated in the enterprises, which appear in several instances in the following table.

In the classification as to the nature of installation, the mobile equipment class embraces the power equipment of shovels, mine locomotives, and other machinery moved from place to place in the course of operations, as contrasted with fixed installations, such as central power plants, hoisting and mill equipment, etc.

The number and horsepower of the several types of prime movers and the number and rating of electric motors and generators used by all enterprises in 1929 are given, by industries and by States, in Table 23.



TABLE 9.—POWER EQUIPMENT, STATIONARY AND MOBILE—NUMBER AND RATED CAPACITY OF PRIME MOVERS, MOTORS, AND GENERATORS, BY INDUSTRIES: 1929

[Enterprises whose value of product in 1929 was less than \$20,000 were permitted to report on an abbreviated schedule which called for the total number and horsepower rating of prime movers, but not by kind. Therefore, data for prime movers reported by 172 enterprises of this size are included with those for stationary steam engines. See Table 8 for statistics showing the relative importance of this class of enterprises]

INDUSTRY AND TYPE	PRIME MOVERS AND ELECTRIC MOTORS DRIVEN BY PURCHASED ENERGY													Electric motors driven by energy generated by enterprises reporting		Electric generators	
	Aggregate horsepower	Total horsepower of prime movers	Prime movers								Horsepower rating of inactive prime movers <sup>1</sup>	Electric motors driven by purchased energy					
			Steam engines		Steam turbines		Internal-combustion engines		Water wheels and water turbines			Number	Horsepower	Number	Horsepower		
			Number	Horsepower	Number	Horsepower	Number	Horsepower	Number	Horsepower							
Metal-mining industries, total.....	1,178,580	502,550	510	179,420	115	231,681	602	70,686	61	20,763	53,032	17,164	676,030	6,634	328,733	203	230,078
Stationary.....	1,093,326	465,941	424	147,836	115	231,681	466	65,061	61	20,763	53,400	15,086	627,885	6,234	305,999	203	230,678
Mobile.....	85,254	36,609	86	31,584	-----	-----	140	5,025	-----	-----	832	2,068	48,645	400	22,734	-----	-----
Copper, total.....	701,791	366,863	326	156,639	94	189,123	142	10,726	8	1,375	32,298	8,088	384,028	4,726	270,205	108	173,765
Stationary.....	642,406	334,581	249	125,945	94	189,123	78	18,138	8	1,375	32,192	6,578	307,825	4,418	249,034	108	173,765
Mobile.....	59,385	32,282	77	30,694	-----	-----	64	1,588	-----	-----	106	1,400	27,103	308	20,271	-----	-----
Lead, total.....	194,380	38,234	43	7,618	9	19,336	84	7,813	12	3,467	4,719	4,370	156,146	411	16,422	27	20,703
Stationary.....	176,941	37,494	37	7,428	9	19,336	75	7,263	12	3,467	4,719	3,860	139,447	343	14,150	27	20,703
Mobile.....	17,439	740	6	190	-----	-----	9	550	-----	-----	-----	501	16,699	68	2,272	-----	-----
Zinc, total.....	163,357	55,829	33	6,019	7	18,252	263	30,788	5	800	11,501	2,577	107,528	740	17,206	25	19,687
Stationary.....	157,438	53,000	31	5,619	7	18,252	204	28,329	5	800	11,501	2,512	104,438	716	17,015	25	19,687
Mobile.....	5,919	2,829	2	400	-----	-----	59	2,429	-----	-----	-----	65	3,090	24	191	-----	-----
Gold, lode, total.....	69,829	31,486	80	7,586	4	4,870	63	4,309	31	14,721	1,308	1,119	38,343	614	22,211	24	14,472
Stationary.....	68,413	30,953	79	7,286	4	4,870	54	4,076	31	14,721	982	1,088	37,460	614	22,211	24	14,472
Mobile.....	1,416	533	1	300	-----	-----	9	233	-----	-----	326	31	883	-----	-----	-----	-----
Silver, total.....	28,943	9,549	12	1,169	1	100	50	8,080	1	200	4,106	627	19,304	138	2,664	16	2,021
Stationary.....	27,848	9,324	12	1,169	1	100	45	7,855	1	200	4,006	616	18,524	138	2,664	16	2,021
Mobile.....	1,095	225	-----	-----	-----	-----	5	225	-----	-----	100	11	870	-----	-----	-----	-----
Gold, placer, total.....	20,280	589	16	389	-----	-----	-----	-----	4	200	-----	423	19,691	5	25	3	30
Stationary.....	20,280	589	16	389	-----	-----	-----	-----	4	200	-----	423	19,691	5	25	3	30

<sup>1</sup> Included in "Total horsepower of prime movers."

Summary: 1909-1929 (Table 10).—Although the aggregate horsepower increased 64.8 per cent during the period covered by the table, that of prime movers decreased 12.7 per cent, while that of electric motors driven by purchased energy increased 385.3 per cent.

Horsepower of motors driven by energy generated within the reporting enterprises also increased greatly, 508.9 per cent. It should be noted that, for 1909, data for steam turbines are included in the figures for steam engines.

TABLE 10.—POWER EQUIPMENT—NUMBER AND RATED CAPACITY OF PRIME MOVERS AND MOTORS, BY INDUSTRIES: 1929, 1919, AND 1909

[See headnote, Table 9, for explanation of totals for steam engines]

INDUSTRY	Cen- sus year	PRIME MOVERS AND ELECTRIC MOTORS DRIVEN BY PURCHASED ENERGY												Electric motors driven by energy gener- ated by enterprises reporting <sup>1</sup>	
		Aggre- gate horse- power	Total horse- power of prime movers	Steam engines		Steam turbines		Internal- combustion engines		Water wheels and water turbines		Electric motors driven by pur- chased energy			
				Num- ber	Horse- power	Num- ber	Horse- power	Num- ber	Horse- power	Num- ber	Horse- power	Num- ber	Horse- power		
Metal-mining industries.....	1929	1,178,580	502,550	510	179,420	115	231,681	602	70,686	61	20,783	17,154	676,030	6,634	323,733
	1919	930,559	557,828	1,437	308,392	104	163,393	948	63,610	200	22,433	9,183	378,731	4,393	203,401
	1909	715,267	575,956	2,031	433,021	(*)	(*)	714	25,008	722	67,927	3,020	130,311	1,471	53,900
Per cent of increase or decrease (-):															
1919-1929.....		25.8	-0.9	-64.5	-41.8	10.0	41.8	-36.5	11.1	-69.5	-7.4	83.8	78.5	51.0	61.6
1909-1919.....		30.9	-3.1	(*)	(*)			32.8	154.4	-72.3	-67.0	204.1	171.9	198.6	276.7
Copper.....	1929	701,791	366,863	326	156,639	94	189,123	142	19,726	8	1,375	8,038	334,928	4,728	270,205
	1919	522,426	336,458	842	245,398	79	123,223	129	16,327	10	1,510	3,647	135,968	3,252	161,024
	1909	376,404	324,178	2,099	303,848	(*)	(*)	71	2,325	15	18,005	819	52,286	536	25,888
Per cent of increase or decrease (-):															
1919-1929.....		34.3	-5.1	-61.3	-36.2	(*)	53.5	10.1	20.8	(*)	-8.9	120.4	148.3	45.3	67.8
1909-1919.....		38.8	19.2	(*)	(*)			(*)	002.2	(*)	-91.6	345.3	160.0	506.7	522.0
Lead and zinc.....	1929	357,737	94,063	76	13,637	16	37,538	347	38,571	17	4,267	6,947	263,674	1,151	33,028
	1919	229,401	117,527	411	42,821	21	35,420	433	35,415	30	3,871	2,389	111,874	625	22,884
	1909	110,559	107,278	2,158	94,220	(*)	(*)	214	12,987	3	69	59	3,288	801	12,048
Per cent of increase or decrease (-):															
1919-1929.....		55.9	-20.0	-81.5	-68.2	(*)	6.1	-19.9	8.9	(*)	10.2	190.8	135.7	84.2	46.9
1909-1919.....		107.6	9.6	(*)	(*)			102.3	172.7	(*)	(*)	(*)	3,307.7	73.1	80.9
Gold and silver, lode.....	1929	98,772	41,035	92	8,755	5	4,970	113	12,389	32	14,921	1,746	57,737	752	24,875
	1919	149,100	50,437	182	20,133	4	4,750	370	11,149	135	14,405	2,523	98,663	404	18,802
	1909	200,966	136,094	1,003	82,295	(*)	(*)	394	9,193	587	44,606	1,662	64,872	538	14,802
Per cent of increase or decrease (-):															
1919-1929.....		-33.8	-18.6	-49.5	-56.5	(*)	4.6	-69.5	11.1	-76.3	3.6	-30.8	-41.5	52.2	31.7
1909-1919.....		-26.8	-62.9	(*)	(*)			-6.1	21.3	-77.0	-67.7	51.8	52.1	-8.2	26.9
Gold, placer.....	1929	20,280	589	16	389					4	200	423	19,601	5	25
	1919	35,632	3,406	2	40			16	719	25	2,647	624	32,226	22	601
	1909	27,278	8,408	71	2,658			35	503	117	5,247	480	18,870	36	1,162
Per cent of increase or decrease (-):															
1919-1929.....		-43.1	-82.7	(*)	(*)					(*)	-62.5	-32.2	-35.9	(*)	-95.9
1909-1919.....		30.6	-59.5	(*)	(*)			(*)	42.9	-78.6	-49.6	30.0	70.8	(*)	-48.3

<sup>1</sup> Figures for electric generators shown in Table 23 for 1929; not available for 1919 and 1909.  
<sup>2</sup> Includes data for steam turbines.  
<sup>3</sup> Included with data for steam engines.  
<sup>4</sup> Per cent not computed where base is less than 100 or where figures are not comparable.

Horsepower per mine and per wage earner: 1909-1929 (Table 11).—Although appreciable increases in the aggregate rating of power equipment are shown for the industries as a whole, the marked increase per

mine is due mainly to the decrease in the number of small mines. The horsepower per wage earner more than doubled during the period from 1909 to 1929.

TABLE 11.—RATED CAPACITY OF POWER EQUIPMENT—AVERAGES PER MINE AND PER WAGE EARNER, BY INDUSTRIES: 1929, 1919, AND 1909

INDUSTRY	Cen- sus year	Num- ber of mines	Wage earners (average for the year)	HORSEPOWER RATING OF POWER EQUIPMENT			INDUSTRY	Cen- sus year	Num- ber of mines	Wage earners (average for the year)	HORSEPOWER RATING OF POWER EQUIPMENT			
				Total	Per mine	Per wage earn- er					Total	Per mine	Per wage earn- er	
Metal-mining industries.....	1929	850	78,933	1,178,580	1,386.6	14.9	Lead and zinc—Continued. Per cent of increase or decrease (-):							
	1919	1,630	82,417	936,559	574.6	11.4								
	1909	5,235	100,962	715,267	136.6	7.1								
Per cent of increase or decrease (-):							1919-1929.....							
1919-1929.....		-47.9	-4.2	26.8	141.3	30.7	1909-1919.....							
1909-1919.....		-63.9	-18.4	30.9	320.6	60.6								
Copper.....	1929	180	44,502	701,791	3,898.8	15.8	Gold and silver, lode.....	1929	258	7,946	98,772	382.8	12.4	
	1919	226	43,717	522,426	2,311.6	12.0								
	1909	368	51,643	376,464	1,023.0	7.3								
Per cent of increase or decrease (-):							Per cent of increase or decrease (-):							
1919-1929.....		-20.4	1.8	34.3	68.7	31.7	1919-1929.....							
1909-1919.....		-38.6	-15.3	38.8	126.0	64.4	1909-1919.....							
Lead and zinc.....	1929	375	25,907	357,737	954.0	13.8	Gold, placer.....	1929	37	578	20,280	548.1	35.1	
	1919	473	21,884	229,401	485.0	10.5								
	1909	1,142	16,307	110,559	96.8	6.6								
Per cent of increase or decrease (-):							Per cent of increase or decrease (-):							
1919-1929.....		-72.0	-58.1	-43.1	103.1	36.0	1919-1929.....							
1909-1919.....		-85.0	-55.3	30.6	770.6	193.2	1909-1919.....							

Size of enterprises according to total rating of power equipment (Table 12).—Those enterprises, 41 in number, having power rating of 5,000 or more horsepower accounted for 72.4 per cent of the aggregate employed in the metal-mining industries. In the largest two horsepower classes a large proportion of the prime-mover equipment (practically all of the steam-turbine

capacity) was used for driving electric generators while in the classes ranging up to 2,500 horsepower either the proportion was much smaller or none whatever was used in this manner. In the latter classes, also, internal-combustion engines were particularly significant in the prime-mover group.

TABLE 12.—NUMBER AND RATED CAPACITY OF PRIME MOVERS, MOTORS, AND GENERATORS, FOR ENTERPRISES CLASSIFIED ACCORDING TO TOTAL RATING OF POWER EQUIPMENT, BY INDUSTRIES: 1929

[In some industries, in order to avoid disclosing data for individual enterprises, the figures for certain groups have been combined. In such cases an (x) is placed in the column from which the figures have been omitted, and the figures for the group with which they have been combined are printed in *italics*. In compiling the totals for all industries combined, each enterprise has been classified in its proper group]

INDUSTRY AND TYPE	Total, all sizes	RATING OF POWER EQUIPMENT FOR ENTERPRISES INDIVIDUALLY REPORTING TOTAL HORSEPOWER OF—									
		Less than 25	25 to 99	100 to 249	250 to 499	500 to 999	1,000 to 2,499	2,500 to 4,999	5,000 to 9,999	10,000 to 24,999	25,000 or more
<b>METAL-MINING INDUSTRIES</b>											
Number of enterprises reporting power equipment <sup>1</sup> .....	603	43	108	122	90	106	69	24	15	17	9
Prime movers and electric motors driven by purchased energy, aggregate horsepower.....	1,178,580	570	5,891	10,097	32,611	74,484	102,746	89,778	105,675	257,891	480,206
Prime movers, total horsepower.....	502,550	499	3,617	6,723	11,404	26,378	20,796	13,968	35,447	136,209	247,509
Steam engine <sup>2</sup> —											
Number.....	510	20	68	44	40	30	12	10	42	111	115
Horsepower.....	170,420	258	1,787	1,832	4,165	4,092	2,070	5,910	14,230	60,577	84,490
Steam turbines—											
Number.....	115	4	1	1	1	1	6	4	8	24	68
Horsepower.....	231,681	85	100	100	100	100	4,050	6,000	7,542	51,479	162,425
Internal-combustion engines—											
Number.....	602	20	60	87	69	161	112	53	8	22	1
Horsepower.....	70,086	221	1,621	3,870	6,789	19,222	13,676	2,058	11,975	11,163	35
Water wheels and water turbines—											
Number.....	61	1	6	14	8	16	4	4	4	11	2
Horsepower.....	20,763	20	124	915	450	3,064	1,000	1,700	1,700	12,990	500
Horsepower rating of inactive prime movers, included above.....	53,932	20	55	550	619	2,050	747	2,870	4,800	22,560	19,625
Electric motors driven by purchased energy—											
Number.....	17,154	8	108	377	596	1,455	2,120	1,803	1,700	4,012	4,975
Horsepower.....	676,030	77	2,214	12,974	21,207	48,106	81,950	75,805	70,223	121,682	241,737
Electric motors driven by energy generated by enterprises reporting:											
Number.....	6,634			28	62	287	298	223	505	1,895	3,336
Horsepower.....	328,733			628	1,500	5,648	10,638	5,800	15,878	80,522	208,059
Electric generators:											
Number.....	203			15	7	39	17	7	33	50	29
Kilowatts.....	230,678			683	1,520	5,319	4,600	5,000	13,670	68,941	130,945
<b>COPPER</b>											
Number of enterprises reporting power equipment <sup>1</sup> .....	108	10	20	18	7	10	10	9	7	9	8
Prime movers and electric motors driven by purchased energy, aggregate horsepower.....	701,791	153	977	2,887	2,006	7,167	18,469	31,794	48,456	133,146	456,140
Prime movers.....	306,893	108	977	1,905	1,100	4,204	3,560	8,370	24,172	74,958	247,509
Electric motors driven by purchased energy.....	394,928	45		982	1,506	2,953	14,909	23,424	24,284	58,188	208,637
Electric motors driven by energy generated by enterprises reporting, horsepower.....	270,205			8		959	3,553	3,000	11,412	43,204	208,059
Electric generators, kilowatts.....	173,705			2		1,218	2,200	1,760	8,870	28,780	130,945
<b>LEAD</b>											
Number of enterprises reporting power equipment <sup>1</sup> .....	120	10	19	25	17	17	18	6	2	5	1
Prime movers and electric motors driven by purchased energy, aggregate horsepower.....	194,380	145	960	4,232	5,921	11,871	25,452	22,716	(x)	123,083	(x)
Prime movers.....	38,234	145	615	1,202	2,493	4,846	4,127	605	(x)	24,141	(x)
Electric motors driven by purchased energy.....	156,146		345	3,030	3,428	7,025	21,325	22,051	(x)	98,942	(x)
Electric motors driven by energy generated by enterprises reporting, horsepower.....	16,422			117	410	1,350	1,450			13,095	
Electric generators, kilowatts.....	20,703			132	375	1,170	900			18,126	
<b>ZINC</b>											
Number of enterprises reporting power equipment <sup>1</sup> .....	144	6	10	10	30	48	28	8	2	2	
Prime movers and electric motors driven by purchased energy, aggregate horsepower.....	163,857	70	707	1,490	11,127	33,378	40,337	32,340	(x)	43,358	
Prime movers.....	55,820	48	323	365	4,893	9,868	10,559	4,933	(x)	24,735	
Electric motors driven by purchased energy.....	107,528	22	379	1,125	6,234	23,510	29,728	27,407	(x)	19,123	
Electric motors driven by energy generated by enterprises reporting, horsepower.....	17,200			35	270	20	1,125	2,800	(x)	12,956	
Electric generators, kilowatts.....	19,687			112	270	20	600	3,250	(x)	15,435	
<b>GOLD, LODGE</b>											
Number of enterprises reporting power equipment <sup>1</sup> .....	145	14	44	40	19	16	9	1	1	1	
Prime movers and electric motors driven by purchased energy, aggregate horsepower.....	69,820	174	2,489	6,150	6,409	12,044	12,563	(x)	(x)	50,000	
Prime movers.....	31,486	164	1,243	1,969	1,520	3,700	2,410			20,450	
Electric motors driven by purchased energy.....	38,343	10	1,246	4,151	4,889	8,344	10,153	(x)	(x)	30,550	
Electric motors driven by energy generated by enterprises reporting, horsepower.....	22,211			203	220	1,555	4,500			15,733	
Electric generators, kilowatts.....	14,472			223	325	1,624	900			11,400	

See footnotes at end of table.

TABLE 12.—NUMBER AND RATED CAPACITY OF PRIME MOVERS, MOTORS, AND GENERATORS, FOR ENTERPRISES CLASSIFIED ACCORDING TO TOTAL RATING OF POWER EQUIPMENT, BY INDUSTRIES: 1929—Continued

[See note at head of this table]

INDUSTRY AND TYPE	Total, all sizes	RATING OF POWER EQUIPMENT FOR ENTERPRISES INDIVIDUALLY REPORTING TOTAL HORSEPOWER OF—									
		Less than 25	25 to 99	100 to 249	250 to 499	500 to 999	1,000 to 2,499	2,500 to 4,999	5,000 to 9,999	10,000 to 24,999	25,000 or more
<b>METAL-MINING INDUSTRIES—Continued</b>											
<b>SILVER</b>											
Number of enterprises reporting power equipment <sup>1</sup> .....	58	2	10	23	9	10	3		1		
Prime movers and electric motors driven by purchased energy, aggregate horsepower.....	28,943	(x)	573	3,838	3,197	7,343	(x)		13,992		
Prime movers.....	9,540	(x)	329	322	1,308	3,760	(x)		3,240		
Electric motors driven by purchased energy.....	19,394		244	3,016	1,799	3,583	(x)		10,752		
Electric motors driven by energy generated by enterprises reporting, horsepower.....	2,664			240	660	1,764					
Electric generators, kilowatts.....	2,021			184	550	1,287					
<b>GOLD, PLACER</b>											
Number of enterprises reporting power equipment <sup>1</sup> .....	28	1	5	6	8	5	1		2		
Prime movers and electric motors driven by purchased energy, aggregate horsepower.....	20,280	(x)	159	1,100	3,351	2,691	(x)		12,979		
Prime movers.....	589	(x)	159	430							
Electric motors driven by purchased energy.....	19,691			670	3,351	2,691	(x)		12,979		
Electric motors driven by energy generated by enterprises reporting, horsepower.....	25			25							
Electric generators, kilowatts.....	30			30							

<sup>1</sup> No power equipment was reported by 116 enterprises in industries as follows: Copper, 35; lead, 35; zinc, 4; gold, lode, 29; silver, 9; gold, placer, 4.  
<sup>2</sup> See headnote, Table 9, for explanation of totals for steam engines.

CHARACTER OF OPERATIONS

Summary for metal mines, with and without concentrating or beneficiating plants, and for concentrating and beneficiating plants only (Table 13).—Of the total number of enterprises (523) accounted for in this table, 299, or 57.2 per cent, operated beneficiating or concentrating plants in connection with their mining operations. These enterprises contrib-

uted 85.2 per cent of the total value of products and employed 83.6 per cent of the total number of wage earners reported for all enterprises represented in this table. Enterprises without beneficiating plants accounted for 13.9 per cent, while those engaged in milling only (including operations on dumps and old tailings) accounted for only eight-tenths of 1 per cent, of value of products. (See table headnote.)

TABLE 13.—SUMMARY FOR METAL MINES, WITH AND WITHOUT CONCENTRATING OR BENEFICIATING PLANTS, AND FOR CONCENTRATING AND BENEFICIATING PLANTS ONLY: 1929

[This table does not include data for 172 enterprises whose value of product was less than \$20,000. Such enterprises were permitted to report on an abbreviated schedule, which did not call for information pertaining to character of operation. These enterprises (with total value of products, \$1,205,022) were distributed as follows: Copper, 42 (\$287,334); lead, 35 (\$236,221); zinc, 10 (\$86,703); gold, lode, 60 (\$430,115); silver, 17 (\$129,349); gold, placer, 8 (\$35,300); nor does it include data for 24 placer-mining enterprises]

INDUSTRY AND CHARACTER OF OPERATION	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	Cost of supplies	Cost of fuel	Cost of purchased electric energy	HORSEPOWER RATING OF POWER EQUIPMENT		VALUE OF PRODUCTS	
								Prime movers	Electric motors driven by purchased energy	Amount	Per cent of total
Metal-mining industries, total.....	523	649	77,456	\$124,325,418	\$67,914,710	\$11,303,936	\$13,447,077	407,171	651,725	\$420,882,892	100.0
Mines with concentrating plants <sup>1</sup> .....	299	396	64,742	102,819,067	59,212,246	10,449,170	11,456,724	470,331	569,110	358,603,152	85.2
Mines without concentrating plants.....	196	223	12,159	20,646,299	7,450,107	640,690	1,669,932	23,210	73,335	58,713,104	13.9
Reduction mills only (including mills operating on dumps and old tailings) <sup>1</sup> .....	23	30	555	860,052	1,252,357	214,067	330,371	3,630	9,277	3,566,636	0.8
Copper, total.....	101	138	44,234	72,917,249	43,912,167	9,210,052	6,027,234	365,566	334,321	283,230,039	100.0
Mines with concentrating plants.....	45	76	38,524	62,929,944	40,102,637	3,780,709	5,238,270	348,020	300,185	243,140,946	87.6
Mines without concentrating plants.....	56	62	5,710	9,087,305	3,809,530	429,343	788,958	16,946	34,136	35,089,093	12.4
Lead, total.....	120	136	13,831	22,706,576	10,292,220	680,700	3,733,230	37,603	155,391	67,325,557	100.0
Mines with concentrating plants.....	63	75	11,297	18,578,893	8,550,500	582,593	3,311,900	34,983	138,747	55,508,911	82.4
Mines without concentrating plants.....	53	57	2,423	3,924,117	1,547,847	92,128	310,848	2,620	13,932	10,952,224	16.3
Reduction mills only (including mills operating on dumps and old tailings).....	4	4	111	205,566	193,813	5,979	110,482		2,712	864,422	1.3
Zinc, total.....	188	194	11,861	16,237,378	7,940,353	855,305	2,369,198	55,605	106,685	44,779,323	100.0
Mines with concentrating plants.....	103	154	9,955	13,143,005	6,333,036	760,810	1,963,480	52,413	86,280	38,064,873	85.0
Mines without concentrating plants.....	17	20	1,660	2,727,154	888,111	53,599	244,146	812	15,925	5,136,587	11.5
Reduction mills only (including mills operating on dumps and old tailings).....	18	20	246	367,219	719,211	40,896	171,572	2,380	4,480	1,577,863	3.5
Gold, lode, total.....	114	124	5,079	8,339,052	4,003,612	436,181	832,617	29,252	36,768	17,220,059	100.0
Mines with concentrating plants.....	69	71	3,884	6,384,223	3,239,153	238,253	615,121	26,245	30,671	13,238,939	76.9
Mines without concentrating plants.....	39	47	997	1,667,562	425,126	30,736	169,179	1,757	4,012	2,856,769	16.8
Reduction mills only (including mills operating on dumps and old tailings).....	6	6	198	287,267	339,333	167,192	48,317	1,250	2,085	1,124,351	6.5
Silver, total.....	50	57	2,451	4,125,163	1,766,353	121,603	434,798	9,145	18,560	8,327,914	100.0
Mines with concentrating plants <sup>2</sup> .....	19	20	1,082	1,785,002	936,800	86,814	337,947	8,070	13,227	3,649,483	43.8
Mines without concentrating plants.....	31	37	1,369	2,340,161	779,493	34,884	146,851	1,075	5,333	4,678,431	56.2

<sup>1</sup> Includes flotation, amalgamation, cyanidation, and other types of reduction plants.

<sup>2</sup> Includes data for 2 milling enterprises for silver.

## TIME IN OPERATION

Days per week in operation (Table 14).—The classification of an enterprise for this table is based upon the number of days per week for wage earners most representative of operations for the year as a whole and does not take into account those variations in weekly operations due to market changes or other factors. Enterprises in which the 6-day week prevailed employed 56.9 per cent of the total number of wage

earners, and accounted for 49.8 per cent of the total value of products of the metal-mining enterprises covered by this table, while those operating on the 7-day basis employed 38.9 per cent of wage earners and produced 46 per cent of the total value of products. Enterprises operating six and one-half days accounted for practically all of the remaining wage earners and value of products.

TABLE 14.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO NUMBER OF DAYS IN OPERATION PER WEEK, BY INDUSTRIES: 1929

[This table does not include data for 172 enterprises whose value of product was less than \$20,000. Such enterprises were permitted to report on an abbreviated schedule, which did not call for information pertaining to time in operation. These enterprises (with total value of products, \$1,205,022) were distributed as follows: Copper, 42 (\$287,334); lead, 35 (\$236,221); zinc, 10 (\$36,703); gold, lode, 60 (\$430,115); silver, 17 (\$129,349); gold, placer, 8 (\$35,300)]

INDUSTRY AND DAYS PER WEEK	Number of enterprises	Number of mines	Wage earners, December 14 or nearest representative day <sup>1</sup>	Wages	Value of products	INDUSTRY AND DAYS PER WEEK	Number of enterprises	Number of mines	Wage earners, December 14 or nearest representative day <sup>1</sup>	Wages	Value of products		
Metal-mining industries, total <sup>2</sup>	547	678	78,934	\$125,254,413	\$424,026,833	Zinc, total <sup>2</sup>	138	104	12,757	\$16,237,378	\$44,770,323		
Not reported	1	1				Five	1	1	\$ 424	475,215	1,777,091		
Three or under	1	1			Five and one-half	1	4						
Four	2	2	} * 354	382,376	1,315,792	Six and one-half	1	1					
Five	1	1						Six	105	163	8,962	11,105,925	31,527,736
Five and one-half	2	5			Seven	30	35	3,371	4,656,238	11,473,506			
Six	275	369	44,917	68,053,720	211,486,515	Gold, lode, total <sup>2</sup>	114	124	5,492	8,330,052	17,220,059		
Six and one-half	17	20	2,025	5,142,256	14,606,343	Three or under	1	1	} * 74	121,166	131,808		
Seven	248	279	30,738	51,676,061	195,218,183	Five and one-half	1	1					
Copper, total <sup>2</sup>	101	138	43,162	72,917,249	283,230,030	Six and one-half	2	2					
Four	1	1	} * 750	1,403,049	7,483,334	Six	50	54	2,457	3,624,920	5,850,853		
Six and one-half	4	5						Seven	60	66	2,061	4,592,966	11,237,398
Six	46	77				25,499	41,105,039	132,338,196	Silver, total <sup>2</sup>	50	57	2,592	4,125,103
Seven	50	55	16,916	30,407,961	143,408,509	Six	12	14	} * 504	1,064,685	2,083,646		
Lead, total <sup>2</sup>	120	136	14,380	22,706,576	67,325,557	Six and one-half	2	2					
Not reported	1	1				Seven	36	41				1,998	3,060,478
Four	1	1	} * 7,888	12,045,578	41,220,028	Gold, placer, total <sup>2</sup>	24	20	601	928,995	3,743,941		
Six	58	67						Six	4	4	33	37,125	66,405
Six and one-half	8	10				1,518	2,594,450	6,018,753	Seven	20	25	568	891,870
Seven	52	57	4,924	8,030,548	10,176,876								

<sup>1</sup> Figures differ from those for "Wage earners (average for the year)," given in certain other tables of this report. See GENERAL EXPLANATIONS—Persons Engaged.

<sup>2</sup> See headnote.

<sup>3</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

Days per year in operation (Table 15).—Compared with enterprises in other mining industries canvassed by the census, metal mines operated on the whole for a considerably larger part of the year. Operating time of 300 days and over prevailed in 61.2 per cent of metal-mining enterprises covered by this table, and these accounted for 84.1 per cent of the total number

of wage earners and 90.9 per cent of the total value of products. Moreover, 42.3 per cent of the value of products of these industries came from enterprises which were in operation 350 days or more, indicating practically maximum year-round operating time for large portions of these industries.



Central-administrative-office employees (Table 17).—This table was compiled from data reported separately on special schedules and not included in the returns for the operating enterprises. It gives the number of employees reported by offices maintained independently of mine offices and usually at a distance from the mining operations, as in New York City or Boston. Figures for these employees are

included only in this table. In the cases of companies whose operations include smelting and refining as well as mining, the data for central-administrative-office employees have been omitted from this table, and included in the statistics for the census of manufactures—in other words, attributed to the final producing activities of such companies.

TABLE 17.—CENTRAL-ADMINISTRATIVE-OFFICE EMPLOYEES—NUMBER, BY SEX, AND SALARIES, FOR THE UNITED STATES: 1929

CLASS	NUMBER			Salaries
	Total	Male	Female	
Total.....	301	243	58	\$1, 598, 498
Principal salaried officers of corporations.....	54	53	1	853, 020
Other central-administrative-office employees.....	247	190	57	745, 478

Size of enterprises according to number of wage earners (Table 18).—Of the 708 enterprises covered by this table, 497, or 70.2 per cent, employing 50 or fewer wage earners, accounted for only 8.3 per cent of the total number, and contributed only 4.7 per cent of the

total value of products. Conversely, the largest 17 enterprises which operated 43 mines accounted for 45.9 per cent of all wage earners and contributed 57.8 per cent of the total value of products.

TABLE 18.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO NUMBER OF WAGE EARNERS, BY INDUSTRIES: 1929

INDUSTRY AND NUMBER OF WAGE EARNERS PER ENTERPRISE	Number of enterprises	Number of mines	Wage earners (average for the year)		Wages	Value of products	INDUSTRY AND NUMBER OF WAGE EARNERS PER ENTERPRISE	Number of enterprises	Number of mines	Wage earners (average for the year)		Wages	Value of products
			Number	Per cent of total						Number	Per cent of total		
Metal-mining industries, total.....	708	839	78, 033	100.0	\$129, 343, 793	\$425, 784, 812	Zinc, total.....	148	204	11, 900	100.0	\$10, 274, 339	\$44, 860, 020
Not reported.....	0	6				10, 583	1 to 5.....	18	19	60	0.5	59, 558	164, 158
1 to 5.....	179	184	527	0.7	635, 233	1, 551, 125	6 to 20.....	32	35	415	3.5	551, 590	1, 399, 311
6 to 20.....	212	226	2, 608	3.2	3, 542, 009	6, 984, 773	21 to 50.....	29	31	969	8.1	1, 331, 994	4, 041, 409
21 to 50.....	109	117	3, 446	4.4	5, 175, 084	11, 321, 283	51 to 100.....	42	40	2, 983	25.1	3, 997, 911	12, 454, 427
51 to 100.....	89	96	6, 352	8.0	9, 239, 243	24, 048, 420	101 to 250.....	18	36	2, 739	23.0	3, 702, 339	10, 412, 038
101 to 250.....	58	88	9, 280	11.8	14, 212, 196	32, 898, 153	251 to 500.....	6	33	2, 176	18.3	2, 044, 050	7, 756, 292
251 to 500.....	27	61	10, 264	13.0	16, 157, 328	48, 467, 947	501 to 1,000.....	2	2				
501 to 1,000.....	14	18	10, 301	13.1	17, 080, 116	54, 384, 202	1,001 to 2,500.....	1	2				
1,001 to 2,500.....	14	19											
2,501 and over.....	9	24	30, 255	45.9	60, 302, 204	246, 111, 317	Gold, lode, total.....	169	179	5, 353	100.0	8, 655, 505	17, 626, 574
Copper, total.....	143	180	44, 502	100.0	73, 199, 785	283, 517, 373	Not reported.....	3	3				10, 016
Not reported.....	2	2				239, 070	1 to 5.....	60	69	188	3.4	233, 423	603, 002
1 to 5.....	33	33	104	0.2	125, 553	239, 070	6 to 20.....	62	67	678	12.6	948, 047	1, 635, 478
6 to 20.....	40	41	496	1.1	695, 767	1, 409, 286	21 to 50.....	15	15	496	9.3	825, 020	1, 520, 070
21 to 50.....	14	17	308	0.9	478, 095	839, 618	51 to 100.....	13	13	894	16.7	1, 490, 005	2, 329, 462
51 to 100.....	12	13	877	2.0	1, 180, 777	2, 149, 213	101 to 250.....	8	10				
101 to 250.....	11	13	1, 859	4.2	3, 094, 149	5, 740, 068	251 to 500.....	1	1				
251 to 500.....	10	15	3, 393	7.6	5, 413, 749	19, 844, 290	1,001 to 2,500.....	1	1				
501 to 1,000.....	7	9	5, 090	11.5	8, 277, 033	28, 384, 809	Silver, total.....	60	73	2, 593	100.0	4, 326, 710	8, 453, 782
1,001 to 2,500.....	11	13					Not reported.....	1	1				148, 907
2,501 and over.....	3	24	32, 279	72.5	53, 934, 062	224, 913, 119	1 to 5.....	13	15	46	1.8	61, 566	946, 783
Lead, total.....	150	160	14, 007	100.0	22, 917, 435	67, 641, 816	6 to 20.....	23	24	264	11.3	422, 022	1, 132, 122
Not reported.....	26	38				256, 181	21 to 50.....	16	10	511	19.7	878, 760	1, 863, 708
1 to 5.....	38	42	435	3.1	618, 810	858, 923	51 to 100.....	6	7	454	17.5	828, 920	4, 362, 262
6 to 20.....	32	32	990	7.1	1, 528, 295	3, 284, 171	101 to 250.....	6	6				
21 to 50.....	16	17	1, 144	8.2	1, 746, 630	5, 251, 619	251 to 500.....	1	1				
51 to 100.....	13	16	2, 170	15.5	3, 356, 852	7, 862, 014	Gold, placer, total.....	32	37	578	100.0	970, 010	3, 770, 241
101 to 250.....	9	11	3, 786	27.0	6, 526, 132	18, 005, 058	Not reported.....	10	10	31	5.4	37, 055	91, 774
251 to 500.....	5	7					1 to 5.....	17	17	192	33.2	305, 561	734, 937
501 to 1,000.....	1	3	5, 379	38.4	9, 022, 632	32, 023, 845	6 to 20.....	3	3				
1,001 to 2,500.....	1	3					21 to 50.....	2	7				
							101 to 250.....	2					

1 Exclusive of 11 enterprises employing no wage earners in industries as follows: Lead, 5; gold, lode, 5; silver, 1  
 2 Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

Prevailing hours of labor (Table 19).—For the metal-mining industries as a whole, approximately one-half of the wage earners were employed in enterprises in which the prevailing hours per week were 48, while

most of the remainder were reported by enterprises whose working hours were 54 or more. (See Table 14, Days per week in operation.)

TABLE 19.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO PREVAILING HOURS OF LABOR PER WEEK, BY INDUSTRIES: 1929

[This table does not include data for 172 enterprises whose value of product was less than \$20,000. Such enterprises were permitted to report on an abbreviated schedule, which did not call for information pertaining to prevailing hours of labor. These enterprises (with total value of products, \$1,205,022) were distributed as follows: Copper, 42 (\$287,334); lead, 35 (\$236,221); zinc, 10 (\$86,703); gold, lode, 60 (\$430,115); silver, 17 (\$129,349); gold, placer, 8 (\$35,300). Also, data for 2 enterprises (lead, 1; gold, lode, 1) employing no wage earners are not included in this table.]

INDUSTRY AND PREVAILING HOURS OF LABOR PER WEEK	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	Value of products	INDUSTRY AND PREVAILING HOURS OF LABOR PER WEEK	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	Value of products			
Metal-mining industries, total <sup>1</sup>	545	676	77,990	\$125,254,413	\$424,617,055	Zinc, total <sup>1</sup>	138	194	11,861	\$16,237,373	\$44,770,323			
Under 25.....	2	2	} 23	22,876	76,953	36 and over but under 40.....	1	1	} 2,550	811,092	2,453,593			
25 and over but under 36.....	3	3				Over 40 but under 44.....	1	1						
36 and over but under 40.....	1	1				44 and over but under 48.....	1	4						
Over 40 but under 44.....	1	1	} 287	405,064	1,401,340	Over 48 but under 54.....	3	3	} 5,897	8,061,673	21,984,948			
44 and over but under 48.....	2	0				48.....	66	96						
48.....	217	291				39,019	60,997,686	186,293,729				54 and over but under 63.....	58	81
Over 48 but under 54.....	26	27	3,790	6,360,815	22,770,657	63 and over.....	8	8	102	152,722	593,241			
54 and over but under 63.....	279	329	33,753	55,555,191	210,296,430	Gold, lode, total <sup>1</sup>	113	123	5,079	8,339,052	17,215,743			
63 and over.....	14	16	1,118	1,913,281	3,777,946	Under 25.....	1	1	} 21,971	3,173,386	5,155,841			
Copper, total <sup>1</sup>	101	138	44,234	72,917,249	283,230,039	48.....	47	51				} 326	576,456	812,063
25 and over but under 36.....	1	1	} 1,255	2,048,932	10,638,168	Over 48 but under 54.....	5	5						
44 and over but under 48.....	1	2				54 and over but under 63.....	59	65						
Over 48 but under 54.....	6	7				63 and over.....	1	1						
48.....	41	70	24,416	39,845,127	122,960,811	Silver, total <sup>1</sup>	50	57	2,461	4,125,163	8,327,914			
54 and over but under 63.....	52	53	18,593	31,523,190	149,631,060	Under 25.....	1	1	} 290	139,013	492,545			
Lead, total <sup>1</sup>	119	135	13,831	22,706,576	67,320,095	48.....	11	13				} 2,361	3,986,150	7,835,309
25 and over but under 36.....	1	1	} 6,634	10,256,797	35,682,472	54 and over but under 63.....	36	41						
48.....	49	58				63 and over.....	2	2						
Over 48 but under 54.....	11	11				1,041	3,322,462	10,269,628	Gold, placer, total <sup>1</sup>	24	29	534	928,995	3,743,941
54 and over but under 63.....	55	60	4,793	8,296,930	19,777,391	25 and over but under 36.....	1	1	} 239	51,003	92,010			
63 and over.....	3	5	463	830,387	1,590,604	48.....	3	3				} 495	877,992	3,651,331
						Over 48 but under 54.....	1	1						
						54 and over but under 63.....	19	24						

<sup>1</sup> See headnote.  
<sup>2</sup> Combined to avoid disclosing, exactly or approximately, the data for individual enterprises.

Wage earners employed, by months (Tables 20 and 21).—Table 20 gives statistics for wage earners employed below ground and on the surface. (See headnote, Table 20.) For all metal-mining enterprises reporting these data, underground mines employed 88.5 per cent of the total number of wage earners. Of these, 69.9 per cent were employed underground, and

30.1 per cent on the surface in mills, etc. Employment during the year was somewhat more regular for underground mines than for surface operations, as indicated in the percentages of minimum to maximum figures of employment. Table 21 reflects in a general way the activity in the several industries during the year for the principal metal-mining States.



## MINES AND QUARRIES

TABLE 20.—WAGE EARNERS, BY MONTHS, FOR UNDERGROUND MINES, EMPLOYED BELOW GROUND AND ON THE SURFACE, AND FOR OTHER MINES, BY INDUSTRIES: 1929

[This table does not include data for 172 enterprises whose value of product was less than \$20,000. Such enterprises were permitted to report on an abbreviated schedule, which did not call for information as to kind of operation or below-ground and surface employees. These enterprises employed a total of 943 wage earners. Also data for 2 enterprises (lead, 1; gold, 1) employing no wage earners are not included in the table. The month of maximum employment is indicated by bold-faced figures and that of minimum employment by italic figures]

INDUSTRY AND CLASS OF MINE AND WAGE EARNER	Number of enterprises	Number of mines <sup>1</sup>	Average number employed during year	NUMBER EMPLOYED ON 15TH DAY OF MONTH OR NEAREST REPRESENTATIVE DAY												Per cent minimum is of maximum
				January	February	March	April	May	June	July	August	September	October	November	December	
Metal-mining industries, total <sup>1</sup>	545	670	77,990	74,524	75,655	78,575	80,733	80,537	79,505	79,151	78,506	77,537	78,900	78,471	<i>73,783</i>	91.4
Underground mines, total	479	602	69,013	<i>65,972</i>	66,633	69,421	71,174	70,765	69,882	69,817	69,502	68,883	70,139	69,939	66,034	92.7
Below ground			48,241	46,240	47,100	49,394	50,494	49,527	48,600	48,336	48,126	47,333	48,855	49,000	<i>45,764</i>	90.6
Surface			20,772	19,732	19,533	20,027	20,680	21,238	21,222	21,481	21,376	21,500	21,284	20,939	20,270	90.0
Other mines <sup>1</sup>	66	74	8,977	8,552	9,022	9,154	9,559	9,772	9,623	9,334	9,004	8,654	8,761	8,532	<i>7,749</i>	79.3
Copper, total	101	138	44,234	<i>42,107</i>	43,655	45,325	46,560	46,592	44,637	44,446	43,508	42,933	44,188	44,056	42,200	90.4
Underground mines, total	94	130	36,425	<i>34,496</i>	35,620	37,212	38,190	38,003	36,235	36,357	35,793	35,571	36,706	37,343	35,574	90.3
Below ground			25,313	<i>24,086</i>	25,233	26,550	27,104	26,457	24,962	24,852	24,484	24,119	25,351	26,140	24,417	88.0
Surface			11,112	10,410	10,387	10,662	11,086	11,546	11,273	11,505	11,309	11,452	11,355	11,203	11,157	90.6
Other mines	7	8	7,809	7,611	8,035	8,113	8,370	8,579	8,402	8,089	7,715	7,362	7,482	7,313	<i>6,086</i>	77.2
Lead, total	110	135	13,331	13,649	<i>12,310</i>	13,524	13,615	13,702	14,027	14,050	14,194	14,094	13,925	14,077	13,810	93.8
Underground mines, total	112	128	13,000	13,534	<i>12,163</i>	13,372	13,459	13,543	13,871	13,932	14,070	13,950	13,780	13,936	13,673	93.6
Below ground			9,259	9,214	<i>8,670</i>	9,139	9,226	9,206	9,337	9,329	9,448	9,263	9,243	9,366	9,300	95.0
Surface			4,431	4,320	4,184	4,185	4,233	4,337	4,534	4,603	4,622	4,687	4,537	4,570	4,364	86.2
Other mines	7	7	141	115	147	162	156	159	166	118	124	144	145	141	137	72.3
Zinc, total	138	194	11,861	11,014	10,913	11,911	12,501	12,155	12,549	12,238	12,572	12,347	12,554	11,700	<i>9,326</i>	78.2
Underground mines, total	119	173	11,524	10,791	10,666	11,631	12,194	11,824	12,223	11,888	12,151	11,944	12,142	11,324	<i>9,506</i>	77.8
Below ground			8,439	7,852	7,777	8,549	8,938	8,638	9,038	8,732	8,917	8,736	8,927	8,266	<i>6,844</i>	75.7
Surface			3,085	2,939	2,889	3,082	3,206	3,186	3,185	3,156	3,234	3,208	3,215	3,058	<i>2,662</i>	82.3
Other mines	19	21	337	223	247	280	307	331	320	400	421	403	412	376	320	53.0
Gold, lode, total	113	123	5,070	4,864	<i>4,346</i>	4,924	5,058	5,133	5,218	5,280	5,188	5,120	5,163	5,066	5,108	92.1
Underground mines, total	106	116	4,952	4,769	<i>4,263</i>	4,823	4,950	5,003	5,071	5,133	5,036	4,958	5,021	4,920	4,939	92.0
Below ground			3,406	3,270	3,272	3,312	3,337	3,436	3,458	3,523	3,435	3,407	3,467	3,418	3,484	92.8
Surface			1,546	1,490	<i>1,481</i>	1,511	1,503	1,507	1,613	1,610	1,601	1,551	1,554	1,502	1,505	91.8
Other mines	7	7	127	95	93	101	108	130	147	127	152	162	142	146	119	57.4
Silver, total	50	57	2,451	2,382	2,431	2,383	2,411	2,422	2,530	2,555	2,502	2,510	2,540	2,436	<i>2,306</i>	90.3
Underground mines, total	48	55	2,422	2,382	2,431	2,383	2,381	2,392	2,482	2,507	2,452	2,460	2,490	2,410	<i>2,292</i>	91.4
Below ground			1,824	1,818	1,839	1,794	1,789	1,790	1,865	1,900	1,842	1,858	1,867	1,810	<i>1,710</i>	90.0
Surface			598	<i>564</i>	592	589	592	602	617	607	610	602	623	606	582	90.5
Other mines	2	2	20				30	30	48	48	50	50	50	20	14	28.0
Gold, placer, total	24	20	534	508	<i>500</i>	508	579	543	544	552	542	533	530	536	533	86.4

<sup>1</sup> Includes data for placer mines and for 30 enterprises operating as custom mills, and on dumps and old tailings.

# GOLD, SILVER, COPPER, LEAD, AND ZINC

309

**TABLE 21.—WAGE EARNERS, BY MONTHS, BY INDUSTRIES AND STATES: 1929**  
 [The month of maximum employment is indicated by bold-faced figures and that of minimum employment by *italic* figures]

INDUSTRY AND STATE	Average number employed during year	NUMBER EMPLOYED ON 15TH DAY OF MONTH OR NEAREST REPRESENTATIVE DAY												Per cent minimum is of maximum
		January	February	March	April	May	June	July	August	September	October	November	December	
United States, total.....	78,933	75,467	76,598	76,518	<b>81,878</b>	81,480	80,448	80,094	79,449	78,480	79,843	79,414	<i>74,728</i>	91.5
Copper.....	44,502	<i>42,875</i>	43,923	45,593	46,837	46,850	44,905	44,714	43,776	43,201	44,456	44,024	42,408	90.4
Lead.....	14,007	13,825	<i>13,488</i>	13,700	13,791	13,878	14,203	14,226	14,370	14,270	14,101	14,253	13,980	93.8
Zinc.....	11,900	11,053	10,952	11,650	12,540	12,194	12,588	12,327	12,011	12,880	12,593	11,739	9,866	78.2
Gold, lode.....	5,353	5,138	<i>5,120</i>	5,108	5,332	5,407	5,492	5,634	5,402	5,394	5,437	5,540	5,882	92.5
Silver.....	2,503	2,524	2,573	2,525	2,553	2,564	2,672	2,687	2,644	2,652	2,682	2,578	2,448	90.8
Gold, placer.....	578	552	<i>544</i>	552	623	587	588	596	580	577	574	570	577	87.3
<b>COPPER</b>														
Arizona.....	15,564	<i>14,018</i>	14,851	15,446	16,030	16,112	16,082	16,141	15,839	15,405	15,887	15,720	15,240	86.8
California.....	994	785	<i>749</i>	770	810	879	974	1,083	1,134	1,140	1,101	1,193	1,234	60.7
Colorado.....	513	495	478	492	472	490	480	494	461	467	537	650	640	69.4
Idaho.....	163	161	163	178	170	158	142	159	153	160	170	174	167	80.7
Michigan.....	7,834	<i>7,483</i>	7,510	7,700	7,746	7,737	7,747	7,789	7,909	7,987	8,180	8,169	8,033	91.4
Montana.....	10,508	10,309	10,893	11,348	11,742	11,789	10,210	10,046	9,692	9,802	10,043	10,752	<i>9,484</i>	80.6
Nevada.....	2,698	2,916	2,948	3,002	3,214	3,009	2,759	2,583	2,394	2,394	2,546	2,422	<i>2,213</i>	85.9
New Mexico.....	2,258	2,209	2,269	2,388	2,242	2,269	2,238	2,300	2,339	2,253	2,254	2,257	2,257	87.1
Utah.....	3,160	3,245	3,378	3,508	3,601	3,602	3,476	3,268	2,970	2,779	2,855	2,662	<i>2,471</i>	67.5
Other States.....	810	756	<i>684</i>	745	744	759	788	871	880	814	833	925	900	73.0
<b>LEAD</b>														
Arizona.....	309	246	<i>149</i>	146	224	228	320	326	355	386	412	446	482	29.5
Colorado.....	733	737	773	738	770	758	752	741	708	729	731	697	<i>668</i>	86.4
Idaho.....	3,189	3,325	3,089	3,208	3,187	3,233	3,309	3,320	3,348	3,187	<i>2,977</i>	3,067	3,013	89.0
Kansas.....	282	356	357	352	359	278	266	303	292	275	217	213	<i>182</i>	34.0
Missouri.....	3,773	3,643	<i>3,624</i>	3,673	3,732	3,798	3,813	3,857	3,866	3,921	3,875	3,810	3,664	92.4
Montana.....	379	354	340	356	360	367	361	394	404	407	390	403	398	82.6
Nevada.....	85	80	<i>80</i>	91	79	79	84	82	85	87	88	88	88	88.5
New Mexico.....	390	387	390	392	383	391	381	457	461	379	470	443	<i>250</i>	53.2
Oklahoma.....	4,083	3,924	<i>3,913</i>	4,011	3,933	4,062	4,077	3,964	4,082	4,120	4,141	4,272	4,493	87.2
Utah.....	514	550	543	531	533	532	531	486	481	483	495	494	502	87.5
Other States.....														
<b>ZINC</b>														
Colorado.....	238	<i>165</i>	227	251	253	255	254	241	241	251	235	235	235	64.5
Idaho.....	459	<i>314</i>	328	392	474	469	521	500	499	460	531	509	503	59.1
Kansas.....	2,428	2,198	2,303	2,590	2,569	2,500	2,680	2,496	2,657	2,548	2,535	2,429	<i>1,638</i>	61.1
Missouri.....	266	269	250	252	251	226	238	238	216	201	347	343	284	62.2
New Mexico.....	1,036	995	<i>976</i>	1,030	1,015	1,041	1,029	1,049	1,024	1,048	1,098	1,097	1,029	88.9
Oklahoma.....	4,117	3,899	3,670	4,198	4,668	4,338	4,427	4,300	4,412	4,210	4,290	3,960	<i>3,039</i>	66.2
Wisconsin.....	284	279	282	253	271	284	311	327	327	327	290	<i>249</i>	251	76.1
Montana and Nevada.....	1,111	1,012	1,009	1,032	1,068	1,137	1,224	1,190	1,221	1,274	1,279	943	<i>910</i>	71.1
Other States.....	1,961	1,922	<i>1,607</i>	1,952	1,961	1,949	1,932	1,989	2,014	1,968	1,988	1,974	1,976	94.7
<b>GOLD, LODE</b>														
Arizona.....	127	87	91	111	127	135	154	178	164	113	110	122	132	48.9
California.....	1,627	1,550	<i>1,418</i>	1,508	1,611	1,587	1,604	1,623	1,624	1,608	1,706	1,755	1,696	86.5
Colorado.....	1,497	1,441	1,445	1,466	1,490	1,520	1,517	1,553	1,568	1,511	1,545	<i>1,416</i>	1,485	90.6
Montana.....	196	155	155	<i>114</i>	164	190	213	224	215	231	245	236	210	46.5
Nevada.....	363	361	379	396	395	427	431	392	308	311	313	306	<i>304</i>	70.5
South Dakota.....	1,304	1,295	1,320	1,312	1,299	<i>1,291</i>	1,309	1,310	1,318	1,295	1,300	1,294	1,290	97.8
Other States.....	239	<i>210</i>	212	231	237	251	264	254	270	265	218	211	256	77.8
<b>SILVER</b>														
California.....	64	84	43	43	38	<i>35</i>	41	42	57	68	113	121	113	27.3
Colorado.....	152	142	143	134	163	174	184	189	153	156	157	136	<i>99</i>	52.4
Montana.....	202	329	300	299	<i>287</i>	232	272	284	286	342	358	261	288	63.4
Nevada.....	610	659	662	655	658	636	652	669	628	664	551	521	<i>461</i>	68.9
Utah.....	939	873	910	902	918	925	989	983	980	975	948	941	912	88.4
Other States.....	530	<i>482</i>	515	492	549	564	534	520	540	622	555	568	575	83.8
<b>GOLD, PLACER</b>														
California.....	491	491	488	491	517	471	<i>469</i>	490	506	500	492	486	497	90.7
Oregon.....	41	27	25	<i>24</i>	53	54	57	55	48	46	27	38	33	42.1
Other States.....	40	34	<i>31</i>	37	53	62	62	51	32	31	55	50	47	50.0

## MINES AND QUARRIES

## GENERAL TABLES

Tables 22 and 23 present in detail, for 1929, statistics relating to the metal-mining industries for the United States as a whole and for each State for which separate figures can be given without disclosing, exactly or approximately, the data reported by individual enterprises.

TABLE 22.—CONSUMPTION OF FUEL AND ELECTRIC ENERGY, BY INDUSTRIES, BY STATES: 1929

INDUSTRY AND STATE	FUEL AND ELECTRIC ENERGY CONSUMED							
	Fuel					Electric energy		
	Coal		Coke, tons (2,000 pounds)	Fuel oils, gallons	Gasoline and kerosene, gallons	Gas, natural, M cubic feet	Purchased, kilo- watt-hours	Generated by enterprises reporting, kilo- watt-hours
Anthracite, tons (2,240 pounds)	Bituminous, tons (2,000 pounds)							
United States, total.....	64,699	1,309,081	8,482	94,272,872	1,048,600	922,806	1,566,654,575	904,232,018
Copper.....	134	1,008,321	7,859	89,613,817	421,317		758,119,336	734,614,117
Lead.....	4,706	131,059	382	970,606	108,402	132,344	447,702,056	50,718,102
Zinc.....	59,788	46,859	15	2,021,425	261,701	784,188	196,948,992	54,746,006
Gold, lode.....	5	119,278	208	505,067	135,738	6,279	52,427,001	56,636,628
Silver.....	11	5,424	18	1,161,157	117,261		42,838,382	7,302,055
Gold, placer.....		140			4,250		67,617,908	216,000
<b>COPPER</b>								
Arizona.....	77	3,587	357	86,742,061	179,635		129,638,797	447,750,597
California.....				403,155	27,044		28,509,637	685,750
Colorado.....		5,825	12	83,375	1,557		3,196,400	
Idaho.....		7,873	150	42,000			3,080,000	70,000
Michigan.....		559,783	2,360	170,945	75,743		11,841,254	132,274,897
Montana.....		78,220	11				259,332,810	931,120
Nevada.....	7	110,560	847	487,145	15,510		8,487,210	70,281,100
New Mexico.....		180,326		1,419,154	36,635		560,243	82,640,653
Utah.....		51,423	4,115	246,632	57,060		294,844,338	
Other States.....	50	9,513	1	19,350	25,133		16,628,747	
<b>LEAD</b>								
Arizona.....				322,113	1,706			3,109,200
Colorado.....		2,853			3,140		10,185,921	420,960
Idaho.....		11,886	143	175,726	10,652		102,690,377	6,362,561
Kansas.....		95			15,000	67,872	2,594,116	
Missouri.....		91,249	80	15,740	4,123		168,645,516	40,825,381
Montana.....	20	12	11	197,469	6,634		6,651,468	
Nevada.....		248		190,767	24,623		3,756,260	
New Mexico.....				8,000			12,220	
Oklahoma.....		272			6,870	64,472	4,215,163	
Utah.....	27	23,044	142	89,791	20,554		120,507,243	
Other States.....	4,719	1,300		990	2,830		16,556,002	
<b>ZINC</b>								
Colorado.....		1,413		2,450			6,886,000	
Idaho.....		370	15				10,150,258	2,618,560
Kansas.....	342	1,553		48,007	37,915	233,700	47,804,970	
Missouri.....		2,595		12,000	3,500	4,764	3,604,303	
New Mexico.....		12,123		375,203	2,975		3,004,700	14,469,423
Oklahoma.....		6,640		1,352,019	110,922	545,710	68,785,878	16,298,500
Wisconsin.....		1,011			8,430		7,128,920	
Montana and Nevada.....		11,261		15,000			24,296,852	220,500
Other States.....	59,441	9,893		215,846	97,959		23,787,105	21,173,023
<b>GOLD, LODE</b>								
Arizona.....				64,481	1,165		1,470,700	265,500
California.....	5	101		100,808	59,994		26,037,318	424,480
Colorado.....		74,396	51	34,367	17,822		13,080,458	8,710,870
Montana.....		190	24		3,910		3,206,750	
Nevada.....		117		131,620	16,892		6,099,240	872,878
South Dakota.....		42,930	133	107,506	37,970	6,279		45,822,900
Other States.....		1,538		6,825	6,985		2,523,375	540,000
<b>SILVER</b>								
California.....				29,154	2,558		677,165	
Colorado.....		155			9,596		1,288,004	
Montana.....		935		327	16,393		7,058,779	
Nevada.....		708		602,808	19,494		21,572,818	5,259,494
Utah.....	11	3,529	18	3,500	426		8,017,716	
Other States.....		97		525,368	68,800		3,623,900	2,042,571
<b>GOLD, PLACER</b>								
California.....							64,317,873	
Oregon.....		65			1,000		2,491,475	216,000
Other States.....		75			3,250		808,560	

TABLE 23.—DETAILED STATISTICS FOR THE METAL-MINING INDUSTRIES, BY STATES: 1929

[This table presents statistics for each State for which it is possible to give separate figures without disclosing data for individual enterprises. Certain of the "Other States" (shown in *italics* in the footnotes to the table), however, were of greater importance in the industries than some of the States shown separately]

INDUSTRY AND STATE	Number of enterprises	Number of mines <sup>1</sup>	PERSONS ENGAGED IN THE INDUSTRY					PRINCIPAL EXPENSES OF OPERATION AND DEVELOPMENT							
			Total (all classes)	Proprietors and firm members	Principal salaried officers of corporations <sup>2</sup>	Other salaried officers and employees <sup>3</sup>	Wage earners (average for the year)	Total	Salaries and wages			Contract work	Cost of supplies, fuel, and purchased electric energy		
									Principal officers of corporations <sup>3</sup>	Other salaried officers and employees <sup>2</sup>	Wage earners		Supplies	Fuel	Purchased electric energy
<b>United States, total.</b>	<b>4 719</b>	<b>850</b>	<b>85,255</b>	<b>280</b>	<b>346</b>	<b>5,600</b>	<b>78,933</b>	<b>\$242,695,304</b>	<b>\$1,539,208</b>	<b>\$15,649,076</b>	<b>\$126,343,703</b>	<b>\$4,944,297</b>	<b>\$68,882,558</b>	<b>\$11,305,357</b>	<b>\$14,051,015</b>
<b>COPPER</b>															
Arizona	63	08	17,009	42	10	1,893	15,564	54,362,716	69,900	3,753,126	26,947,217	1,129,548	16,919,123	4,055,402	1,488,400
California	10	11	1,067	4	4	65	994	3,283,660	17,850	138,798	1,756,846		1,106,824	26,310	237,032
Colorado	3	4	562			49	513	1,471,422		116,420	774,844	97,274	814,080	37,112	131,692
Idaho	4	4	178	4	4	7	163	534,838	11,325	22,575	279,307	48,518	126,400	39,732	6,931
Michigan	9	18	8,313		19	460	7,834	18,360,389	148,278	1,081,823	9,838,442	32,962	4,692,488	2,397,922	168,474
Montana <sup>4</sup>	7	26	11,061	3	5	545	10,508	28,818,548	24,483	2,327,790	18,731,854	15,765	5,656,941	346,410	1,415,315
Nevada	13	13	2,994	8	10	278	2,698	10,429,058	102,075	661,392	4,885,398	186,800	3,634,556	846,674	112,154
New Mexico	14	14	2,486	9	5	213	2,288	7,658,530	1,550	526,869	3,409,479	18,274	2,601,674	1,186,534	14,150
Utah	9	10	3,484	2	2	320	3,160	18,105,053	1,500	947,064	5,455,417	1,062,275	8,088,202	227,902	2,323,293
Other States <sup>5</sup>	11	12	890	4	3	73	810	2,138,914	6,000	177,536	1,120,981	3,493	655,107	46,004	129,793
<b>LEAD</b>															
Arizona	13	13	343	9		25	309	711,103		47,212	398,348	22,143	219,764	23,636	
Colorado	18	20	787	3	3	48	733	2,349,337	4,500	120,809	1,449,608	4,827	568,503	22,438	178,662
Idaho	28	32	3,360	7	16	154	3,189	6,682,249	90,372	381,280	5,787,889	65,166	2,531,180	104,822	701,540
Kansas	7	7	297	2	2	11	282	726,858	7,000	23,677	349,812	18,346	269,728	27,659	40,636
Missouri	13	15	4,173	0	11	383	3,773	11,500,947	36,703	947,480	5,909,659	47,157	2,874,206	306,579	1,679,103
Montana	10	17	418	10	7	22	379	1,118,659	5,842	61,392	656,643	23,249	1,17,328	15,345	48,419
Nevada	9	10	312	4	8	30	270	1,056,205	50,455	73,031	498,664	29,080	322,342	28,967	53,636
New Mexico	6	5	90	2		8	85	112,594		8,960	74,071	1,689	33,734	4,140	
Oklahoma	6	6	412	4		18	390	1,006,105	21,280	54,124	528,097	12,870	2,803,596	36,062	73,676
Utah	29	34	4,244	21	140	4,038	11,978,314	154,192	368,900	6,691,787	807,553	3,099,277	89,845	770,504	
Other States <sup>7</sup>	11	12	562	10		38	514	1,065,016		90,310	572,857		187,129	24,170	181,544
<b>ZINC</b>															
Colorado	9	10	263	8	2	15	238	646,627	4,200	40,275	365,137		140,440	7,903	88,672
Idaho	6	7	480			21	450	1,231,032		42,056	692,602	4,493	420,859	3,906	67,150
Kansas	30	45	2,583		25	110	2,428	6,132,446	95,310	316,059	3,140,236	119,936	1,685,967	107,604	667,274
Missouri	11	14	281	2	1	12	266	556,265	2,800	28,255	323,175	8,356	323,326	18,882	63,461
New Mexico	8	9	1,101		1	64	1,036	2,663,348	1,800	101,093	1,429,239	96,919	782,911	64,043	67,543
Oklahoma	57	87	4,372	7	36	212	4,117	10,936,453	264,973	546,276	5,509,272	229,213	3,248,176	317,021	831,517
Wisconsin	9	9	317	4	5	24	284	802,233	10,700	43,874	303,961	24,252	202,521	5,817	161,103
Montana and Nevada	8	8	1,182	3	1	67	1,111	2,962,634	500	212,582	1,932,044	649	586,047	48,899	181,913
Other States <sup>8</sup>	10	16	2,240	1	3	275	1,961	4,653,401	9,100	709,402	2,518,673	137,655	776,641	281,170	220,700
<b>GOLD, LOSE</b>															
Arizona	13	13	147	6	1	13	127	384,701	2,500	27,788	226,043	510	81,380	4,188	42,342
California	58	58	1,769	36	21	85	1,627	4,462,491	49,595	190,792	2,483,698	379,162	1,010,752	29,556	381,151
Colorado	44	53	1,651	6	31	117	1,497	4,451,838	67,250	260,357	2,413,321	103,271	996,078	231,326	315,235
Montana	9	9	217	3	4	14	196	477,824	12,830	35,393	270,931		124,008	2,698	31,666
Nevada	31	32	433	26	11	33	363	1,191,059	25,800	96,313	680,196		399,632	19,362	75,456
South Dakota <sup>9</sup>	2	2	1,388			34	1,304	4,036,128		305,247	2,269,107		1,315,877	148,897	
Other States <sup>10</sup>	17	17	290	12	3	26	239	720,146	10,200	56,272	407,314	18,206	184,537	12,154	36,464
<b>SILVER</b>															
California	3	3	78	4	5	9	64	197,995	14,600	13,860	100,550	2,650	45,450	4,663	15,822
Colorado	11	16	168	4	4	8	162	344,832	9,025	21,499	200,011	10,084	72,357	3,283	28,680
Montana	12	14	334	8	5	29	292	832,263	18,000	50,023	509,840	24,982	170,909	8,965	48,884
Nevada	14	14	681	4	16	51	610	2,351,969	63,650	178,052	1,124,830	95,019	554,884	58,510	279,144
Utah	11	11	989	4	10	36	939	2,418,280	50,296	78,174	1,623,994	6,235	556,430	12,061	87,216
Other States <sup>11</sup>	16	16	588	5	5	42	536	1,355,093	9,350	103,085	762,524		420,759	34,233	25,652
<b>GOLD, PLACER</b>															
California	22	27	580	14	16	59	491	2,185,865	65,510	172,141	839,212		547,903		560,769
Oregon	4	4	46		1	4	41	138,893	2,400	7,350	77,918	1,058	22,400	295	27,442
Other States <sup>12</sup>	6	6	60	4	5	5	46	102,663	8,200	4,240	52,880	660	19,870	1,128	15,697

See footnotes at end of table.

TABLE 23.—DETAILED STATISTICS FOR THE METAL-MINING INDUSTRIES, BY STATES: 1929—Continued

[See note at head of this table]

INDUSTRY AND STATE	Expenditures for development (included in principal expenses, thousands)	Value of products <sup>13</sup>	Machinery and other equipment purchased during the year (total cost)	PRIME MOVERS AND ELECTRIC MOTORS DRIVEN BY PURCHASED ENERGY										Electric motors driven by energy generated by enterprises reporting		Electric generators			
				Aggregate horsepower	Prime movers								Electric motors driven by purchased energy						
					Total horsepower of prime movers	Steam engines		Steam turbines		Internal-combustion engines		Water wheels and water turbines						Number	Horsepower
Number	Horsepower	Number	Horsepower	Number	Horsepower	Number	Horsepower	Number	Horsepower	Number	Horsepower	Number	Horsepower	Number	Horsepower	Number	Kilo-watts		
United States, total	\$36,040	\$425,831,856	\$18,703,191	1,178,580	4502,550	510	179,420	115	231,081	602	70,086	61	20,763	17,154	676,030	6,634	323,733	203	16230,678
Copper.....	22,151	283,517,373	13,038,523	701,791	300,863	326	156,039	94	189,123	142	19,726	8	1,375	8,038	334,928	4,726	270,205	108	173,765
Lead.....	5,606	67,561,778	1,903,966	194,380	38,234	43	7,618	9	19,330	84	7,813	12	3,467	4,370	156,146	411	16,422	27	20,703
Zinc.....	2,506	44,866,026	1,847,978	163,357	55,829	33	6,019	7	18,252	203	30,783	5	800	2,577	107,528	740	17,206	25	19,687
Gold, lode.....	3,739	17,650,174	1,084,523	69,829	31,486	80	7,886	4	4,870	63	4,309	31	14,721	1,119	38,343	614	22,211	24	14,472
Silver.....	1,902	8,457,263	423,704	28,943	9,549	12	1,169	1	100	50	8,080	1	200	627	19,394	183	2,664	16	2,021
Gold placer.....	76	3,779,241	359,497	20,280	589	16	389					4	200	423	19,691	5	25	3	80
<b>COPPER</b>																			
Arizona.....	9,087	113,980,541	6,948,534	192,753	148,801	64	28,327	17	104,943	100	15,031			1,176	43,952	2,740	165,164	58	98,295
California.....	473	4,748,996	65,351	14,293	540	1	100			4	40	1	400	308	13,753			1	400
Colorado.....	325	1,697,051	6,537	6,491	350	1	56			2	300			284	0,135				
Idaho.....	31	523,014	53,780	1,971	1,090	4	640			1	450			21	881	2	15	3	386
Michigan.....	2,413	20,683,859	713,520	131,593	122,227	163	85,237	18	36,990					227	9,360	908	52,795	26	28,560
Montana.....	2,799	50,154,473	503,281	144,895	6,625	8	6,625							1,262	138,270			1	100
Nevada.....	3,067	10,084,910	1,436,530	43,600	31,381	5	4,054	5	24,065	12	2,762	2	500	182	12,210	428	23,304	7	24,075
New Mexico.....	1,080	13,293,420	844,976	63,687	53,092	56	20,825	54	23,125	5	142			12	595	648	28,867	11	21,045
Utah.....	3,430	46,227,987	2,390,035	105,058	780	3	360			3	420			4,361	104,278				
Other States.....	446	3,223,122	120,979	7,450	1,971	21	915			15	581	5	475	205	5,479			1	4
<b>LEAD</b>																			
Arizona.....	201	770,543	114,612	1,917	1,917	1	22			15	1,805					37	672	5	775
California.....	377	2,946,136	159,273	6,851	931	6	302			1	225	2	404	157	5,920				
Idaho.....	791	17,400,861	650,257	55,836	5,987	1	200	2	2,000	9	724	10	3,063	1,675	49,849	75	1,200	6	1,235
Kansas.....	29	1,122,322	1,023	3,550	2,010					16	2,010			50	1,549				
Missouri.....	824	22,955,417	54,000	80,432	21,911	7	4,215	7	17,336	3	300			1,466	58,521	208	14,545	14	18,601
Montana.....	205	1,681,577	39,572	3,250	585	4	400			3	185			118	2,665				
Nevada.....	351	635,343	238,673	2,240	650	1	60			12	590			111	1,690	1	5	2	32
New Mexico.....	13	95,322	3,500	518	518	1	8			8	510								
Oklahoma.....	18	1,608,124	24,771	4,281	1,380	2	170			12	1,210			67	2,901				
Utah.....	2,693	17,240,862	601,019	30,178	1,642	9	1,639			2	12			667	28,530				
Other States.....	164	1,894,771	26,369	5,318	703	11	611			3	92			159	4,615				
<b>ZINC</b>																			
Colorado.....	125	906,538	8,746	4,069	55					1	15	1	40	27	4,014				
Idaho.....	210	1,240,562	44,542	3,743	750									64	2,093				
Kansas.....	258	9,912,331	337,470	33,840	3,414	6	600			82	7,814			048	25,420				
Missouri.....	34	638,031	81,225	4,460	1,700	10	801			11	969			45	2,690				
New Mexico.....	714	4,046,072	163,098	8,102	6,219					14	2,219			58	1,883	234	4,195	13	4,120
Oklahoma.....	344	15,513,953	552,467	67,558	19,220	2	190			126	19,030			979	33,333	177	4,466	3	4,800
Wisconsin.....	36	1,826,162	4,394											160	4,623				
Montana.....	477	3,379,142	60,138	16,004	810	7	625			4	185			288	15,194	7	55	4	132
Other States.....	308	6,898,235	694,998	31,032	18,601	8	3,803	6	14,252	25	536	1	10	308	12,461	322	8,490	5	10,635
<b>GOLD, LOBE</b>																			
Arizona.....	217	287,536	41,831	2,935	1,358	12	368			4	900			64	1,577	45	4,080	3	624
California.....	897	3,940,925	187,620	23,192	2,465	35	962	1	20	21	502	11	981	462	20,037	5	110	1	175
Colorado.....	278	4,057,060	640,720	11,414	3,015	7	1,150	1	1,250	3	150	6	465	350	8,399	163	4,693	8	1,348
Montana.....	1,401	443,806	40,409	2,015	437	2	15			7	422			64	1,578				
Nevada.....	90	1,588,698	23,900	5,620	1,733	17	669			18	1,044			116	3,887	12	300	2	400
South Dakota.....	433	6,591,144		21,530	21,530	4	4,350	2	3,600	3	1,080	9	12,500			381	15,733	7	11,400
Other States.....	423	761,005	198,037	3,213	948	3	72			7	101	5	775	63	2,265	8	295	3	625
<b>SILVER</b>																			
California.....	36	214,684	10,816	1,275	225					3	225			27	1,050				
Colorado.....	129	303,251	10,410	1,879	480	2	300	1	100	2	80			68	1,899				
Montana.....	284	1,030,622	36,642	3,611	115					8	115			97	3,496				
Nevada.....	387	1,863,346	183,304	14,826	5,550					15	5,356	1	200	337	9,270	40	1,085	5	850
Utah.....	982	3,305,740	97,331	2,511	215	4	215							62	2,296				
Other States.....	384	1,739,611	96,201	4,841	2,958	6	654			26	2,304			86	1,883	98	1,579	11	1,171
<b>GOLD, PLACER</b>																			
California.....	37	3,469,695	316,806	17,671	349	15	349							365	17,322				
Oregon.....	11	217,220	10,344	1,438	200									29	1,238				
Other States.....	28	92,426	32,347	1,171	40	1	40							26	1,131				

1 See GENERAL EXPLANATIONS—The Enterprise.  
 2 See GENERAL EXPLANATIONS—Milling and Manufacturing.  
 3 Not including data for salaried officers and employees of "Central Administrative" offices. (See Table 17.)  
 4 Includes 30 enterprises operating as custom mills, or on dumps and old tailings.  
 5 The statistics of the copper-mining industry for this State include data for an important zinc-manganese mine operated by a copper producer.  
 6 North Carolina, 2 enterprises; Oregon, 2; Tennessee, 2; Texas, 2; Vermont, 1; Washington, 1; Wyoming, 1.  
 7 Arkansas, 2 enterprises; California, 4; Texas, 1; Virginia, 1; Washington, 2; Wisconsin, 1.  
 8 Arizona, 1 enterprise; New Jersey, 1; New York, 1; Tennessee, 4; Utah, 1; Virginia, 1; Washington, 1.  
 9 Shown by special permission of the operators.  
 10 Idaho, 7 enterprises; North Carolina, 2; Oregon, 3; Utah, 3; Washington, 2.  
 11 Arizona, 11 enterprises; Idaho, 1; New Mexico, 1; Texas, 1; Washington, 2.  
 12 Arizona, 1 enterprise; Colorado, 1; Idaho, 2; New Mexico, 1; Washington, 1.  
 13 See GENERAL EXPLANATIONS—Value of Products.  
 14 Includes 53,932 horsepower reported for inactive prime movers in industries as follows: Copper, 32,298; lead, 4,719; zinc, 11,501; gold, lode, 1,308; and silver, 4,106.  
 15 Includes 35,814 kilowatt capacity reported for inactive generators in industries as follows: Copper, 24,795; lead, 3,250; zinc, 7,288; gold, lode, 440; and silver, 41.

# MINES AND QUARRIES—IRON ORE

## INTRODUCTION

**Scope of the report.**—This report gives the results of the census of mines and quarries for 1929 for the iron-ore-mining industry. It shows the progress of the industry by comparison of the results of the census for 1929 with those for the last three preceding censuses of mines and quarries; the geographic distribution of the industry by States; the size of operating enterprises; power equipment, by kind, number, and capacity; time in operation for enterprises and length of working week for wage earners; the numbers of persons engaged in the industry, classified as proprietors and firm members, salaried officers and employees, and wage earners; and fuel consumption, by kind. It includes also a table presenting statistics in detail for the United States as a whole and for those States for which separate figures can be given without disclosing, exactly or approximately, the data reported by individual enterprises.

The statistics which follow cover the production of all kinds of iron ore, as well as manganiferous ore and low-grade manganese ore containing less than 35 per cent of manganese.

A considerable portion of the iron ore produced must be improved by some process of washing, or crushing and concentrating, or sintering, before the material can be used most advantageously. Such beneficiation was practiced by more than one-fourth of the mines reported for 1929, and approximately 12 per cent<sup>1</sup> of the product had been so treated. The statistics herein presented, relating primarily to iron-ore mining, cover also the operation of beneficiating plants.

In previous censuses an operator was permitted to file one return covering all mines operated by him within a given State. In consequence, data for open-pit and underground mines, as well as for mines of various sizes, were often combined in a single return, and it was, therefore, impossible to make certain desirable statistical presentations. In the census for 1929 operators were requested to make separate returns for individual mines instead of for groups of

mines, whenever practicable, and accordingly it has been possible to present separate statistics for underground and open-pit mines, in size groupings, for the important iron-mining States. These statistics should prove particularly valuable for comparative and analytical purposes.

The number of enterprises, 180, represents the number of individual returns received, not the number of individual operators. In fact, in most cases a separate return was filed for each mine operated, as requested by the Bureau. The number of individual operators is, therefore, considerably smaller than the number of enterprises shown.

The iron-ore industry ranked fourth in value of products among the mining industries canvassed in the census for 1929, being outranked only by the bituminous-coal, the anthracite, and the copper industries. The total value of all products reported by the iron-ore mining industry (\$197,334,548) was 8.2 per cent of the total value of products of all mining industries (\$2,392,831,178) in 1929; and the number of wage earners employed in producing iron-ore mining enterprises (28,516) constituted 3.5 per cent of the total number of wage earners (806,418) in producing mining enterprises in the United States.

**Method of reporting quantity and value of products.**—The schedules used in this census called for data on the quantities of ore mined or concentrates recovered in 1929, to which other statistics given in the report apply. Data for ore mined and stock-piled are included in the production figures, whereas those for ore shipped from stocks mined in the previous year are omitted.

Table 1 gives figures for production and for shipments of iron ore as reported by the United States Bureau of Mines and those for production as reported by the Bureau of the Census. The differences are accounted for principally by the inclusion in the census figures, but not in the Bureau of Mines figures, of data for manganiferous ore except that reported in connection with high-grade manganese production.

<sup>1</sup> Mineral Resources of the United States, 1929—United States Bureau of Mines.

TABLE 1.—COMPARISON OF PRODUCTION AS REPORTED BY BUREAU OF THE CENSUS AND BY BUREAU OF MINES, FOR THE UNITED STATES: 1929

STATE	BUREAU OF THE CENSUS		BUREAU OF MINES <sup>1</sup>		
	Iron ore produced		Iron ore mined	Iron ore shipped	
	Quantity (tons, 2,240 pounds)	Value	Quantity (tons, 2,240 pounds)	Quantity (tons, 2,240 pounds)	Value
United States.....	73,963,485	\$196,085,542	73,027,720	75,602,784	\$197,148,640
Alabama.....	6,424,478	11,498,577	6,463,076	6,637,299	12,576,113
Michigan.....	15,238,409	42,960,944	15,456,397	16,838,568	47,597,976
Minnesota.....	46,816,208	124,725,908	45,760,858	46,470,243	121,776,312
New Jersey.....	281,331	1,141,971	281,827	285,115	1,157,848
New York.....	823,543	3,463,745	822,261	875,564	3,941,985
Pennsylvania.....	1,093,133	4,615,836	1,092,013	1,151,130	2,382,839
Wisconsin.....	1,618,103	4,394,809	1,608,671	1,739,721	4,845,978
Other States.....	1,669,280	3,883,942	1,653,218	1,655,094	2,867,589

<sup>1</sup> Mineral Resources of the United States, 1929.

Nonproducing mines (Table 2).—Nonproducing mines (development only) operated as separate enterprises represented only a very small part of the iron-ore mining industry. The number of wage earners employed was equal to less than four-tenths of 1 per cent of the number employed in producing enterprises, while the expenditures for development work by these

enterprises was equal to only 3.4 per cent of the corresponding expenditures of producing enterprises and less than one-half of 1 per cent of the aggregate expenditures for all purposes reported for producing enterprises. The statistics for nonproducing enterprises are not included in any of the other tables in this report.

TABLE 2.—SUMMARY FOR NONPRODUCING ENTERPRISES, FOR THE UNITED STATES: 1929

[No data for nonproducing iron-ore enterprises are included in any other table in this report]

Number of enterprises.....	6	Expenditures for development (includes "Principal expenses" listed above, in addition to other expenditures, not called for in detail).....	\$337,000
Number of mines.....	6		
Persons engaged, total.....	124	Machinery and other equipment purchased during the year, total cost.....	\$422,268
Salaried officers and employees.....	17	Prime movers and electric motors driven by purchased energy, total horsepower.....	1,820
Wage earners (average for the year).....	107	Prime movers.....	105
Principal expenses:		Electric motors driven by purchased energy.....	1,715
Salaries.....	\$33,942		
Wages.....	\$144,793		
Supplies, fuel, and purchased electric energy.....	\$155,688		

## PROGRESS OF THE INDUSTRY

Summary for the United States: 1902-1929 (Table 3).—This table presents, for producing iron-ore mines as a whole, the principal statistics as reported at the last four censuses of mines and quarries. It shows a pronounced increase in production between 1902 and 1909, followed by smaller and fairly uniform increases during the two 10-year periods following. As between 1919 and 1929, all items in the table show decreases

except four—rating of power equipment, cost of purchased electric energy, quantity of products, and value of "Other products." The decrease in the number of mines represents mainly the elimination of many smaller and high-cost mines, as well as exhaustion in other cases. The decreases in the "Principal expenses" items and in the value of products are due largely to the lower price levels that prevailed in 1929.

TABLE 3.—SUMMARY FOR THE UNITED STATES: 1902-1929

[This and all following tables cover producing enterprises only]

	1929	1919	1909	1902	PER CENT OF INCREASE OR DECREASE (—)		
					1919-1929	1909-1919	1902-1909
Number of enterprises <sup>1</sup> .....	180	290	300	332	-37.9	-3.3	-9.7
Number of mines.....	208	406	483	525	-48.8	-15.9	-8.0
Persons engaged, total.....	30,698	48,767	50,191	.....	-37.0	-2.8	.....
Proprietors and firm members.....	0	41	76	( <sup>2</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	.....
Salaried officers and employees <sup>4</sup> .....	2,473	2,935	2,870	2,405	-17.2	4.0	19.3
Wage earners (average for the year) <sup>5</sup> .....	28,516	45,741	47,245	38,851	-37.7	-3.2	21.6
Power equipment, total horsepower.....	496,821	370,859	346,534	119,558	34.5	7.0	189.8
Principal expenses, total <sup>6</sup> .....	\$77,310,534	\$121,804,323	\$53,049,977	\$33,075,922	-36.5	129.6	60.4
Salaries <sup>7</sup> .....	\$6,351,402	\$6,035,080	\$3,339,962	\$2,113,280	-5.4	104.6	60.4
Wages.....	\$40,905,190	\$75,713,459	\$29,731,456	\$21,581,792	-46.0	154.7	38.1
Contract work.....	\$1,553,134	\$1,671,783	\$2,698,842	\$425,292	-7.1	-38.1	534.6
Supplies and materials.....	\$18,561,157	\$27,187,832	\$12,597,428	.....	-31.7	115.8	.....
Fuel.....	\$5,332,103	\$3,700,358	.....	7 \$9,005,608	-38.7	.....	.....
Purchased electric energy.....	\$4,607,488	\$1,594,231	\$4,032,289	.....	189.0	122.2	91.3
Value of products, total <sup>8</sup> .....	\$197,334,548	\$218,217,905	\$109,831,000	\$65,465,321	-9.6	98.6	67.8
Iron ore—							
Quantity (tons, 2,240 pounds).....	73,963,485	61,173,254	51,947,129	35,567,410	20.9	17.8	46.1
Value at mine.....	\$196,055,542	\$217,949,311	\$109,473,000	( <sup>1</sup> )	-10.0	99.0	.....
Other products <sup>10</sup> .....	\$1,249,006	\$288,594	\$408,000	( <sup>2</sup> )	365.0	-34.2	.....

<sup>1</sup> See GENERAL EXPLANATIONS—The Enterprise.<sup>2</sup> Not reported.<sup>3</sup> Per cent not computed where base is less than 100.<sup>4</sup> Includes data for salaried officers and employees of "Central Administrative" offices. (See Table 20.)<sup>5</sup> See GENERAL EXPLANATIONS—Persons Engaged.<sup>6</sup> See GENERAL EXPLANATIONS—Expenses.<sup>7</sup> Not including cost of purchased electric energy, probably a negligible amount for that year.<sup>8</sup> See GENERAL EXPLANATIONS—Value of Products.<sup>9</sup> Represents value of production during the year and differs from figures given in Tables 6 and 24 in General Report, which represent value of iron ore sold or used.<sup>10</sup> Miscellaneous secondary products, and receipts for services performed for others and for power sold.

Principal statistics, by States (Table 4).—The greatest increase in production from 1919 to 1929 shown for any State is that for Minnesota, which amounted to 10,556,725 tons, or 82.5 per cent of the total increase for the country, notwithstanding a decrease of 39.7 per cent in the number of mines in that State. Alabama and Wisconsin also record large gains, while

Michigan and New York show declines. Virginia failed to report a single enterprise producing iron ore in 1929, after a long period of production. The figures indicate an increase in the average output per wage earner between 1919 and 1929 for every State for which figures are given. The output per wage earner in Minnesota was more than twice as large in 1929 as in 1919.

TABLE 4.—SUMMARY, BY STATES: 1929, 1919, AND 1909

STATE	Census year	Number of enterprises <sup>1</sup>	Number of mines	Wage earners (average for the year) <sup>2</sup>	Wages	Supplies, fuel, and purchased electric energy	Contract work	Value of products <sup>3</sup>	Iron ore produced (tons, 2,240 pounds)	Average value per ton <sup>4</sup>	Horse-power rating of power equipment
United States.....	1929	180	208	28,516	\$40,905,100	\$28,500,748	\$1,553,134	\$197,334,548	78,908,485	\$2.05	408,821
	1919	290	400	45,741	75,718,459	37,482,421	1,671,783	218,217,905	61,178,264	\$3.56	370,869
	1909	300	483	47,245	29,731,456	17,229,717	2,698,842	109,881,000	51,047,129	\$2.12	346,534
Per cent of increase or decrease (—):											
1919-1929.....		-37.9	-48.8	-37.7	-46.0	-24.0	-7.1	-9.6	20.9	-25.6	34.5
1909-1919.....		-3.3	-15.9	-3.2	154.7	117.5	-38.1	98.6	17.8	67.9	7.0
Minnesota.....	1929	75	85	10,078	16,038,428	12,762,404	1,473,841	125,333,030	46,815,208	\$2.66	184,042
	1919	89	141	16,236	28,333,475	18,335,513	1,444,256	128,377,174	36,268,483	\$3.54	135,924
	1909	46	101	14,978	11,068,652	8,548,861	2,157,075	58,838,000	29,127,918	\$2.02	145,068
Per cent of increase or decrease (—):											
1919-1929.....		( <sup>5</sup> )	-39.7	-37.9	-43.4	-30.0	2.0	-2.4	29.1	-24.9	35.4
1909-1919.....		( <sup>5</sup> )	39.6	8.4	166.0	115.1	-33.0	118.2	24.5	75.2	-6.3
Michigan.....	1929	49	57	8,894	13,049,659	7,740,490	16,305	43,194,938	15,238,409	\$2.82	173,477
	1919	65	100	16,160	32,186,404	11,283,720	23,580	60,606,692	15,410,494	\$3.94	142,559
	1909	44	83	14,978	10,668,069	4,909,979	430,148	32,380,000	11,962,693	\$2.70	108,427
Per cent of increase or decrease (—):											
1919-1929.....		( <sup>5</sup> )	-43.0	-45.0	-59.5	-31.4	-30.9	-29.1	-1.1	-28.4	21.7
1909-1919.....		( <sup>5</sup> )	( <sup>5</sup> )	7.8	201.7	129.8	-94.6	88.1	28.5	45.9	31.5
Alabama.....	1929	13	18	5,336	5,637,402	2,924,557	2,479	11,777,914	6,424,478	\$1.79	61,442
	1919	39	48	6,485	6,810,301	2,548,066	74,498	12,291,760	5,053,035	\$2.43	36,890
	1909	41	52	5,176	2,698,948	1,100,691	5,700	5,391,000	4,687,468	\$1.15	31,838
Per cent of increase or decrease (—):											
1919-1929.....		( <sup>5</sup> )	( <sup>5</sup> )	-17.7	-17.2	14.7	-96.7	-4.2	27.1	-26.3	66.6
1909-1919.....		( <sup>5</sup> )	( <sup>5</sup> )	25.3	152.3	131.6	1,207.0	128.0	7.8	111.3	15.9
Wisconsin.....	1929	3	3	948	1,405,166	822,430		4,394,869	1,618,103	\$2.72	16,983
	1919	6	8	1,145	1,872,621	711,796	31,963	3,826,872	1,062,948	\$3.60	6,732
	1909	7	11	1,261	870,977	442,182	20,600	2,886,000	975,016	\$2.90	8,975
Per cent of increase or decrease (—):											
1919-1929.....		( <sup>5</sup> )	( <sup>5</sup> )	-17.2	-25.0	15.5		14.8	62.2	-24.4	152.3
1909-1919.....		( <sup>5</sup> )	( <sup>5</sup> )	-9.2	115.0	61.0	55.2	32.6	9.0	21.6	-25.0
Pennsylvania <sup>7</sup> .....	1929	4	5	680	958,847	1,843,194		4,515,536	1,093,133	\$4.13	16,448
	1909	15	19	540	167,033	110,800	50,994	792,900	665,642	\$1.19	3,971
Per cent of increase, 1909-1929.....		( <sup>5</sup> )	( <sup>5</sup> )	25.9	474.0	1,563.5		470.1	64.2	247.1	314.2
New York.....	1929	5	5	974	1,410,581	1,164,139		3,554,605	823,543	\$4.21	24,471
	1919	7	7	1,811	2,365,595	1,953,590	44,778	5,264,443	868,995	\$6.00	21,172
	1909	14	19	2,082	1,001,025	756,814	20,632	3,741,000	1,238,720	\$3.02	22,520
Per cent of increase or decrease (—):											
1919-1929.....		( <sup>5</sup> )	( <sup>5</sup> )	-46.2	-40.1	-40.4		-32.5	-5.2	-29.8	15.6
1909-1919.....		( <sup>5</sup> )	( <sup>5</sup> )	-13.0	136.3	158.1	117.0	40.7	-29.8	98.7	-6.0
New Jersey <sup>7</sup> .....	1929	4	4	361	595,079	383,527	18,435	1,161,159	281,331	\$4.06	8,741
	1909	8	10	1,949	840,967	368,075		1,584,000	536,958	\$2.95	6,585
Per cent of increase or decrease (—), 1909-1929.....		( <sup>5</sup> )	( <sup>5</sup> )	-81.5	-29.2	4.2		-20.7	-47.6	37.6	32.7
Virginia <sup>8</sup> .....	1919	21	22	623	652,826	290,122		1,186,127	304,524	\$3.90	2,304
	1909	44	58	2,772	843,006	325,242	945	1,692,000	841,709	\$2.61	6,458
Per cent of increase or decrease (—), 1909-1919.....		( <sup>5</sup> )	( <sup>5</sup> )	-77.5	-22.6	-10.8		-29.9	-63.8	94.0	-64.3
Other States.....	<sup>9</sup> 1929	27	31	1,245	1,804,028	800,007	42,074	3,401,546	1,699,280	\$2.04	13,217
	<sup>10</sup> 1919	63	80	3,281	3,492,237	2,309,014	52,708	6,364,837	2,214,775	\$2.87	25,273
	<sup>11</sup> 1909	79	130	3,498	1,572,779	667,173	6,748	2,577,000	1,881,005	\$1.37	12,692

<sup>1</sup> See GENERAL EXPLANATIONS—The Enterprise.

<sup>2</sup> See GENERAL EXPLANATIONS—Persons Engaged.

<sup>3</sup> See GENERAL EXPLANATIONS—Value of Products.

<sup>4</sup> Based on value of iron ore only.

<sup>5</sup> See footnote 9, Table 3.

<sup>6</sup> Per cent not computed where base is less than 100.

<sup>7</sup> No data available for 1919.

<sup>8</sup> No iron ore was mined in Virginia in 1929.

<sup>9</sup> Colorado, 3 enterprises; Georgia, 3; Missouri, 6; Montana, 1; Nevada, 2; New Mexico, 2; North Carolina, 1; Tennessee, 4; Utah, 3; Washington, 1; Wyoming, 1.

<sup>10</sup> Arkansas, 1 enterprise; California, 1; Connecticut, 1; Georgia, 9; Idaho, 1; Maryland, 1; Massachusetts, 1; Missouri, 8; Montana, 2; New Jersey, 5; New Mexico, 5; North Carolina, 6; Pennsylvania, 5; Tennessee, 12; Texas, 1; Utah, 2; Washington, 1; Wyoming, 1.

<sup>11</sup> Colorado, 1 enterprise; Connecticut, 1; Georgia, 13; Kentucky, 2; Maryland, 12; Massachusetts, 1; Missouri, 17; Nevada, 1; New Mexico, 1; North Carolina, 1; Ohio, 4; Tennessee, 19; Texas, 1; Utah, 3; West Virginia, 1; Wyoming, 1.



Increase in population and in production of iron ore, pig iron, and steel: 1879-1929 (Table 5).—The production of iron ore per capita was more than four and one-half times as large in 1929 as in 1879 and nearly doubled during each of the first and second periods shown. During the last two decades the rate of increase in iron-ore production was only slightly larger than that in population, the increase per capita during each of these periods being only two-hundredths of a ton. Over the entire period from 1879 to 1929 the

rate of increase in the per capita production of pig iron has been greater than the corresponding rate for iron ore, while the rate for steel ingots and steel castings has exceeded that for pig iron. The growth of steel production during the later periods reflects an increasing use of scrap materials, which have displaced considerable quantities of pig iron and, in turn, their equivalent tonnages of iron ore. The figures for pig iron and steel include data for production from imported as well as domestic materials.

TABLE 5.—INCREASE IN POPULATION AND IN PRODUCTION OF IRON ORE, PIG IRON, AND STEEL, FOR THE UNITED STATES: 1879-1929

YEAR	POPULATION		IRON ORE			PIG IRON			STEEL INGOTS AND STEEL CASTINGS		
	Number	Per cent of increase over preceding census	Tons (2,240 pounds)	Per cent of increase over preceding census	Tonnage per capita	Tons <sup>1</sup> (2,240 pounds)	Per cent of increase over preceding census	Tonnage per capita	Tons <sup>1</sup> (2,240 pounds)	Per cent of increase over preceding census	Tonnage per capita
1879.....	<sup>1</sup> 50,155,783		6,307,883		0.13	<sup>2</sup> 2,741,853		0.05	935,273		0.02
1889.....	<sup>2</sup> 62,947,714	25.6	14,518,041	130.2	0.23	<sup>3</sup> 7,603,642	177.3	0.12	3,885,732	202.0	0.05
1902.....	<sup>4</sup> 79,305,000	26.1	35,567,410	145.0	0.45	17,649,706	130.8	0.22	14,947,250	341.5	0.19
1909.....	<sup>1</sup> 61,072,266	15.9	51,947,129	40.1	0.56	25,437,283	44.9	0.28	23,055,021	60.3	0.20
1919.....	<sup>2</sup> 105,710,620	14.9	61,173,264	17.8	0.58	30,542,808	20.1	0.29	34,071,232	44.7	0.33
1929.....	<sup>2</sup> 122,775,046	16.1	78,969,485	20.9	0.60	41,757,215	36.7	0.34	56,433,473	62.8	0.46

<sup>1</sup> From Annual Statistical Report of American Iron and Steel Institute. (These figures are used because comparable census figures are not available for all years covered by the table.)  
<sup>2</sup> As enumerated in following year.  
<sup>3</sup> Includes data for ferro-alloys.  
<sup>4</sup> Estimated.

Production of iron ore, by States (Tables 6 and 7).—Table 6, compiled from the reports of the United States Geological Survey for the period 1879-1923, and from those of the United States Bureau of Mines for the

years from 1924 to 1929, shows the production of iron ore in each State for which separate figures can be given without disclosing data for individual enterprises.

TABLE 6.—PRODUCTION OF IRON ORE, BY STATES: 1879-1929<sup>1</sup>

YEAR	THOUSANDS OF TONS (2,240 POUNDS)									YEAR	THOUSANDS OF TONS (2,240 POUNDS)								
	United States	Minnesota	Michigan	Wisconsin	Alabama	New York	Pennsylvania	New Jersey	Other States		United States	Minnesota	Michigan	Wisconsin	Alabama	New York	Pennsylvania	New Jersey	Other States
1879.....	7,120		1,641	37	171	1,127	1,951	678	1,517	1909.....	51,294	28,975	11,900	1,068	4,321	1,015	667	544	2,801
1889.....	14,518	865	5,856	837	1,570	1,248	1,600	416	2,166	1910.....	57,015	31,967	13,304	1,150	4,801	1,287	740	522	3,214
1890.....	16,036	892	7,142	949	1,898	1,263	1,362	496	2,044	1911.....	43,877	24,045	10,329	899	3,828	1,011	538	466	2,311
1891.....	14,591	945	6,127	589	1,987	1,017	1,273	520	2,127	1912.....	55,160	34,432	11,191	860	4,504	1,217	517	365	2,004
1892.....	16,297	1,255	7,544	790	2,312	891	1,084	465	1,956	1913.....	61,980	38,659	12,841	1,018	5,216	1,460	489	325	1,972
1893.....	11,588	1,500	4,668	439	1,742	534	698	350	1,651	1914.....	41,440	21,947	10,796	887	4,839	786	406	350	1,429
1894.....	11,880	2,068	4,419	348	1,493	243	532	277	1,600	1915.....	55,526	33,465	12,515	1,095	5,309	999	363	415	1,365
1895.....	15,958	3,860	5,812	649	2,199	307	900	282	1,943	1916.....	75,168	44,685	18,071	1,305	6,748	1,343	559	493	2,064
1896.....	16,005	4,284	5,707	607	2,042	385	748	265	1,967	1917.....	75,289	44,695	17,869	1,202	7,028	1,304	547	490	2,244
1897.....	17,518	5,601	6,087	654	2,099	336	724	254	1,863	1918.....	69,668	41,954	16,899	1,089	5,755	906	523	423	2,109
1898.....	19,434	5,964	7,347	510	2,402	180	773	275	1,983	1919.....	60,965	36,001	15,439	1,087	5,053	871	627	404	1,483
1899.....	24,683	8,161	9,146	580	2,663	444	1,099	256	2,424	1920.....	67,604	39,453	17,511	981	5,894	920	734	432	1,079
1900.....	27,553	9,834	9,927	746	2,789	441	878	344	2,624	1921.....	20,491	17,811	7,283	257	2,876	470	147	59	688
1901.....	28,887	11,110	9,654	739	2,802	420	1,041	402	2,719	1922.....	47,129	28,769	10,464	577	5,235	444	781	90	779
1902.....	35,554	15,138	11,135	784	3,574	555	823	442	3,103	1923.....	69,351	44,348	14,174	871	6,783	542	998	308	1,322
1903.....	35,019	15,371	10,600	675	3,685	640	645	435	3,018	1924.....	54,267	31,902	12,351	690	6,994	256	807	65	1,202
1904.....	27,644	12,729	7,999	483	3,700	842	397	500	1,903	1925.....	61,908	34,856	14,401	817	7,093	142	956	203	1,350
1905.....	42,826	21,735	10,886	859	3,783	1,140	809	526	2,788	1926.....	67,623	40,702	15,248	1,323	6,448	639	1,096	209	1,558
1906.....	47,750	25,364	11,823	848	3,995	1,042	946	543	3,186	1927.....	61,741	35,461	15,075	1,091	6,445	853	1,170	221	1,425
1907.....	51,721	28,970	11,830	839	4,039	1,375	837	550	3,291	1928.....	62,197	37,564	13,677	1,285	6,308	713	1,024	250	1,370
1908.....	35,983	18,662	8,839	734	3,734	697	443	305	2,489	1929.....	78,028	45,761	15,466	1,609	6,453	822	1,092	281	1,574

<sup>1</sup> Mineral Resources of the United States, published by U. S. Geological Survey, 1879-1923, and by U. S. Bureau of Mines, 1924-1929.

Table 7 shows the average output of iron-ore mines, by States, for 1929 and for the last two preceding census years. The average is materially increased by the shrinkage in the number of smaller mines, as indicated in particular by the figures for "Other States."

TABLE 7.—NUMBER OF MINES, IRON-ORE PRODUCTION, AND AVERAGE OUTPUT PER MINE, BY STATES: 1929, 1919, AND 1909

STATE	Census year	Number of mines	Iron ore produced, tons (2,240 pounds)	Average output per mine, tons (2,240 pounds)	STATE	Census year	Number of mines	Iron ore produced, tons (2,240 pounds)	Average output per mine, tons (2,240 pounds)
United States.....	1929	208	73,063,485	355,594	Alabama.....	1929	18	6,424,478	356,915
	1919	406	61,173,254	150,673		1919	48	5,053,035	105,272
	1909	483	51,947,120	107,551		1909	52	4,687,468	90,144
Minnesota.....	1929	85	46,815,208	550,767	Wisconsin.....	1929	3	1,618,103	539,368
	1919	141	36,268,483	257,152		1919	8	1,002,948	132,868
	1909	101	29,127,918	288,395		1909	11	975,016	88,638
Michigan.....	1929	57	15,238,409	267,341	Other States.....	1929	45	3,807,287	85,940
	1919	100	15,410,494	154,105		1919	109	3,388,294	31,085
	1909	88	11,992,693	144,490		1909	236	5,104,034	21,882

Type of ownership: 1929 and 1919 (Table 8).—Corporations operated all important enterprises in the industry and contributed 99.8 per cent of the total value of products in 1929. Enterprises reported as

"Other" constituted a very small portion of the industry in 1919, while the figures for 1929 show that this class of enterprises had become even less important in the industry.

TABLE 8.—TYPE OF OWNERSHIP: 1929 AND 1919

TYPE OF OWNERSHIP	Number of enterprises	Number of mines	Wage earners (average for the year)	Value of products	TYPE OF OWNERSHIP	Number of enterprises	Number of mines	Wage earners (average for the year)	Value of products		
United States.....	1929	180	208	28,516	\$197,334,548	Corporation.....	1929	169	197	28,411	\$196,993,288
	1919	290	406	45,741	218,217,905		1919	207	( <sup>1</sup> )	45,152	210,718,813
	Per cent of decrease.....	37.9	48.8	37.7	9.0		Per cent of decrease.....	36.7		37.1	9.1
	1929	11	11	105	341,260	Other <sup>2</sup> .....	1929	11	11	105	341,260
	1919	23	( <sup>1</sup> )	580	1,490,092		1919	23	( <sup>1</sup> )	580	1,490,092
	Per cent of decrease.....	( <sup>3</sup> )		82.2	77.2		Per cent of decrease.....	( <sup>3</sup> )		82.2	77.2

<sup>1</sup> Not tabulated separately.  
<sup>2</sup> Partnerships, enterprises operated by individuals, etc.  
<sup>3</sup> Per cent not computed where base is less than 100.

## MINES AND QUARRIES

## GEOGRAPHIC DISTRIBUTION

Iron-ore mining States.—Although iron-ore mining was reported in 18 States for 1929, no less than 92.6 per cent of the total tonnage was produced in only 3 States. Of these, Minnesota contributed 63.3 per cent; Michigan, 20.6 per cent; and Alabama, 8.7 per cent of the total. (See Table 25.)

Iron-ore mining counties (Table 9).—This table gives the principal statistics for those counties for which separate figures can be shown without disclosing,

exactly or approximately, the data reported by individual enterprises. It discloses that a preponderant portion of the industry is concentrated to a high degree within a relatively small number of counties. St. Louis County, Minn., contributed approximately one-half of the total production of the country, and, together with six others—Itasca and Crow Wing Counties, Minn.; Gogebic, Marquette, and Iron Counties, Mich.; and Jefferson County, Ala.—accounted for nine-tenths of the total.

TABLE 9.—SUMMARY FOR LEADING STATES AND COUNTIES: 1929

STATE AND COUNTY	Number of enterprises <sup>1</sup>	Number of mines	Wage earners (average for the year) <sup>2</sup>	Wages	Contract work	Cost of supplies	Cost of fuel	Cost of purchased electric energy	Value of all products	IRON ORE PRODUCED		HORSEPOWER RATING OF POWER EQUIPMENT	
										Tons (2,240 pounds)	Value at mine	Prime movers	Electric motors driven by purchased energy
Minnesota, total.....	75	85	10,078	\$10,038,428	\$1,473,841	\$8,568,830	\$2,661,024	\$1,532,550	\$125,333,930	40,815,208	\$124,725,908	104,609	70,373
Counties													
St. Louis.....	50	54	6,897	11,060,940	127,366	6,023,903	1,010,403	927,744	95,558,324	35,527,885	95,553,674	68,043	48,270
Itasca.....	16	18	2,097	3,321,639	981,516	1,747,329	673,002	359,695	22,999,109	8,764,249	22,753,638	28,846	20,884
Crow Wing.....	9	13	1,084	1,655,849	304,959	797,598	370,710	245,111	6,776,497	2,523,074	6,418,596	7,780	10,213
Michigan, total.....	49	57	8,894	13,049,659	16,305	5,179,069	767,137	1,794,284	43,194,938	15,238,409	42,900,944	75,203	98,274
Counties													
Gogebic.....	10	14	3,011	4,668,741	55	1,955,824	445,490	467,781	16,500,966	5,566,380	16,407,928	38,140	20,022
Marquette.....	15	15	2,304	3,311,630	55	1,453,339	126,908	658,640	11,872,750	4,175,590	11,872,554	3,350	41,503
Iron.....	19	23	2,324	3,218,194	16,250	1,293,778	127,672	516,521	10,591,906	4,123,620	10,577,148	2,523	32,215
Other counties <sup>3</sup> .....	5	5	1,255	1,851,094	476,130	476,130	67,061	151,342	4,229,256	1,372,819	4,103,314	31,190	4,534
Alabama, total.....	13	18	5,336	5,637,402	2,479	2,212,803	361,145	350,609	11,777,914	6,424,478	11,498,577	23,170	38,272
Counties													
Jefferson.....	6	8	4,504	4,959,805	2,479	1,977,107	256,745	285,007	10,130,473	5,814,143	9,862,916	20,380	35,356
Fuscaloosa.....	4	4	259	238,471	2,479	73,298	42,964	29,930	561,820	239,358	550,040	2,520	1,180
Other counties <sup>4</sup> .....	3	6	573	439,126	—	162,398	61,436	35,672	1,085,621	370,977	1,085,621	270	1,730

<sup>1</sup> See GENERAL EXPLANATIONS—The Enterprise.

<sup>2</sup> See GENERAL EXPLANATIONS—Persons Engaged.

<sup>3</sup> Baraga County, 1 enterprise; Dickinson County, 4.

<sup>4</sup> Blount County, 1 enterprise; Etowah County, 1; Franklin County, 1.

## SCALE OF OPERATION

Enterprises classified according to type of mine and quantity of product (Table 10).—This table presents statistics for iron-ore mines classified as underground or open-pit and according to tonnage produced in 1929. Of the returns received, 18 covered the operations of 2 or more mines, embracing a total of 46. In order that the greatest value for comparative and analytical purposes might be derived from the table, the figures compiled from reports covering 2 or more mines are shown separately, so far as possible, from those for individual mines. To facilitate com-

parisons among the several groups, the following average factors are shown: (1) Wages per ton, (2) other expenses per ton, (3) value per ton, and (4) number of tons produced per wage earner.

Open-pit mines, with slightly more than one-third as many wage earners, contributed approximately one-third more tonnage than underground mines. Similar contrasts are shown between large and small mines.

In several cases where the figures appear to be inconsistent, it has been found that the results were due to the prevalence of unusual conditions, and wherever possible these are explained in footnotes.

# IRON ORE

319

**TABLE 10.—SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO TYPE OF MINE AND QUANTITY OF PRODUCT, BY STATES: 1929**

STATE, TYPE OF MINE, AND QUANTITY OF PRODUCT PER ENTERPRISE (tons, 2,240 pounds)	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	Cost of supplies	Cost of fuel	Cost of purchased electric energy	Iron ore produced, tons (2,240 pounds)	Value of all products	HORSEPOWER RATING OF POWER EQUIPMENT		AVERAGE PER TON			Tons per wage earner
										Prime movers	Electric motors driven by purchased energy	Wages	Supplies, fuel, and purchased electric energy	Value of products	
United States, total.....	180	208	28,516	\$40,905,190	\$18,561,157	\$5,392,108	\$4,607,488	73,963,485	\$197,334,548	222,154	276,667	\$0.55	\$0.39	\$2.67	2,594
Underground mines <sup>1</sup> .....	113	120	20,921	29,490,326	12,110,290	1,477,099	3,240,788	31,567,305	85,976,980	119,776	195,048	.53	.53	2.72	1,509
Open-pit mines <sup>1</sup> .....	67	70	7,595	11,414,864	6,441,867	3,855,004	1,366,700	42,396,180	111,357,618	102,378	81,619	.27	.27	2.63	5,582
Underground mines: 1-mine enterprises, total <sup>2</sup> .....	102	102	10,989	24,036,231	9,796,073	1,193,448	2,925,869	26,202,458	75,404,887	105,379	163,023	.94	.58	2.88	1,542
Less than 5,000.....	8	8	71	99,009	26,615	1,141	7,978	22,851	122,920	102	1,162	4.34	1.50	5.38	322
5,000 to 9,999.....	1	1													
10,000 to 24,999.....	2	2	85	94,509	36,275	4,084	3,522	49,074	148,530	210	1,076	1.00	.88	2.99	584
25,000 to 49,999.....	9	9	404	581,549	156,870	57,923	27,751	337,242	1,080,478	4,395	1,070	1.58	.72	3.00	835
50,000 to 99,999.....	13	13	818	1,233,430	432,891	52,748	108,033	972,639	2,822,789	980	6,952	1.27	.61	2.90	1,189
100,000 to 199,999.....	20	20	2,382	3,286,327	1,571,190	150,715	518,275	3,153,065	9,479,149	4,320	35,171	1.04	.71	3.01	1,324
200,000 to 499,999.....	36	36	7,074	10,287,814	4,163,191	485,109	1,345,093	11,589,358	33,983,257	45,252	70,196	.89	.52	2.93	1,638
500,000 to 999,999.....	8	8	3,134	4,559,274	1,790,039	220,528	532,380	5,108,510	16,340,595	27,200	24,882	.88	.49	3.10	1,649
1,000,000 to 1,999,999.....	4	4	3,021	4,544,109	1,610,002	215,200	382,921	4,909,119	11,477,169	22,920	23,985	.63	.45	2.34	1,625
Minnesota, total.....	30	30	4,487	7,199,571	3,046,677	231,617	617,155	8,573,334	24,655,581	7,984	24,701	.84	.45	2.88	1,911
10,000 to 24,999.....	1	1													
25,000 to 49,999.....	4	4	141	203,190	60,402	14,241	7,475	186,653	516,968	170	505	1.09	.44	2.77	1,324
50,000 to 99,999.....	4	4	178	280,293	93,345	7,051	14,654	360,634	991,228	200	917	.70	.33	2.83	1,970
100,000 to 199,999.....	4	4	464	716,858	278,659	22,416	85,009	885,124	2,069,609	595	3,480	1.05	.56	3.02	1,477
200,000 to 499,999.....	14	14													
500,000 to 999,999.....	2	2	3,704	6,013,230	2,614,271	187,909	509,957	7,350,923	21,077,716	7,019	19,799	.82	.45	2.87	1,985
1,000,000 to 1,999,999.....	1	1													
Michigan, total.....	39	39	7,443	10,781,218	4,106,508	575,161	1,520,973	11,300,902	34,129,783	64,508	81,580	.95	.55	3.02	1,518
50,000 to 99,999.....	4	4	333	492,011	165,470	25,092	41,992	296,302	788,756	500	3,043	1.66	.78	2.66	890
100,000 to 199,999.....	12	12	1,326	1,076,429	641,431	60,318	232,043	1,860,212	5,126,418	1,860	18,707	.61	.53	2.77	1,395
200,000 to 499,999.....	18	18	3,888	5,730,531	2,237,383	241,817	946,813	5,777,864	18,169,558	34,928	49,208	.99	.59	3.14	1,486
500,000 to 999,999.....	4	4	1,896	2,870,247	1,062,219	237,904	260,125	3,376,584	10,047,051	27,220	10,562	.85	.40	2.98	1,781
1,000,000 to 1,999,999.....	1	1													
Alabama, total.....	7	9	4,538	4,985,265	1,983,434	257,545	285,007	5,820,912	10,164,872	20,440	35,356	.86	.43	1.74	1,284
10,000 to 24,999.....	1	1													
25,000 to 49,999.....	1	1	584	802,372	214,284	81,906	65,586	789,808	2,047,000	4,800	6,434	1.02	.40	2.59	893
50,000 to 99,999.....	2	2													
100,000 to 199,999.....	1	1	3,654	4,182,893	1,760,150	175,639	219,421	5,037,104	8,117,812	15,580	28,922	.83	.43	1.61	1,379
200,000 to 499,999.....	2	2													
500,000 to 999,999.....	1	1													
1,000,000 to 1,999,999.....	2	2													
New York <sup>7</sup> .....	5	6	974	1,410,581	801,165	129,872	233,302	823,543	3,554,606	8,000	16,471	1.72	1.41	4.32	846
New Jersey.....	4	4	361	505,079	243,760	33,454	100,317	281,331	1,161,159	2,400	6,341	2.12	1.30	4.13	779
Wisconsin.....	3	3	948	1,405,166	558,448	81,587	182,306	1,618,103	4,394,899	3,560	13,433	.87	.51	2.72	1,707
Colo., Mo., Nev., N. Mex., N. C., Pa., Tenn., and Utah	16	10	647	884,191	451,200	33,158	58,289	794,958	1,842,471	3,577	4,701	1.11	.68	2.32	1,220
Enterprises reporting 2 or more mines, total <sup>8</sup> .....	9	23	1,523	2,223,265	928,102	134,905	243,350	2,348,162	6,073,589	9,317	12,465	.95	.50	2.59	1,542
Michigan.....	5	13	1,105	1,723,768	795,746	83,744	107,884	1,869,033	5,002,056	5,160	9,732	.92	.58	2.68	1,691
Minn., Pa., and Tenn.....	4	10	418	499,487	132,356	51,161	45,466	479,099	1,071,533	4,167	2,733	1.04	.48	2.24	1,146
Open-pit mines: 1-mine enterprises, Minnesota and Michigan, total.....	42	42	4,381	6,884,933	4,977,818	1,849,291	766,999	35,737,575	92,876,022	81,746	49,574	.19	.21	2.60	8,157
Minnesota, total.....	37	37	4,035	6,340,310	4,701,003	1,741,059	691,572	33,669,191	88,812,923	76,201	42,612	.19	.21	2.64	8,344
10,000 to 24,999.....	2	2													
25,000 to 49,999.....	1	1	66	113,049	36,181	21,484	2,603	183,020	561,111	735	305	.02	.33	3.07	2,816
50,000 to 99,999.....	1	1													
100,000 to 199,999.....	5	5	185	260,530	101,709	50,093	51,142	723,936	1,671,664	3,779	2,444	.36	.28	2.31	3,913
200,000 to 499,999.....	15	15	1,154	1,871,704	1,445,906	367,073	307,461	5,539,626	14,057,006	24,216	17,270	.34	.38	2.54	4,801
500,000 to 999,999.....	5	5	648	929,000	625,555	228,171	116,841	3,328,229	7,589,647	12,172	9,934	.28	.29	2.28	5,136
1,000,000 to 1,999,999.....	4	4	1,983	3,165,221	2,491,652	1,074,238	213,525	23,894,080	64,933,495	35,300	12,560	.13	.10	2.72	12,049
2,000,000 and over.....	4	4													
Michigan.....	5	5	346	544,673	276,815	108,232	75,427	2,068,384	4,063,099	5,546	6,962	.20	.22	1.96	5,978
Other enterprises, total.....	25	37	3,214	4,529,881	1,464,049	2,005,713	593,701	6,658,605	18,481,566	20,632	32,045	.68	.61	2.78	2,072
Minnesota <sup>9</sup> .....	6	14	1,274	2,128,014	697,642	637,187	192,987	4,164,860	10,969,962	16,477	10,577	.51	.37	2.63	3,269
Alabama.....	6	9	798	662,137	229,369	103,600	65,602	597,566	1,613,042	2,730	2,916	1.09	.67	2.70	749
Mont., Pa., Tenn., Utah, Wash., and Wyo.....	13	14	1,142	1,749,780	537,038	1,264,926	335,112	1,896,179	5,898,592	1,425	18,552	.62	1.13	3.11	1,660

<sup>1</sup> The figures for one small open-pit mine in New York are included with those for underground mines in order to avoid disclosing data for an individual enterprise.  
<sup>2</sup> This total is less than the sum of the figures for the States as given below (104) because the State figures include data for 2 enterprises of other classes. (See footnotes 5 and 7.)  
<sup>3</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.  
<sup>4</sup> Includes data for 1 enterprise on the Vermilion Range producing hard hematite ores, which accounts for the wide variation of averages from those of other size groups.  
<sup>5</sup> Includes data for 1 enterprise operating 3 mines.  
<sup>6</sup> Represents assigned value for interplant transfers.  
<sup>7</sup> Includes data for 1 enterprise operating 1 small open-pit mine.  
<sup>8</sup> Exclusive of data for 1 enterprise in Alabama which operated 3 mines. (See note 5.)  
<sup>9</sup> Includes data for a sintering plant, and for 1 mine operated partly underground, with a large proportion of development work.

MINES AND QUARRIES

TABLE 11.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO VALUE OF PRODUCTS, FOR SELECTED STATES: 1929

STATE AND VALUE OF PRODUCTS PER ENTERPRISE	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	VALUE OF PRODUCTS		STATE AND VALUE OF PRODUCTS PER ENTERPRISE	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	VALUE OF PRODUCTS	
					Amount	Per cent of total						Amount	Per cent of total
United States, total.....	180	208	28,516	\$40,005,190	\$197,334,548	100.0	Michigan, total.....	49	57	8,894	\$13,049,659	\$43,194,938	100.0
Less than \$20,000.....	10	10	57	95,065	92,563	(1)	\$100,000 to \$249,999.....	4	4	291	436,197	633,418	1.6
\$20,000 to \$49,999.....	11	12	203	195,926	308,552	0.2	\$250,000 to \$499,999.....	13	14	1,415	1,831,033	5,192,810	12.0
\$50,000 to \$99,999.....	7	7	192	227,968	531,821	0.3	\$500,000 to \$999,999.....	16	19	2,227	3,222,172	11,200,027	25.9
\$100,000 to \$249,999.....	21	25	1,172	1,552,671	3,270,952	1.7	\$1,000,000 to \$2,499,999.....	15	19	4,901	7,560,257	20,161,783	60.3
\$250,000 to \$499,999.....	33	35	3,169	4,017,324	12,320,466	6.2	\$2,500,000 to \$4,999,999.....	1	1				
\$500,000 to \$999,999.....	41	48	5,589	8,393,527	29,341,065	14.9	Alabama, total.....	13	18	5,330	5,637,402	11,777,914	100.0
\$1,000,000 to \$2,499,999.....	42	53	9,997	14,848,799	62,046,641	31.4	\$20,000 to \$49,999.....	2	2	276	226,417	424,208	3.6
\$2,500,000 to \$4,999,999.....	11	14	3,137	11,573,920	89,362,488	45.8	\$100,000 to \$249,999.....	3	3				
\$5,000,000 and over.....	4	4					\$250,000 to \$499,999.....	3	3	823	675,853	1,766,071	15.0
Minnesota, total.....	75	85	10,078	16,038,428	125,333,930	100.0	\$500,000 to \$999,999.....	1	1				
\$20,000 to \$49,999.....	2	2	53	71,521	212,448	0.2	\$1,000,000 to \$2,499,999.....	3	3	4,238	4,735,132	9,587,635	81.4
\$50,000 to \$99,999.....	2	2					\$2,500,000 to \$4,999,999.....	1	1				
\$100,000 to \$249,999.....	7	7	235	383,297	1,205,991	1.0							
\$250,000 to \$499,999.....	12	13	746	1,082,545	4,454,450	3.6							
\$500,000 to \$999,999.....	19	20	2,101	3,316,709	13,734,040	10.9							
\$1,000,000 to \$2,499,999.....	22	29	3,226	5,146,779	30,618,583	24.4							
\$2,500,000 to \$4,999,999.....	7	8	3,717	6,037,547	75,107,813	59.9							
\$5,000,000 and over.....	4	4											

<sup>1</sup> Less than one-tenth of 1 per cent.

<sup>2</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

POWER

Power equipment in use in 1929 (Table 12).—The data for electric motors driven by energy generated in the reporting enterprises are not included in the "aggregate horsepower," as shown in this and other tables, since such inclusion would result in duplication of the figures for the horsepower of the prime movers used in driving the generators. Approximately 75 per cent of the prime-mover power was used directly and about 25 per cent was employed in driving generators.

Table 12 gives also a classification of motive power according to the nature of its use, whether stationary or mobile. The latter class embraces the power equipment of shovels, mine locomotives, and other machinery moved from place to place in the course of operations, as contrasted with fixed installations, such as central power plants, hoisting equipment, etc.

The number and horsepower of the several types of prime movers and of the electric motors used by all iron-ore mining enterprises in 1929 are given, by States, in Table 25.

TABLE 12.—POWER EQUIPMENT, STATIONARY AND MOBILE—NUMBER AND RATED CAPACITY OF PRIME MOVERS, MOTORS, AND GENERATORS, FOR THE UNITED STATES: 1929

TYPE	PRIME MOVERS AND ELECTRIC MOTORS DRIVEN BY PURCHASED ENERGY												Electric motors driven by energy generated by enterprises reporting		Electric generators		
	Aggregate horsepower	Total horsepower of prime movers	Prime movers				Horsepower rating of inactive prime movers <sup>1</sup>	Electric motors driven by purchased energy		Number	Horsepower	Number					Kilowatts
			Number	Horsepower	Number	Horsepower		Number	Horsepower				Number	Horsepower			
Total.....	498,821	222,154	845	171,232	32	33,017	40	4,005	14	13,900	23,593	5,266	276,667	690	40,688	43	41,895
Stationary.....	353,009	124,672	243	74,250	32	33,017	31	3,605	14	13,900	10,605	3,662	228,337	420	34,358	43	41,895
Mobile.....	145,812	97,482	602	96,982			15	500			12,988	1,604	48,330	261	6,330		

<sup>1</sup> Included in "Total horsepower of prime movers."

Summary: 1909-1929 (Table 13).—Although the aggregate horsepower used increased substantially during the period covered by this table, that of prime

movers decreased 35.1 per cent, while the power of electric motors operated by purchased energy increased more than sixtyfold.

TABLE 13.—POWER EQUIPMENT—NUMBER AND RATED CAPACITY OF PRIME MOVERS AND MOTORS, 1929, 1919, AND 1909, AND OF GENERATORS, 1929, FOR THE UNITED STATES

TYPE	1929	1919	1909	PER CENT OF INCREASE OR DECREASE (—)		TYPE	1929	1919	1909	PER CENT OF INCREASE OR DECREASE (—)	
				1919-1929	1909-1919					1919-1929	1909-1919
Prime movers and electric motors driven by purchased energy, aggregate horsepower.....	498,821	370,859	346,534	34.5	7.0	Prime movers—Continued					
Prime movers, total horsepower.....	222,154	273,477	342,069	-18.8	-20.1	Electric motors driven by purchased energy—					
Steam engines—						Number.....	5,266	1,341	55	292.7	(1)
Horsepower.....	171,232	231,184	3,563	-63.8	-25.9	Horsepower.....	276,667	97,382	4,465	184.1	2,081.0
Steam turbines—			326,753	(1)	-20.5	Electric motors driven by energy generated by enterprises reporting:					
Number.....	32	25	(1)	(1)		Number.....	600	1,112	326	-38.0	241.1
Horsepower.....	33,017	28,521	(1)	(1)		Horsepower.....	40,688	67,695	13,295	-39.8	408.4
Internal-combustion engines—						Electric generators:					
Number.....	46	45	27	(1)	(1)	Number.....	43	(2)	(3)		
Horsepower.....	4,005	5,397	2,651	-25.8	103.6	Kilowatts.....	41,805	(2)	(3)		
Water wheels and water turbines—											
Number.....	14	22	30	(1)	(1)						
Horsepower.....	13,900	8,375	12,685	66.0	-33.9						

<sup>1</sup> Per cent not computed where base is less than 100.

<sup>2</sup> No data.

<sup>3</sup> Not called for on schedule.

TABLE 14.—POWER EQUIPMENT—NUMBER AND RATED CAPACITY OF PRIME MOVERS AND MOTORS, BY STATES: 1929, 1919, AND 1909

STATE	Census year	PRIME MOVERS AND ELECTRIC MOTORS DRIVEN BY PURCHASED ENERGY										Electric motors driven by energy generated by enterprises reporting <sup>1</sup>	
		Aggregate horsepower	Total horsepower of prime movers	Prime movers				Electric motors driven by purchased energy					
				Steam engines and steam turbines		Internal-combustion engines		Water wheels and water turbines		Number	Horsepower		
				Number	Horsepower	Number	Horsepower	Number	Horsepower	Number	Horsepower	Number	Horsepower
United States.....	1929	408,821	222,154	877	204,249	46	4,005	14	13,900	5,266	276,667	690	40,688
	1919	370,859	273,477	2,358	259,705	45	5,397	22	8,375	1,341	97,382	1,112	67,595
	1909	346,534	342,069	3,563	326,753	27	2,651	30	12,665	55	4,465	1,112	67,595
Per cent of increase or decrease (—):													
1919-1929.....		34.5	-18.8	-62.8	-21.4	(2)	-25.8	(2)	66.0	292.7	184.1	-37.9	-39.8
1909-1919.....		7.0	-20.1	-33.8	-20.5	(2)	103.6	(2)	-33.9	(2)	2,081.0	241.1	408.4
Minnesota.....	1929	184,042	104,609	563	103,063	20	1,608			2,106	79,373	151	3,594
	1919	135,924	110,831	1,216	110,059	18	772			462	25,093	430	13,563
	1909	145,068	145,068	1,412	145,010	5	53					121	4,338
Per cent of increase or decrease (—):													
1919-1929.....		35.4	-5.6	-53.7	-6.4	(2)	108.0			355.8	216.3	-65.4	-73.6
1909-1919.....		-0.3	-23.6	-13.9	-24.1	(2)	(2)					260.3	212.7
Michigan.....	1929	173,477	75,203	145	61,293	2	10	14	13,900	1,573	98,274	429	27,294
	1919	142,559	94,778	668	89,629	4	49	16	8,100	507	47,781	504	40,672
	1909	108,427	108,262	1,205	96,017	4	35	24	12,210	18	165	149	7,341
Per cent of increase or decrease (—):													
1919-1929.....		21.7	-20.7	-78.3	-29.2	(2)	(2)	(2)	71.6	210.3	105.7	-14.9	-32.7
1909-1919.....		31.5	-12.5	-44.6	-9.8	(2)	(2)	(2)	-33.7	(2)	238.3	238.3	452.7
Alabama.....	1929	61,442	23,170	119	23,130	2	40			430	38,272	36	5,807
	1919	36,890	28,720	251	28,690	1	80			105	8,170	28	4,614
	1909	31,838	31,838	208	31,838							6	50
Per cent of increase or decrease (—):													
1919-1929.....		66.6	-19.8	-52.6	-19.4	(2)	(2)			309.5	368.4	(2)	25.9
1909-1919.....		15.9	-9.8	-6.3	-9.9							(2)	(1)
New York.....	1929	24,471	8,000	6	8,000					232	16,471	18	1,320
	1919	21,172	13,175	30	13,025			2	150	187	7,997	43	2,984
	1909	22,520	18,220	124	17,223	6	747	2	260	42	4,300	30	966
Per cent of increase or decrease (—):													
1919-1929.....		15.6	-39.3	(2)	-38.6					38.9	106.0	(2)	-55.8
1909-1919.....		-6.0	-27.7	-75.8	-24.4				-40.0	(1)	86.0	(2)	208.9
Wisconsin.....	1929	16,983	3,550	4	3,550					276	13,433		
	1919	6,732	2,885	19	2,760			4	125	45	3,847	6	385
	1909	8,975	8,975	122	8,959	2	16					1	8
Per cent of increase or decrease (—):													
1919-1929.....		152.3	23.1	(2)	28.6					(2)	249.2		
1909-1919.....		-25.0	-07.9	-84.4	-69.2							(1)	(1)
Other States.....	1929	38,406	7,562	40	5,213	22	2,349			649	30,844	56	2,673
	1919	27,582	23,088	174	18,542	22	4,546			55	4,494	97	5,477
	1909	29,706	29,706	432	27,706	10	1,795	4	205			19	592
Per cent of increase or decrease (—):													
1919-1929.....		39.2	-67.2	-77.0	-71.9	(1)	-48.3			(2)	586.3	(2)	-51.2
1909-1919.....		-7.2	-22.3	-59.7	-33.1	(1)	153.3					(1)	325.2

<sup>1</sup> Figures for electric generators shown in Table 25 for 1929; not available for 1919 and 1909.

<sup>2</sup> Per cent not computed where base is less than 100.

Horsepower per mine, per thousand tons of ore, and per wage earner, by States: 1909-1929 (Table 15).—The great increase in the horsepower per mine is due more to the decrease in the number of small mines than to the absolute increase in the installation of power equipment. The figures for the country as a

whole show a slight increase during the recent decade in the horsepower per thousand tons of ore mined, but the average for 1929 is identical with that for 1909. The horsepower per wage earner, however, was more than twice as large in 1929 as in either 1909 or 1919.

TABLE 15.—RATED CAPACITY OF POWER EQUIPMENT IN USE—AVERAGES PER MINE, PER WAGE EARNER, AND PER THOUSAND TONS OF ORE PRODUCED, BY STATES: 1929, 1919, AND 1909

STATE	Census year	Number of mines	Iron ore produced, tons (2,240 pounds)	Wage earners (average for the year)	HORSEPOWER RATING OF POWER EQUIPMENT				STATE	Census year	Number of mines	Iron ore produced, tons (2,240 pounds)	Wage earners (average for the year)	HORSEPOWER RATING OF POWER EQUIPMENT					
					Total	Per mine	Per 1,000 tons of iron ore produced	Per wage earner						Total	Per mine	Per 1,000 tons of iron ore produced	Per wage earner		
United States	1929	208	73,063,485	28,516	498,821	2,398	6.7	17.5	Alabama—Contd.										
	1919	406	61,173,254	45,741	370,859	013	6.1	8.1	Per cent of increase or decrease (—):										
	1909	483	51,047,129	47,245	346,534	717	6.7	7.3	1919-1929										
									1909-1919										
Minnesota	1929	85	46,815,208	10,078	184,042	2,165	3.9	18.3	Wisconsin	1929	3	1,618,103	948	16,983	5,061	10.5	17.9		
	1919	141	30,258,483	16,236	135,024	064	3.7	8.4		1919	8	1,062,948	1,145	6,732	842	6.3	5.9		
	1909	101	20,127,918	14,078	145,068	1,436	5.0	9.7	Per cent of increase or decrease (—):	1909	11	975,016	1,261	8,975	816	9.2	7.1		
									1919-1929										
									1909-1919										
Michigan	1929	57	15,238,400	8,894	173,477	3,044	11.4	19.5	New York	1929	5	823,543	874	24,471	4,894	29.7	25.1		
	1919	100	15,410,494	16,160	142,559	1,426	9.3	8.8		1919	7	868,995	1,811	21,172	3,025	24.4	11.7		
	1909	83	11,902,693	14,989	108,427	1,300	9.0	7.2	Per cent of increase or decrease (—):	1909	10	1,238,720	2,082	22,520	1,186	18.2	10.8		
									1919-1929										
									1909-1919										
Alabama	1929	18	6,424,478	5,336	61,442	3,413	9.6	11.5	Other States	1929	40	3,043,744	2,286	38,400	900	12.6	16.8		
	1919	48	5,053,035	6,485	30,890	768	7.3	5.7		1919	102	2,519,299	3,904	27,582	270	10.9	7.1		
	1909	52	4,687,468	6,170	31,838	612	6.8	6.2		1909	217	3,025,314	8,759	20,706	137	7.0	3.4		

<sup>1</sup> Figures for 1909 represent crude ore only, and therefore are not strictly comparable with those for 1919 and 1929, which refer chiefly to concentrates.  
<sup>2</sup> Colorado, 3 mines; Georgia, 4; Missouri, 6; Montana, 1; Nevada, 2; New Jersey, 4; New Mexico, 2; North Carolina, 1; Pennsylvania, 5; Tennessee, 7; Utah, 3; Washington, 1; Wyoming, 1.  
<sup>3</sup> Arkansas, California, Connecticut, Georgia, Idaho, Maryland, Massachusetts, Missouri, Montana, New Jersey, New Mexico, North Carolina, North Carolina, Pennsylvania, Tennessee, Texas, Utah, Virginia, Washington, Wyoming. (Numbers of mines not available.)  
<sup>4</sup> Colorado, Connecticut, Georgia, Kentucky, Maryland, Massachusetts, Missouri, Nevada, New Jersey, New Mexico, North Carolina, Ohio, Pennsylvania, Tennessee, Texas, Utah, Virginia, West Virginia, Wyoming. (Numbers of mines not available.)

Size of enterprises according to total rating of power equipment (Table 16).—Those enterprises, 60 in number, having power equipment rating of 2,500 or more horsepower used 76.9 per cent of the aggregate power employed in the industry. In the largest

four horsepower classes a considerable portion of the prime-mover power was reported as inactive, indicating displacement of this equipment, mainly by electric motors driven by purchased energy.

TABLE 16.—NUMBER AND RATED CAPACITY OF PRIME MOVERS, MOTORS, AND GENERATORS, FOR ENTERPRISES CLASSIFIED ACCORDING TO TOTAL RATING OF POWER EQUIPMENT, FOR THE UNITED STATES: 1929

HORSEPOWER RATING OF POWER EQUIPMENT PER ENTERPRISE	Number of enterprises reporting power equipment <sup>1</sup>	PRIME MOVERS AND ELECTRIC MOTORS DRIVEN BY PURCHASED ENERGY											Electric motors driven by energy generated by enterprises reporting		Electric generators			
		Aggregate horsepower	Total horsepower of prime movers	Steam engines		Steam turbines		Internal-combustion engines		Water wheels and water turbines		Horsepower rating of inactive prime movers <sup>2</sup>					Electric motors driven by purchased energy	
				Number	Horsepower	Number	Horsepower	Number	Horsepower	Number	Horsepower		Number	Horsepower	Number	Horsepower		
		Number	Horsepower	Number	Horsepower	Number	Horsepower	Number	Horsepower	Number	Horsepower	Number	Horsepower	Number	Horsepower	Number	Kilo-watts	
Total	170	498,821	222,154	845	171,232	32	33,017	46	4,005	14	13,900	23,593	5,266	276,867	690	40,688	43	41,895
Less than 25	1																	
25 to 99	8	447	405	9	238			8	167				2	42				
100 to 249	11	1,644	1,209	12	1,005			3	204			100	13	435	13	104	1	90
250 to 499	9	3,263	801	13	475			7	326				51	2,462	6	150	1	75
500 to 999	25	13,748	5,585	76	5,565								345	13,183	18	389	1	150
1,000 to 2,499	56	91,225	25,373	171	23,303	2	160	9	1,910			170	1,405	65,852	104	3,432	10	1,850
2,500 to 4,999	36	130,484	45,838	200	44,570	19	107	11	1,161			3,245	1,576	84,646	149	3,963	7	1,470
5,000 to 9,999	13	94,789	47,246	121	35,816	5	5,430					7,925	699	47,543	129	6,848	3	8,000
10,000 to 24,999	11	158,221	95,717	243	60,260	6	27,320	8	237			10,995	1,175	62,504	271	25,802	15	29,060

<sup>1</sup> No power equipment was reported by 10 enterprises.

<sup>2</sup> Included in "Total horsepower of prime movers."

TIME IN OPERATION

Days per week in operation (Table 17).—The 6-day week prevailed in 86.1 per cent of the enterprises.

These reported 95.2 per cent of the total value of products and 93 per cent of the total number of wage earners.

TABLE 17.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO NUMBER OF DAYS IN OPERATION PER WEEK, FOR THE UNITED STATES: 1929

DAYS PER WEEK	Number of enterprises	Number of mines	Wage earners, Dec. 14 or nearest representative day	Wages	Value of products	DAYS PER WEEK	Number of enterprises	Number of mines	Wage earners, Dec. 14 or nearest representative day	Wages	Value of products
Total.....	180	208	28,582	\$40,905,190	\$197,334,548	Five.....	9	10	794	\$1,074,148	\$3,190,611
Not reported.....	1	1	96	95,272	1,160,281	Five and one-half.....	9	9	935	1,318,803	3,843,106
Six and one-half.....	2	4				Six.....	155	179	26,572	38,178,191	187,782,970
						Seven.....	4	5	185	238,776	1,351,630

<sup>1</sup> This total differs slightly from that for "Wage earners (average for the year)," 28,518, given in other tables of this report.

Days per year in operation (Table 18).—Over 57 per cent of the total value of products was contributed by 79 mines which operated continuously throughout

the year, and practically all the remainder was produced by enterprises which operated from 150 to 300 days.

TABLE 18.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO NUMBER OF DAYS IN OPERATION IN 1929, FOR THE UNITED STATES AND FOR SELECTED STATES

STATE AND DAYS IN OPERATION	Number of enterprises	Number of mines	Wage earners, Dec. 14 or nearest representative day	Wages	Value of products	STATE AND DAYS IN OPERATION	Number of enterprises	Number of mines	Wage earners, Dec. 14 or nearest representative day	Wages	Value of products
United States, total.....	180	208	28,582	\$40,905,190	\$197,334,548	Michigan, total.....	49	57	8,701	\$13,040,659	\$43,194,938
50 to 74.....	2	2	287	74,199	175,022	100 to 149.....	1	1	345	470,075	3,250,788
75 to 99.....	2	2				150 to 199.....	3	3			
100 to 149.....	7	7	328	207,105	2,405,760	200 to 249.....	5	5	400	650,529	2,109,431
150 to 199.....	23	24	1,909	2,755,241	23,035,085	250 to 299.....	18	19	3,898	5,248,548	19,035,808
200 to 249.....	22	25	2,068	2,674,654	22,493,101	300 and over.....	22	29	3,908	0,073,509	18,791,911
250 to 299.....	45	51	7,071	10,461,677	30,312,472	Alabama, total.....	18	18	4,930	5,637,402	11,777,914
300 and over.....	79	97	16,939	24,672,314	112,011,548	50 to 74.....	1	1	487	260,253	609,686
Minnesota, total.....	75	85	10,388	16,038,428	125,333,930	75 to 99.....	1	1			
75 to 99.....	1	1	310	234,288	2,321,788	200 to 249.....	2	2	1,062	2,177,284	5,219,935
100 to 149.....	4	4				250 to 299.....	4	4			
150 to 199.....	17	18	1,147	2,014,941	10,280,535	300 and over.....	5	10	2,790	3,199,805	5,948,294
200 to 249.....	9	12	1,014	1,557,408	13,593,597						
250 to 299.....	12	13	1,060	1,727,902	10,182,541						
300 and over.....	52	57	6,867	10,703,801	74,655,504						

<sup>1</sup> This total differs slightly from that for "Wage earners (average for the year)," 28,516, given in other tables of this report.  
<sup>2</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

PERSONS ENGAGED

Persons engaged, by class and sex (Table 19).—Of the total number of persons employed in iron-mining

enterprises in 1929, only 167, or one-half of 1 per cent, were females. Salaried officers and employees numbered 2,182, or 7.1 per cent of the total.

TABLE 19.—PERSONS ENGAGED, BY SEX, BY STATES: 1929

[This table does not include data for salaried officers and employees of "Central Administrative" offices. See Table 20]

STATE	ALL CLASSES			PROPRIETORS AND FIRM MEMBERS		PRINCIPAL SALARIED OFFICERS OF CORPORATIONS		OTHER SALARIED OFFICERS AND EMPLOYEES		WAGE EARNERS (AVERAGE FOR THE YEAR)	
	Total	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
United States.....	30,707	30,540	167	9		22		2,002	158	23,507	9
Minnesota.....	11,132	11,092	40			4		1,010	40	10,078	
Michigan.....	9,407	9,388	19			4		491	18	8,893	1
Alabama.....	5,674	5,597	77					266	72	5,331	5
New York.....	1,021	1,010	11			4		32	11	974	
Wisconsin.....	1,010	1,006	4					58	4	948	
Pennsylvania.....	729	725	4			1		44	4	680	
New Jersey.....	406	399	7			4		34	7	361	
Other States.....	1,328	1,323	5	9		5		67	2	1,242	3



MINES AND QUARRIES

Central-administrative-office employees (Table 20).—This table was compiled from data reported separately on special schedules and not included in

the returns for the operating enterprises. Figures for these employees are included only in this table and in Table 3.

TABLE 20.—CENTRAL-ADMINISTRATIVE-OFFICE EMPLOYEES—NUMBER, BY SEX, AND SALARIES, FOR THE UNITED STATES: 1929

CLASS	NUMBER			Salaries
	Total	Male	Female	
Total.....	291	243	48	\$1, 213, 178
Principal salaried officers of corporations.....	68	68	—	669, 492
Other central-administrative-office employees.....	223	175	48	543, 686

Size of enterprises according to number of wage earners (Table 21).—Of the 180 enterprises engaged in the industry, 131 enterprises employed more than 50 wage earners each and accounted for 96.1 per cent of

the total number. Only 11 enterprises employed more than 500 wage earners each, but these reported nearly one-third of the total number of wage earners employed in the industry.

TABLE 21.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO NUMBER OF WAGE EARNERS, FOR THE UNITED STATES AND FOR SELECTED STATES: 1929

STATE AND NUMBER OF WAGE EARNERS PER ENTERPRISE	Number of enterprises	Number of mines	Wage earners (average for the year)		Wages	Value of products	STATE AND NUMBER OF WAGE EARNERS PER ENTERPRISE	Number of enterprises	Number of mines	Wage earners (average for the year)		Wages	Value of products
			Number	Per cent of total						Number	Per cent of total		
United States, total.....	180	208	28, 516	100. 0	\$40, 906, 190	\$197, 334, 543	Alabama, total.....	13	18	5, 336	100. 0	\$5, 637, 402	\$11, 777, 914
None.....	1	1	20	0. 1	38, 713	214, 120	0 to 20.....	1	1	360	6. 7	316, 255	701, 454
1 to 5.....	7	7	153	0. 5	194, 367	983, 867	21 to 50.....	1	1	738	13. 8	586, 015	1, 488, 825
6 to 20.....	13	13	949	3. 3	1, 335, 912	13, 001, 900	51 to 100.....	4	4	238	79. 4	4, 735, 132	9, 587, 035
21 to 50.....	28	31	3, 452	12. 1	5, 107, 454	22, 538, 910	101 to 250.....	2	2	974	100. 0	1, 416, 581	3, 554, 000
51 to 100.....	46	40	9, 663	33. 9	14, 318, 594	76, 392, 497	251 to 500.....	3	3	—	—	—	—
101 to 250.....	59	76	6, 262	18. 5	7, 726, 541	38, 846, 637	501 to 1, 000.....	1	1	—	—	—	—
251 to 500.....	16	20	—	—	—	—	1, 001 to 2, 500.....	1	1	—	—	—	—
501 to 1, 000.....	10	11	—	—	—	—	New York, total.....	5	5	—	—	—	—
1, 001 to 2, 500.....	1	3	—	—	—	—	1 to 5.....	1	1	—	—	—	—
Minnesota, total.....	75	85	10, 078	100. 0	10, 038, 428	125, 333, 930	6 to 20.....	1	1	—	—	—	—
None.....	5	5	50	0. 5	60, 052	797, 598	21 to 50.....	1	1	—	—	—	—
1 to 5.....	15	17	834	5. 3	865, 238	10, 996, 878	51 to 100.....	1	1	—	—	—	—
6 to 20.....	19	19	1, 336	13. 3	2, 167, 833	14, 051, 413	101 to 250.....	1	1	—	—	—	—
21 to 50.....	28	35	—	—	—	—	501 to 1, 000.....	1	1	—	—	—	—
51 to 100.....	4	4	18, 158	80. 9	12, 039, 305	99, 458, 343	Wisconsin, total.....	3	3	—	—	—	—
101 to 250.....	4	4	—	—	—	—	21 to 50.....	1	1	—	—	—	—
251 to 500.....	4	5	—	—	—	—	101 to 250.....	1	1	—	—	—	—
501 to 1, 000.....	1	1	—	—	—	—	501 to 1, 000.....	1	1	—	—	—	—
Michigan, total.....	49	57	8, 894	100. 0	13, 049, 659	43, 194, 038	None.....	1	1	—	—	—	—
None.....	3	3	114	1. 3	162, 094	1, 290, 699	1 to 5.....	1	1	—	—	—	—
1 to 5.....	14	14	1, 150	13. 0	1, 737, 691	6, 011, 085	6 to 20.....	1	1	—	—	—	—
6 to 20.....	22	20	3, 635	40. 9	5, 399, 060	18, 946, 301	21 to 50.....	1	1	—	—	—	—
21 to 50.....	9	10	—	—	—	—	51 to 100.....	1	1	—	—	—	—
51 to 100.....	1	1	3, 989	44. 9	5, 749, 914	16, 946, 853	101 to 250.....	1	1	—	—	—	—
101 to 250.....	—	—	—	—	—	—	501 to 1, 000.....	—	—	—	—	—	—
251 to 500.....	—	—	—	—	—	—	—	—	—	—	—	—	—
501 to 1, 000.....	—	—	—	—	—	—	—	—	—	—	—	—	—

<sup>1</sup> The work in this mine was done on contract, and therefore no wage earners were reported.  
<sup>2</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

Prevailing hours of labor (Table 22).—More than half of the wage earners in the industry were employed in enterprises in which the prevailing hours per week were 48 and most of the remainder were reported by enterprises whose working hours were 54 or more.

Only 4.9 per cent of the total number of wage earners were employed in mines in which the hours of labor were less than 48. The working week of 54 hours or over was reported for most of the wage earners in Alabama and for more than half of those in Minnesota.

TABLE 22.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO PREVAILING HOURS OF LABOR PER WEEK, FOR THE UNITED STATES AND FOR SELECTED STATES: 1929

STATE AND PREVAILING HOURS OF LABOR PER WEEK	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	Value of products	STATE AND PREVAILING HOURS OF LABOR PER WEEK	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	Value of products
United States, total.....	180	208	28,516	\$40,908,190	\$197,334,548	Michigan—Continued					
Not reported.....	1	1				48	38	46	7,328	\$10,782,206	\$34,931,000
40.....	4	4	1,424	604,932	1,387,292	Over 48 but under 54.....	1	1	1,692	1,061,104	5,205,477
44 and over but under 48.....	1	1				54 and over but under 63.....	5	5			
48.....	87	99	15,103	22,843,909	73,737,405	Alabama, total.....	13	18	5,336	5,637,402	11,777,914
Over 48 but under 54.....	7	7	974	1,468,314	4,468,288	Over 48 but under 54.....	2	2	1,533	5,637,402	11,777,914
54 and over but under 63.....	74	89	11,648	15,616,095	116,292,615	54 and over but under 63.....	11	16			
63 and over.....	2	2				New York, total.....	5	5	974	1,416,581	3,554,606
Minnesota, total.....	75	85	10,078	16,038,428	125,333,930	Over 40 but under 44.....	1	1			
44 and over but under 48.....	3	3	413	697,208	2,288,231	48.....	3	3	1,974	1,416,581	3,554,606
48.....	28	29	4,267	6,802,282	29,989,001	54 and over but under 63.....	1	1			
54 and over but under 63.....	42	48	15,398	8,538,938	60,002,698	Wisconsin, total.....	3	3	948	1,405,100	4,394,869
63 and over.....	2	2				48.....	3	3	948	1,405,100	4,394,869
Michigan, total.....	40	57	8,894	13,049,659	43,104,938						
40.....	3	3									
44 and over but under 48.....	2	2	1,874	1,216,346	3,058,362						

<sup>1</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.  
<sup>2</sup> Nearly all these wage earners were employed by the 3 enterprises in the 48-hour class.

Wage earners employed, by months (Tables 23 and 24).—Underground mines employed approximately three-fourths of the total number of wage earners in the industry. In these mines employment was very regular throughout the year, but for open-pit mines the number reported for the month of maximum employment was nearly twice that for the month of minimum employment. Of the total number employed

in underground mines, over three-fourths were employed below ground, and the number thus employed constituted 55.6 per cent of the total for the industry. The greatest fluctuation of employment during the year for any important iron-mining State was reported in Minnesota and was due to low employment from November to April in open-pit mines.

TABLE 23.—WAGE EARNERS, BY MONTHS, FOR UNDERGROUND MINES, EMPLOYED BELOW GROUND AND ON THE SURFACE, AND FOR OPEN-PIT MINES, FOR THE UNITED STATES AND FOR SELECTED STATES: 1929

[The month of maximum employment is indicated by bold-faced figures and that of minimum employment by *italic* figures]

STATE AND CLASS OF MINE	Average number employed during year	NUMBER EMPLOYED ON 15TH DAY OF MONTH OR NEAREST REPRESENTATIVE DAY												Per cent minimum is of maximum
		January	February	March	April	May	June	July	August	September	October	November	December	
United States, total.....	28,516	<i>25,649</i>	26,114	26,033	28,630	29,859	30,278	30,223	30,300	29,984	29,499	28,104	26,016	84.7
Underground mines, total.....	20,920	<i>20,661</i>	20,808	20,717	21,005	20,764	20,804	20,869	21,162	21,241	21,127	20,803	20,924	97.3
Below ground.....	16,861	<i>16,724</i>	16,882	15,706	16,885	15,700	15,696	<i>15,693</i>	15,998	16,074	16,051	15,928	15,990	97.7
Surface.....	5,059	<i>4,937</i>	4,926	5,011	5,120	5,058	5,108	5,176	5,164	5,167	5,076	4,965	<i>4,934</i>	95.3
Open-pit mines.....	7,596	<i>4,988</i>	5,246	5,916	7,625	9,095	9,474	9,354	9,138	8,743	8,372	7,211	5,992	52.6
Minnesota, total.....	10,078	<i>7,619</i>	7,883	8,295	9,986	11,397	11,718	11,674	11,606	11,857	10,887	9,881	8,694	65.0
Underground mines, total.....	4,770	<i>4,694</i>	4,776	4,687	4,747	4,780	<i>4,665</i>	4,766	4,823	4,941	4,862	4,743	4,785	94.4
Below ground.....	3,840	<i>3,759</i>	3,809	<i>3,724</i>	3,801	3,880	3,750	3,829	3,925	4,015	3,941	3,870	3,877	92.8
Surface.....	921	<i>935</i>	907	963	946	901	915	937	907	926	921	873	908	89.0
Open-pit mines.....	5,308	<i>2,925</i>	3,107	3,608	5,289	6,647	7,048	6,908	6,783	6,416	6,025	5,088	3,909	41.5
Michigan, total.....	8,894	<i>8,448</i>	8,574	8,667	8,898	8,879	9,037	9,006	9,186	9,228	9,079	8,864	8,801	91.5
Underground mines, total.....	8,548	<i>8,225</i>	8,353	8,385	8,633	8,493	8,652	8,663	8,797	8,825	8,680	8,502	8,464	93.2
Below ground.....	6,204	<i>6,021</i>	6,122	6,147	6,193	6,129	6,219	6,205	6,336	6,361	6,207	6,200	6,215	94.7
Surface.....	2,344	<i>2,204</i>	2,251	2,238	2,540	2,804	2,433	2,453	2,461	2,464	2,383	2,302	2,240	86.4
Open-pit mines.....	346	<i>223</i>	221	282	365	386	385	403	389	403	399	362	337	54.8
Alabama, total.....	5,336	<i>5,071</i>	5,085	5,600	5,751	5,415	5,301	5,282	5,280	5,057	5,006	4,979	<i>4,964</i>	86.3
Underground mines, total.....	4,538	<i>4,948</i>	4,862	4,790	4,886	4,842	4,491	4,453	4,482	4,315	4,212	4,223	4,267	85.1
Below ground.....	3,649	<i>3,950</i>	3,879	3,804	3,909	3,624	3,624	3,594	3,613	3,480	3,426	3,439	3,464	87.2
Surface.....	889	<i>1,018</i>	983	986	977	918	867	859	864	835	787	784	793	77.0
Open-pit mines.....	798	<i>723</i>	773	900	865	873	810	829	798	742	794	756	707	78.6

MINES AND QUARRIES

TABLE 24.—WAGE EARNERS, BY MONTHS, BY STATES: 1929

[The month of maximum employment is indicated by bold-faced figures and that of minimum employment by italic figures]

STATE	Average number employed during year	NUMBER EMPLOYED ON 15TH DAY OF MONTH OR NEAREST REPRESENTATIVE DAY												Per cent minimum is of maximum
		January	February	March	April	May	June	July	August	September	October	November	December	
United States.....	28,516	<b>25,640</b>	26,114	26,633	28,030	29,859	30,278	30,223	30,300	29,984	29,499	28,104	26,916	84.7
Minnesota.....	10,078	<i>7,619</i>	7,883	8,205	9,980	11,307	11,713	11,674	11,606	11,357	10,887	9,831	8,094	65.0
Michigan.....	8,894	<b>8,448</b>	8,574	8,667	8,898	8,879	9,037	9,096	9,186	9,228	9,079	8,864	8,801	91.5
Alabama.....	5,336	5,671	5,635	5,690	5,761	5,415	5,301	5,282	5,280	5,067	5,000	4,979	<b>4,964</b>	86.3
New York.....	974	996	1,080	1,030	990	902	<i>839</i>	855	842	880	945	1,057	1,286	65.2
Wisconsin.....	948	777	<i>764</i>	813	814	980	1,065	1,022	1,033	1,025	1,068	1,048	963	71.5
Pennsylvania.....	680	<i>637</i>	650	658	668	693	703	703	670	725	715	647	666	87.9
New Jersey.....	361	281	278	268	276	282	275	337	421	448	490	478	494	64.3
Colorado.....	65	63	66	67	61	63	63	65	66	63	66	66	64	89.7
N. Mex., Utah, and Wyo.....	607	642	645	618	626	649	621	613	595	582	625	525	543	80.9
Ga., Mo., N. C., and Tenn.....	562	508	523	508	588	678	649	594	589	601	604	596	404	62.2
Nev. and Wash.....	11	7	7	18	12	12	12	12	12	12	12	13	7	53.8

GENERAL TABLE

Table 25 presents in detail, for 1929, statistics relating to the iron-ore-mining industry for the United States as a whole and for each State for which separate figures can be given without disclosing, exactly or approximately, the data reported by individual enterprises.

TABLE 25.—DETAILED STATISTICS FOR THE INDUSTRY, BY STATES: 1929

	United States	Minnesota	Michigan	Alabama	Pennsylvania	Wisconsin
Number of enterprises <sup>1</sup> .....	180	75	49	13	4	3
Number of mines <sup>2</sup> .....	208	85	57	18	7	3
Persons engaged, total.....	30,707	11,132	9,407	5,674	720	1,010
Proprietors and firm members.....	0					
Principal salaried officers of corporations <sup>3</sup> .....	22	4	4		1	
Other salaried officers and employees <sup>4</sup> .....	2,100	1,050	509	338	48	92
Wage earners (average for the year).....	28,516	10,078	8,894	5,336	680	948
Principal expenses:						
Salaries and wages of—						
Principal officers of corporations <sup>5</sup> .....	\$95,470	\$14,500	\$23,200		\$14,750	
Other salaried officers and employees <sup>6</sup> .....	\$5,042,814	\$2,492,797	\$1,255,400	\$653,235	\$119,047	\$163,538
Wage earners.....	\$40,905,100	\$16,038,428	\$13,049,659	\$5,637,402	\$958,847	\$1,406,106
Contract work.....	\$1,553,134	\$1,473,841	\$16,305	\$2,479		
Supplies.....	\$18,561,157	\$8,568,830	\$5,170,069	\$2,212,803	\$382,344	\$558,448
Fuel.....	\$5,332,103	\$2,661,024	\$767,137	\$361,145	\$1,187,205	\$81,587
Purchased electric energy.....	\$4,607,488	\$1,532,550	\$1,794,284	\$350,600	\$278,585	\$182,395
Expenditures for development (included above in "Principal expenses").....	\$9,886,000	\$5,276,000	\$2,399,000	\$745,000	\$377,000	\$434,000
Value of products, total.....	\$107,334,548	\$125,368,930	\$43,194,938	\$11,777,914	\$4,515,586	\$4,394,869
Iron ore—						
Quantity..... tons (2,240 pounds).....	73,963,485	46,815,208	15,238,409	6,424,478	1,093,133	1,618,103
Value at mine.....	\$106,085,542	\$124,725,908	\$42,960,944	\$11,408,577	\$4,515,586	\$4,394,869
Other products, value.....	\$1,249,006	\$608,022	\$233,994	\$279,337	( <sup>7</sup> )	
Machinery and other equipment purchased during the year, total cost.....	\$3,593,941	\$2,281,704	\$604,630	\$246,782	\$74,384	\$205,308
Prime movers and electric motors driven by purchased energy, aggregate horsepower.....	498,821	184,042	173,477	61,442	16,448	16,983
Prime movers, total horsepower.....	<sup>10</sup> 222,154	104,609	75,203	23,170	7	3,550
Steam engines:						
Number.....	845	546	134	117		4
Horsepower.....	171,232	101,031	39,468	14,130		3,550
Steam turbines:						
Number.....	32	17	11	2		
Horsepower.....	33,017	2,032	21,825	9,000		
Internal-combustion engines:						
Number.....	46	20	2	2		
Horsepower.....	4,005	1,606	10	40		
Water wheels and water turbines:						
Number.....	14		14			
Horsepower.....	13,900		13,900			
Electric motors driven by purchased energy:						
Number.....	5,266	2,106	1,573	430	426	276
Horsepower.....	276,667	79,373	98,274	38,272	16,441	13,433
Electric motors driven by energy generated by enterprises reporting:						
Number.....	690	151	429	36		
Horsepower.....	40,688	3,594	27,294	5,807		
Electric generators:						
Number.....	43	10	18	2		
Kilowatts.....	11 41,895	3,900	24,325	6,760		
Fuel and electric energy consumed:						
Fuel—						
Coal—						
Anthracite..... tons (2,240 pounds).....	52,448	100	200		39,852	20
Bituminous..... tons (2,000 pounds).....	894,816	452,343	152,055	131,206	13,079	14,443
Coke..... tons (2,000 pounds).....	85,933	28,277	101	10,414	19	47,112
Fuel oils..... gallons.....	2,300,241	429,383	61,502	47,550	1,068,299	11,752
Gasoline and kerosene..... gallons.....	506,898	338,264	84,181	3,030	400	678
Gas, manufactured..... M cubic feet.....	2,227					2,227
Electric energy—						
Purchased..... kw.-hours.....	376,636,018	90,080,241	125,198,225	66,721,757	40,216,707	13,801,827
Generated by enterprises reporting..... kw.-hours.....	99,736,238	4,365,538	61,004,223	27,376,500		

See footnotes at end of table.

# IRON ORE

327

TABLE 25.—DETAILED STATISTICS FOR THE INDUSTRY, BY STATES: 1929—Continued

	New York	New Jersey	New Mexico, Utah, and Wyoming <sup>1</sup>	Georgia, Mis- souri, North Carolina, and Tennessee <sup>2</sup>	Colorado and Montana <sup>3</sup>	Nevada and Washington <sup>4</sup>
Number of enterprises <sup>5</sup> .....	5	4	0	14	4	3
Number of mines <sup>6</sup> .....	5	4	0	18	4	3
Persons engaged, total.....	1,021	400	047	506	71	14
Proprietors and firm members.....			2	2	3	2
Principal salaried officers of corporations <sup>7</sup> .....	4	4		5		
Other salaried officers and employees <sup>8</sup> .....	43	41	38	27	3	1
Wage earners (average for the year).....	974	361	007	582	65	11
Principal expenses:						
Salaries and wages of—						
Principal officers of corporations <sup>8</sup> .....	\$26,400	\$5,570		\$11,050		
Other salaried officers and employees <sup>8</sup> .....	\$121,502	\$81,520	\$95,195	\$63,035	\$7,305	\$240
Wage earners.....	\$1,416,581	\$605,070	\$1,101,543	\$580,872	\$97,748	\$23,805
Contract work.....		\$18,435		\$35,594	\$6,480	
Supplies.....	\$801,165	\$243,756	\$337,528	\$242,780	\$29,620	\$4,834
Fuel.....	\$129,672	\$33,454	\$40,068	\$66,645	\$2,440	\$1,060
Purchased electric energy.....	\$233,302	\$106,317	\$107,745	\$23,491	\$3,210	
Expenditures for development (included above in "Principal ex- penses").....	\$272,000	\$44,000	\$211,000	\$102,000	\$25,000	\$1,000
Value of products, total.....	\$3,554,606	\$1,161,159	\$1,821,182	\$1,228,042	\$300,355	\$42,967
Iron ore—						
Quantity..... tons (2,240 pounds).....	823,543	281,381	1,206,611	372,216	83,770	6,683
Value at mine.....	\$3,463,745	\$1,141,971	\$1,815,337	\$1,216,283	\$300,355	\$42,967
Other products, value.....	\$90,861	\$19,188	\$5,845	\$11,759		
Machinery and other equipment purchased during the year, total cost.....	\$39,655	\$53,193	\$69,109	\$16,116		\$3,000
Prime movers and electric motors driven by purchased energy, aggre- gate horsepower.....	24,471	8,741	7,901	4,008	371	37
Prime movers, total horsepower.....	8,000	2,400	1,551	3,333	234	37
Steam engines:						
Number.....	6	7	7	23	1	
Horsepower.....	8,000	2,250	750	1,973	80	
Steam turbines:						
Number.....				2		
Horsepower.....				160		
Internal-combustion engines:						
Number.....		1	7	5	2	5
Horsepower.....		160	801	1,200	154	37
Electric motors driven by purchased energy:						
Number.....	232	51	130	40	2	
Horsepower.....	10,471	6,341	6,350	1,575	137	
Electric motors driven by energy generated by enterprises reporting:						
Number.....	18	16		40		
Horsepower.....	1,320	720		1,953		
Electric generators:						
Number.....	6	2	3	2		
Kilowatts.....	5,360	300	500	700		
Fuel and electric energy consumed:						
Fuel—						
Coal—						
Anthracite..... tons (2,240 pounds).....	11,717	550				
Bituminous..... tons (2,000 pounds).....	14,009	4,605	5,782	16,452	240	
Coke..... tons (2,000 pounds).....		30				
Fuel oils..... gallons.....	138,334	36,297	56,988	411,176	8,660	
Gasoline and kerosene..... gallons.....	21,353	2,653	39,173	7,700	1,816	7,000
Electric energy—						
Purchased..... kw.-hours.....	22,652,619	6,471,660	7,618,010	2,793,304	81,668	
Generated by enterprises reporting..... kw.-hours.....	2,418,600	572,440		4,002,937		

<sup>1</sup> New Mexico, 2 enterprises; Utah, 3; Wyoming, 1.

<sup>2</sup> Georgia, 3 enterprises; Missouri, 6; North Carolina, 1; Tennessee, 4.

<sup>3</sup> Colorado, 3 enterprises; Montana, 1.

<sup>4</sup> Nevada, 2 enterprises; Washington, 1.

<sup>5</sup> See GENERAL EXPLANATIONS—The Enterprise.

<sup>6</sup> See GENERAL EXPLANATIONS—Milling and Manufacturing.

<sup>7</sup> Includes 2 mills for which separate reports were received.

<sup>8</sup> Not including data for salaried officers and employees of "Central Administrative" offices. (See Table 20).

<sup>9</sup> Data for secondary products—copper concentrates—included in figures for iron ore for Pennsylvania, to avoid disclosing data for an individual enterprise.

<sup>10</sup> Includes 23,593 horsepower reported for inactive prime movers.

<sup>11</sup> Includes 2,720 kilowatts reported for inactive generators.

# MINES AND QUARRIES—STONE

## INTRODUCTION

**Scope of the report.**—This report gives statistics for the census of mines and quarries for 1929 relating to the stone-quarrying industries. It shows the progress of these industries by comparison of the results of the census for 1929 with those for 1919 and 1909; the geographic distribution of the industries by States; the size of operating enterprises; power equipment, by kind, number, and capacity; time in operation for enterprises and the length of the working week for wage earners; the numbers of persons engaged in the industries, classified as proprietors and firm members, salaried officers and employees, and wage earners; and fuel consumption, by kind. It includes also a table presenting statistics in detail for the United States as a whole and for those States for which separate figures can be given without disclosing, exactly or approximately, the data reported by individual enterprises. In addition, statistics are given for those enterprises in the stone industries primarily engaged in the production of crushed stone; for enterprises producing crushed slag; for the production of limestone by lime and by cement manufacturers; and for those enterprises included in the stone industries which made combined returns for their quarrying and manufacturing activities.

Data for noncommercial enterprises (State, county, municipal, railroad, and public utility) are not included in the statistics for the stone industries. However, figures for the quantity of noncommercial stone produced in 1929 are given by industries in Table 1, and by States in Table 4.

**Definition of the industries.**—The statistics for the stone industries relate to the quarrying of stone of all kinds except operations, as noted in the following paragraphs, which are specifically omitted in order to avoid duplication of statistics for industries not classified as stone quarrying. The numerous varieties of stone, for purposes of the census, have been assigned to seven groups—limestone, granite, basalt, slate, marble, sandstone, and miscellaneous—and the statistics on quarry operations are herein presented for seven industries correspondingly designated.

The limestone industry includes the quarrying of limestone, of the related rock dolomite, cement rock, and relatively small quantities of calcareous marl, coquina, calcite, travertine, tufa rock, and other closely related stone. Data for the quarrying of limestone and related materials in connection with the manufacture of lime and cement are included in the statistics for the limestone industry, while statistics for the quarrying activities of lime and of cement manufacturers are also shown separately in Tables 26 and 27.

The granite industry embraces the quarrying of granite and related coarse-grained igneous rocks, gneiss, syenite, diorite, gabbro, and related rocks.

The sandstone industry includes the quarrying of sandstone, quartzite, argillite, mica schist, greenstones (Pennsylvania), freestone (Kentucky), bluestone (New York, Ohio, and Pennsylvania), brownstone (Connecticut and Pennsylvania), and related rocks. Exceptions to this are the quarrying and grinding of sandstone and quartzite for glass manufacture, for refractories, abrasives, and other purposes, the data for which are included in the glass-sand, molding-sand, silica, or abrasive-materials industries, according to the nature and purpose of the product; and the quarrying of siliceous mica schist used as ganister, data for which are included in the silica industry.

The basalt industry includes the quarrying of fine-grained igneous rocks, basalt, commonly known as trap rock, diabase, and other related rocks which are for the most part dark, heavy rocks, and which are used almost entirely as crushed stone.

The slate industry includes the quarrying of slate for use as roofing, in switchboards and other electrical apparatus, for structural purposes, sanitary ware, blackboards, etc., and as crushed "granules" for coating roofing felts, and other purposes.

The marble industry includes the quarrying of marble, serpentine (verde antique), dolomitic marble, and a small quantity of "onyx."

The miscellaneous-stone industry includes the quarrying of decomposed granite, red rock, chert, boulders, and other stone not classified as to kind in the returns made by some operators. Most of the product reported in this industry was crushed stone.

In addition to excluding data for certain quarrying operations, as noted above, data for the following activities were also excluded from the statistics for the stone industries: The quarrying and the shaping of stone for millstones and pulpstones, as these are presented separately as an industry; the quarrying of soapstone which is presented in the talc and soapstone industry; the quarrying of stones of various kinds for use as grindstones, hones, whetstones, scythestones, and rubbing stones, data for which are included in the statistics for the abrasive-materials industry; the quarrying of tripoli, quartzite, and other siliceous rock for use as abrasive materials, or as silica, or for other special uses, as data for such operations are included either in the statistics for the abrasive-materials industry or the silica industry.

Relatively little stone is used rough as obtained from the quarry but at most quarries the stone is broken, crushed, shaped, dressed, ground, or otherwise pre-

pared. The breaking of stone into rubble and riprap, and the crushing of stone for road work, ballast, concrete, or for other construction purposes are quite general and are closely connected with the quarrying operation, and data for these operations are included in the statistics for the several stone industries. On the other hand, the cutting, sawing, finishing, and polishing of stone for monumental, building, or other purposes, are considered as manufacturing operations and fall within the scope of the census of manufactures. Therefore, operators were requested to exclude data for these operations from their returns for their quarrying activities. Although such segregated returns were received in most cases, a number of operators filed returns covering both their quarrying and manufacturing operations. The data of these combined returns are necessarily included in the various tables of this report (as well as in the reports for the census of manufactures), but are also shown separately in Table 2 to indicate the relative importance of the data for this group to the statistics for the industries as a whole.

Quarrying enterprises engaged solely or principally in the production of crushed stone comprise a very substantial part of the stone industries. Accordingly, statistics for these are given separately in Tables 28 to 34, inclusive, although the data are also included in the statistics for the several stone industries. The same general policy was followed in 1919 in regard to manufacturing operations carried on by quarrying enterprises, but the proportion of segregated returns covering quarrying only was much higher for 1929 due to the special efforts to obtain such returns for the latter year. For 1919, combined reports covering both quarrying and manufacturing were filed by most of such operators.

Nonproducing quarries (development only) operated as separate enterprises represented an insignificant part of the stone-quarrying industries. Only 10 such enterprises were reported for 1929, and these expended a total of \$108,538 for development work.

Differences in the quantity and value of products as reported by the Bureau of the Census and the Bureau of Mines.—Bureau of Mines statistics represent stone used or sold by producers, while those of the Census

Bureau represent stone quarried (or crushed, in case of boulders and stone derived from miscellaneous sources). Data for noncommercial production (State, county, municipal, public utility, and railroad) are included in the Bureau of Mines figures, but excluded from the statistics for the stone industries in the census report, except that data for quantities produced are shown separately in Tables 1 and 4 only. Data for the production of ganister are included in the statistics for sandstone, and those of siliceous mica schist in the statistics for miscellaneous stone, by the Bureau of Mines. On the other hand, data for the production of these products are included in the statistics of the silica industry by the Census Bureau.

The value figures given in the Bureau of Mines reports represent the value of the stone to the original producer (quarry operator) in the form in which sold, whether it be rough, crushed, shaped, or finished stone. The value figures of the census represent the value at the quarry of rough and crushed stone produced, and do not include the value of finished stone except in those cases for which segregated figures covering only quarrying operations could not be obtained. The values of products of these "combined" returns (i. e., those covering quarrying and finishing operations) are included in the various tables of this report, and are shown separately in Table 2.

The Bureau of Mines classifies the production of cement and lime in the mineral industries. Therefore, to prevent duplication in their figures of total value of mineral products, data for limestone and related materials quarried by lime and cement producers are not included in the Bureau of Mines statistics for the stone industries, but the quantities of limestone used in cement and lime manufacture are shown separately in their reports. On the other hand, data for quarrying operations of cement and lime producers are included in the census figures for the limestone industry, and statistics covering these classes are also shown separately in Tables 26 and 27. However, reports were not received for the quarrying operations of a number of lime and cement producers, for which the production figures are given in Table 4.

TABLE 1.—COMPARISON OF PRODUCTION AS REPORTED BY BUREAU OF THE CENSUS AND BY BUREAU OF MINES, FOR THE UNITED STATES: 1929

[See explanations preceding this table]

INDUSTRY	BUREAU OF THE CENSUS				BUREAU OF MINES <sup>1</sup>	
	Stone quarried		Noncommercial stone <sup>2</sup>		Stone sold or used by producers	
	Quantity (tons, 2,000 pounds)	Value <sup>3</sup>	Quantity (tons, 2,000 pounds)	Value	Quantity (tons, 2,000 pounds)	Value
Stone-quarrying industries, total.....	177,755,000	\$195,995,124	11,665,000	\$10,133,503	141,779,650	\$213,937,940
Limestone.....	144,263,000	117,267,784	4,699,000	4,203,555	100,680,960	118,906,071
Granite.....	8,304,000	30,881,873	2,451,000	1,420,413	10,826,730	34,225,110
Basalt.....	12,447,000	15,543,687	2,537,000	2,454,188	14,871,780	18,946,197
Slate.....	682,000	10,488,390			670,070	11,245,178
Marble.....	549,000	7,533,905			553,680	16,545,312
Sandstone.....	3,626,000	6,311,977	1,432,000	1,622,213	5,790,200	11,023,931
Miscellaneous.....	7,834,000	8,475,008	496,000	623,146	8,380,250	8,046,091

<sup>1</sup> Mineral Resources of the United States, 1929.

<sup>2</sup> Figures in italics not included in census totals. See explanations preceding Table 4, p. 332.

<sup>3</sup> Includes a small value for secondary products. See Table 7.

Inclusion of data for stone-manufacturing processes (Table 2).—Quarrying enterprises which also cut to shape, dressed, polished, etc., stone for building, monumental, or industrial purposes were requested to furnish segregated returns covering only their quarrying operations and excluding data for their finishing plants. This was done in most cases, although a number were unable or failed to do so. The statistics given in this report include data for manufacturing by these enterprises. In order to indicate the extent of such inclusion, statistics representing these "combined" returns are given in Table 2, by industries, for

those States for which figures may be shown. On the basis of tonnage these returns account for less than 1 per cent of the total tonnage, as contrasted with 12.4 per cent of the total value of products of the stone industries as defined for census purposes. Although segregated reports covering only quarrying operations were obtained whenever possible by the census for 1919, no similar record of the extent of inclusion of data for combined quarrying and manufacturing activities for that year is available. However, due to the special efforts made in this census, it is felt that such inclusion is less for 1929 than for 1919.

TABLE 2.—SUMMARY FOR THOSE ENTERPRISES WHICH INCLUDED MANUFACTURING DATA IN RETURNS: 1929

INDUSTRY AND STATE	Number of enterprises	Number of plants and quarries	Salaried employees	Wage earners (average for the year)	Salaries	Wages	Cost of supplies, fuel, and purchased electric energy	Quantity of stone quarried and used, tons (2,000 pounds)	Value of products	HORSEPOWER RATING OF POWER EQUIPMENT		FUEL CONSUMED		
										Prime movers	Electric motors driven by purchased energy	Bituminous coal, tons (2,000 pounds)	Fuel oils, gallons	Gasoline and kerosene, gallons
United States, total.....	201	227	758	9,102	\$2,217,770	\$11,830,326	\$3,341,666	1,625,115	\$24,387,680	16,689	44,518	68,527	225,766	126,548
Granite.....	91	104	387	4,351	1,049,418	5,954,221	2,029,598	977,045	12,366,021	8,950	18,251	24,143	103,655	106,648
Slate.....	73	82	199	3,347	486,456	3,898,688	676,522	232,321	7,128,483	5,929	13,708	25,346	7,000	9,100
Limestone.....	13	14	98	611	290,430	1,107,338	279,680	336,478	3,027,310	560	5,546	7,969	-----	5,400
Marble <sup>1</sup> .....	8	9	91	643	299,522	536,634	254,819	35,171	1,203,150	670	3,967	7,504	4,427	-----
Sandstone.....	16	18	33	250	91,944	333,450	101,047	44,100	661,807	880	3,046	3,565	20,734	5,100
GRANITE														
Massachusetts.....	19	20	92	1,089	330,959	1,775,047	459,932	254,773	3,470,437	3,870	3,936	10,368	61,454	22,200
Minnesota.....	10	20	70	745	233,931	1,008,708	601,742	59,081	2,745,366	495	4,264	2,320	3,300	-----
Georgia.....	8	8	31	695	100,794	650,852	188,624	250,234	1,267,493	342	2,806	2,557	52,000	11,665
Maine.....	8	8	18	560	49,432	741,790	70,460	105,540	1,140,534	526	2,673	2,233	2,357	1,000
Connecticut.....	6	6	11	160	31,794	279,068	57,358	37,808	410,466	590	331	1,700	-----	-----
New York.....	5	5	4	47	8,300	100,919	30,332	42,738	195,053	615	15	30	-----	41,370
Oklahoma.....	4	4	2	42	2,020	56,452	24,020	1,838	156,223	280	78	-----	6,000	12,420
New Hampshire.....	4	4	8	67	17,500	96,796	35,176	9,385	155,724	332	276	520	-----	4,000
Vermont.....	3	4	4	38	8,779	51,988	16,371	9,705	123,813	707	707	105	4,144	-----
Montana.....	4	4	8	27	21,209	37,075	10,358	3,215	107,717	64	179	6	40	3,813
Other States <sup>2</sup> .....	20	21	89	881	230,640	1,156,531	555,316	202,719	2,589,065	1,886	2,980	4,314	64,340	10,410
SLATE														
Pennsylvania.....	29	29	109	1,797	301,433	2,141,034	475,621	110,907	3,761,631	4,640	6,981	21,166	7,000	5,600
Vermont.....	32	40	65	1,013	132,060	1,295,771	124,992	69,516	2,502,111	105	5,507	800	-----	300
Virginia.....	4	5	15	413	39,360	301,007	52,302	15,948	524,820	722	-----	3,001	-----	-----
New York.....	5	5	5	70	6,180	99,000	13,797	32,878	260,708	22	1,081	44	-----	3,000
Other States <sup>3</sup> .....	3	3	5	54	6,323	61,371	9,810	3,072	79,213	140	139	335	-----	-----
LIMESTONE														
Indiana.....	8	9	77	448	228,059	863,577	182,959	186,343	2,487,991	380	4,337	5,212	-----	-----
Other States <sup>4</sup> .....	5	5	21	163	62,371	243,761	96,721	150,136	539,319	180	1,209	2,757	-----	5,400
SANDSTONE														
New York.....	9	9	14	121	35,080	157,547	57,697	21,077	310,146	745	836	2,624	20,700	3,500
Other States <sup>5</sup> .....	7	9	19	129	56,864	176,903	43,350	23,023	351,661	185	2,210	941	34	1,600

<sup>1</sup> Alabama, 2 enterprises; Arkansas, 1; California, 1; Maryland, 1; New York, 1; Tennessee, 1; Vermont, 1.  
<sup>2</sup> California, 1 enterprise; Colorado, 1; Maryland, 1; Missouri, 1; North Carolina, 2; Oregon, 1; Pennsylvania, 1; Rhode Island, 2; South Carolina, 2; South Dakota, 2; Texas, 1; Washington, 3; Wisconsin, 2.

<sup>3</sup> Maine, 1 enterprise; Maryland, 1; New Jersey, 1.

<sup>4</sup> Minnesota, 2 enterprises; Ohio, 1; Pennsylvania, 1; Wisconsin, 1.

<sup>5</sup> Ohio, 1 enterprise; Pennsylvania, 2; Virginia, 1; Washington, 2; Wisconsin, 1.

Quantity of stone produced, by industries, by States (Table 3).—This table presents statistics for the production of stone by those enterprises falling within the scope of the census, and for which statistics given in other tables of this report apply (except those tables of limited scope, which are so designated). In addition to the production shown in this table, a considerable quantity was produced by enterprises not included

within the scope of the census, or for which incomplete or no returns were received. The figures for the production of these enterprises, together with explanations of their relationship to other statistics of this report, are given in Table 4, and are not included in other tables of this report. By combining the figures given in Tables 3 and 4, the total quantities produced by the various States may be determined.

TABLE 3.—QUANTITY OF STONE PRODUCED, BY INDUSTRIES AND STATES: 1929

[In order to avoid disclosure of data for individual enterprises, the figures for certain States have been combined and are included in "Undistributed." The combined totals for all stones for the individual States include these data except where indicated by footnotes]

STATE	Total	INDUSTRY						
		Limestone	Granite	Basalt	Slate	Marble	Sandstone	Stone, miscellaneous
		(Tons, 2,000 pounds) <sup>1</sup>						
United States, total.....	177,765,000	144,263,000	8,364,000	12,447,000	682,000	549,000	3,623,000	7,834,000
Alabama.....	3,019,000	2,950,000				40,000	(?)	(?)
Arizona.....	187,000	100,000	(?)			(?)	(?)	(?)
Arkansas.....	780,000	158,000		(?)		3,000	(?)	(?)
California.....	10,839,000	3,458,000	1,390,000	986,000	(?)	(?)	803,000	4,188,000
Colorado.....	<sup>2</sup> 807,000	728,000	50,000			(?)	29,000	
Connecticut.....	2,670,000	81,000	46,000	2,515,000		(?)	(?)	
Delaware.....	<sup>(4)</sup>		(?)					
District of Columbia.....	<sup>(4)</sup>		(?)					
Florida.....	<sup>3</sup> 2,303,000	2,366,000						(?)
Georgia.....	<sup>6</sup> 1,409,000	771,000	570,000		(?)	69,000		
Idaho.....	151,000		(?)	149,000			(?)	
Illinois.....	12,010,000	11,896,000						114,000
Indiana.....	6,206,000	5,904,000						302,000
Iowa.....	<sup>7</sup> 2,978,000	2,978,000						(?)
Kansas.....	<sup>8</sup> 3,318,000	3,258,000					(?)	60,000
Kentucky.....	<sup>7</sup> 2,626,000	2,510,000					(?)	116,000
Louisiana.....	<sup>(4)</sup>	(?)						
Maine.....	699,000	445,000	236,000	(?)	(?)			(?)
Maryland.....	1,801,000	1,155,000	113,000	449,000	(?)	(?)		40,000
Massachusetts.....	<sup>7</sup> 3,424,000	238,000	1,080,000	1,921,000		31,000	(?)	204,000
Michigan.....	18,144,000	18,056,000	(?)	(?)		(?)		(?)
Minnesota.....	539,000	320,000	87,000	(?)		(?)	(?)	(?)
Missouri.....	7,082,000	6,553,000	18,000			94,000		397,000
Montana.....	318,000	298,000	16,000			(?)		(?)
Nebraska.....	<sup>(4)</sup>	(?)						
Nevada.....	<sup>(4)</sup>	(?)						(?)
New Hampshire.....	<sup>9</sup> 92,000		92,000					(?)
New Jersey.....	3,801,000	1,225,000	(?)	2,468,000	(?)	(?)	(?)	(?)
New Mexico.....	<sup>(4)</sup>	(?)						(?)
New York.....	<sup>8</sup> 13,070,000	11,910,000	239,000	(?)	111,000	50,000	129,000	625,000
North Carolina.....	1,381,000	(?)	1,332,000			(?)		(?)
Ohio.....	17,263,000	16,950,000					218,000	89,000
Oklahoma.....	2,787,000	2,678,000	2,000				(?)	(?)
Oregon.....	1,261,000	186,000	(?)	307,000		(?)	(?)	(?)
Pennsylvania.....	29,837,000	26,520,000	326,000	1,508,000	179,000		656,000	339,000
Rhode Island.....	147,000	(?)	112,000	(?)				(?)
South Carolina.....	1,095,000		1,095,000					
South Dakota.....	229,000	55,000	16,000				158,000	
Tennessee.....	2,502,000	2,353,000				105,000	(?)	(?)
Texas.....	5,139,000	4,988,000	9,000	(?)				(?)
Utah.....	317,000	306,000	(?)			(?)		
Vermont.....	533,000	55,000	154,000		222,000	102,000		
Virginia.....	4,441,000	3,248,000	913,000	(?)	53,000		161,000	(?)
Washington.....	1,308,000	825,000	(?)	331,000		(?)	(?)	143,000
West Virginia.....	4,044,000	4,004,000					(?)	(?)
Wisconsin.....	<sup>8</sup> 3,998,000	3,655,000	314,000				29,000	(?)
Wyoming.....	385,000	361,000	(?)				(?)	
Undistributed <sup>1</sup> .....		681,000	195,000	1,813,000	117,000	56,000	1,143,000	1,208,000

<sup>1</sup> Quantities expressed in tons of 2,000 pounds include, in many cases, approximate equivalents of quantities reported in various other units by the quarry operators.  
<sup>2</sup> See headnote.  
<sup>3</sup> Exclusive of data for the marble industry, to avoid disclosure of data for individual enterprises.  
<sup>4</sup> A total production of 1,236,000 tons of stone was reported for those States not shown separately.  
<sup>5</sup> Exclusive of data for the miscellaneous-stone industry.  
<sup>6</sup> Exclusive of data for the slate industry.  
<sup>7</sup> Exclusive of data for the sandstone industry.  
<sup>8</sup> Exclusive of data for the basalt industry.



Production of stone not covered elsewhere in this report (Table 4).—The figures of production given in this table pertain to those enterprises for which data are not included in other tables of this report. They include data for the following:

(1) Production by noncommercial enterprises (i. e., plants operated by States, counties, municipalities, railroads, and public utilities). Such enterprises were not included in the canvass of the mining and quarrying industries by the Bureau of the Census. Practically all of the product of this group was crushed stone, with minor quantities of riprap and rubble, and was used principally in the construction of roads, bridges, dams, and as ballast.

(2) Production by a number of small producers of lime, who were not requested to file separate returns for their quarrying operations. The figures given for these are estimates based upon the quantity of lime produced. Data for the production of limestone by other lime producers are included in the tables for the industry, except where otherwise indicated, and are shown separately in Table 27.

(3) Production by 17 cement manufacturers, who were unable or failed to supply segregated returns covering their quarrying operations. Data for the quarrying operations of other cement producers are included in the general tables, and are shown separately in Table 26.

(4) Production by 26 limestone enterprises from which incomplete or no reports were received due to cessation of operations at the time of canvass and for other reasons. Most of the production of this group was contributed by manufacturers (chiefly chemical) for whom listings were not on record at the Census Bureau when preparations for the canvass were made.

(5) Production of sandstone and siliceous mica schist which was ground for use as glass sand, or for use as refractory material, etc. Enterprises so engaged are classified in the glass-sand, molding-sand, or silica industries according to the nature and use of the final product.

(6) Production by mining enterprises in which the quarrying of stone was of secondary importance, and for which separate returns were not made, the data having been included in the returns for the operations as a whole, and compiled in the industry classifications representing the principal products.

The presentation of the data given in this table permits the determination of the total production of stone, by States, by combination of these data with those given in Table 3. However, neither production figures nor other data pertaining to enterprises represented by this table are included in any other table in the stone report except Table 1, which gives data for non-commercial stone.

TABLE 4.—SUMMARY OF QUARRYING ACTIVITIES NOT COVERED ELSEWHERE IN THIS REPORT: 1929

[In some cases data are given in this table for 1 or 2 enterprises. This, however, does not constitute disclosure of data for individual enterprises, inasmuch as reports were received from a sufficient number of other enterprises in the State to avoid identification of the individual enterprises shown in this table.]

STATE	TOTAL		NONCOMMERCIAL STONE		PRODUCTION OF LIMESTONE BY CERTAIN ENTERPRISES ENGAGED IN 1—					Production of sandstone, etc., classified in the silica or other industries		Stone produced by metal-mining and other mining enterprises		
	1	2	3	4	Manufacture of lime		Manufacture of cement		Other		11	12	13	14
					5	6	7	8	9	10				
	Number of enterprises	Tons (2,000 pounds)	Number of enterprises	Tons (2,000 pounds)	Number of enterprises	Tons (2,000 pounds)	Number of enterprises	Tons (2,000 pounds)	Number of enterprises	Tons (2,000 pounds)	Number of enterprises	Tons (2,000 pounds)	Number of enterprises	Tons (2,000 pounds)
United States, total.....	482	24,495,000	327	11,085,000	44	483,000	17	4,816,000	26	3,633,000	45	2,814,000	23	1,284,000
Alabama.....	10	236,000	3	80,000	3	21,000	—	—	2	135,000	2	(?)	—	—
Arizona.....	9	513,000	8	513,000	1	(?)	—	—	—	—	—	—	—	—
Arkansas.....	4	(?)	2	(?)	1	(?)	—	—	—	—	—	—	—	—
California.....	27	2,478,000	24	2,456,000	1	10,000	—	—	—	—	1	(?)	—	—
Colorado.....	3	(?)	1	(?)	—	—	1	(?)	—	—	1	(?)	1	12,000
Florida.....	2	(?)	2	(?)	—	—	—	—	—	—	—	—	—	—
Georgia.....	1	(?)	1	(?)	—	—	—	—	—	—	—	—	—	—
Idaho.....	9	126,000	8	124,000	—	—	—	—	—	—	—	—	1	2,000
Illinois.....	15	811,000	10	193,000	1	20,000	—	—	—	—	—	—	1	70,000
Indiana.....	9	489,000	6	361,000	1	(?)	—	—	—	—	3	528,000	2	128,000
Iowa.....	6	1,024,000	2	(?)	—	—	2	930,000	1	30,000	—	—	1	64,000
Kansas.....	6	49,000	2	(?)	—	—	—	—	3	39,000	—	—	1	10,000
Kentucky.....	17	433,000	17	433,000	—	—	—	—	—	—	—	—	—	—
Maine.....	2	(?)	1	(?)	1	(?)	—	—	—	—	—	—	—	—
Maryland.....	6	85,000	1	(?)	1	(?)	—	—	2	58,000	1	(?)	1	27,000
Massachusetts.....	6	85,000	5	85,000	—	—	—	—	—	—	—	—	—	—
Michigan.....	13	1,103,000	5	82,000	1	(?)	5	973,000	1	48,000	1	(?)	—	—
Minnesota.....	6	121,000	5	121,000	—	—	1	(?)	—	—	—	—	—	—
Mississippi.....	2	(?)	2	(?)	—	—	—	—	—	—	—	—	—	—
Missouri.....	13	695,000	12	618,000	3	52,000	—	—	—	—	2	(?)	1	26,000
Montana.....	4	71,000	3	71,000	1	(?)	—	—	—	—	—	—	—	—
Nebraska.....	2	(?)	1	(?)	—	—	1	(?)	—	—	—	—	—	—
Nevada.....	2	(?)	1	(?)	—	—	—	—	—	—	—	—	—	—
New Hampshire.....	1	(?)	1	(?)	—	—	—	—	—	—	1	(?)	—	—
New Jersey.....	8	155,000	4	99,000	2	(?)	—	—	—	—	1	23,000	1	33,000

See footnotes at end of table.

TABLE 4.—SUMMARY OF QUARRYING ACTIVITIES NOT COVERED ELSEWHERE IN THIS REPORT: 1929—Contd.  
[See note at head of this table]

STATE	TOTAL		NONCOMMERCIAL STONE		PRODUCTION OF LIMESTONE BY CERTAIN ENTERPRISES ENGAGED IN —						Production of sandstone, etc., classified in the silica or other industries		Stone produced by metal-mining and other mining enterprises	
	1	2	3	4	Manufacture of lime		Manufacture of cement		Other		11	12	13	14
					5	6	7	8	9	10				
	Number of enterprises	Tons (2,000 pounds)	Number of enterprises	Tons (2,000 pounds)	Number of enterprises	Tons (2,000 pounds)	Number of enterprises	Tons (2,000 pounds)	Number of enterprises	Tons (2,000 pounds)	Number of enterprises	Tons (2,000 pounds)	Number of enterprises	Tons (2,000 pounds)
New Mexico.....	2	(?)	1	(?)	1	(?)								
New York.....	18	3,055,000	11	244,000			4	855,000	3	1,958,000			(?)	(?)
North Carolina.....	7	193,000	4	163,000					2	21,000			1	9,000
Ohio.....	34	964,000	22	152,000	4	45,000	1	314,000	3	446,000			(?)	7,000
Oklahoma.....	3	(?)	1	(?)			1	(?)			1	(?)		
Oregon.....	34	1,018,000	34	1,018,000										
Pennsylvania.....	61	2,577,000	26	70,000	6	29,000	1	503,000	6	742,000	18	1,121,000	4	112,000
Rhode Island.....	1	(?)	1	(?)										
South Dakota.....	2	(?)	2	(?)										
Tennessee.....	17	980,000	14	465,000	1	(?)							2	524,000
Texas.....	11	312,000	7	133,000	1	21,000			3	158,000				
Utah.....	6	6,000	2	(?)	3	6,000								
Vermont.....	5	34,000	3	26,000	1	(?)								
Virginia.....	26	496,000	16	213,000	5	75,000					2	20,000	3	185,000
Washington.....	32	885,000	31	885,000	1	(?)								
West Virginia.....	8	65,000	4	(?)							3	(?)	1	66,000
Wisconsin.....	25	855,000	18	587,000	4	96,000					3	172,000		
Wyoming.....	3	155,000	3	155,000										
Undistributed <sup>a</sup> .....		4,417,000		2,318,000		108,000		1,041,000				950,000		

<sup>1</sup> See explanations preceding Table 26, p. 363.  
<sup>2</sup> Included in "Undistributed" in order to avoid disclosing, exactly or approximately, the data reported by individual enterprises. However, these data are not included in the State total.  
<sup>3</sup> Included in the total of 1,750,000 tons reported for those States for which figures are not shown.  
<sup>4</sup> Includes a small quantity reported as a by-product from another mining industry.  
<sup>5</sup> Included in the figure for "Other" limestones.  
<sup>6</sup> Includes data for omissions from the table indicated in footnotes 2 and 3.

TABLE 5.—DISTRIBUTION OF SALES, BY MARKETING CHANNELS THROUGH WHICH STONE WAS SOLD BY PRODUCERS, BY INDUSTRIES: 1929

MARKETING CHANNELS	Total	Limestone	Granite	Basalt	Slate	Marble	Sandstone	Stone, miscellaneous
Total.....	(Value... \$193,502,254 Tons... 176,007,474)	\$115,607,183 142,819,586	\$29,760,629 8,288,566	\$15,549,800 12,312,394	\$10,381,327 678,066	\$7,807,847 608,031	\$6,418,656 3,640,845	\$8,476,812 7,847,486
Sales direct to nonaffiliated concentration, treatment, and quarry-products plants, and manufacturers.....	(Value... \$24,534,644 Tons... 20,036,578)	\$16,581,748 19,293,862	\$3,680,283 152,722	\$802,886 221,778	\$1,126,627 76,162	\$1,710,310 124,283	\$321,868 87,541	\$310,922 110,240
Transfers to owned or affiliated processing and manufacturing plants operated as separate units.....	(Value... \$46,018,988 Tons... 60,476,237)	\$35,701,923 59,267,962	\$3,370,087 340,276	\$62,089 46,528	\$1,871,995 256,799	\$3,801,364 268,079	\$1,008,340 234,031	\$208,205 62,562
Sales through subsidiary sales organizations conducted as distinct merchandising establishments.....	(Value... \$1,862,052 Tons... 1,228,173)	\$930,862 1,058,399	\$394 5	\$50,414 47,787	\$679,104 18,941	\$122,028 9,205	\$80,410 98,836	-----
Sales to wholesalers and jobbers.....	(Value... \$10,865,372 Tons... 3,029,203)	\$2,502,470 2,595,894	\$3,724,520 214,893	\$509,218 252,831	\$2,783,974 195,491	\$202,975 10,871	\$584,973 115,353	\$607,242 543,870
Sales through agents, brokers, and other dealers on a commission basis.....	(Value... \$4,844,620 Tons... 3,861,417)	\$3,256,936 3,211,913	\$429,585 58,842	\$118,412 85,201	\$447,326 18,647	\$189,909 7,016	\$154,177 48,001	\$298,275 430,797
Sales direct:								
Government agencies (Federal, State, and local).....	(Value... \$9,487,644 Tons... 8,379,660)	\$6,119,352 6,070,348	\$1,024,272 536,245	\$1,077,002 874,171	\$100,160 2,716	\$1,032 59	\$637,342 445,081	\$478,484 451,040
Contractors for Government construction.....	(Value... \$9,529,286 Tons... 8,738,204)	\$4,764,162 4,985,767	\$1,366,337 1,030,432	\$1,931,783 1,627,284	\$6,284 248	-----	\$425,550 366,139	\$1,086,170 728,844
Contractors for private construction.....	(Value... \$23,569,918 Tons... 18,299,876)	\$13,466,049 12,567,319	\$4,159,585 1,848,538	\$3,057,407 2,417,763	\$502,000 17,786	\$232,801 3,600	\$894,001 406,264	\$1,287,475 1,088,606
Railroads.....	(Value... \$9,069,244 Tons... 12,179,690)	\$6,380,353 8,264,563	\$1,006,050 1,204,027	\$1,863,166 1,724,867	\$10,000 410	\$23,757 11,653	\$510,030 649,580	\$176,888 324,630
Public utilities, other than railroads.....	(Value... \$1,506,640 Tons... 1,301,973)	\$1,019,186 1,009,279	\$115,526 97,523	\$168,642 123,778	\$1,100 16	\$122,088 8,500	\$31,285 3,856	\$48,863 59,021
Other direct sales.....	(Value... \$3,650,036 Tons... 9,382,810)	\$7,745,528 8,446,737	\$967,710 445,128	\$371,597 318,033	\$94,068 5,276	\$76,604 8,270	\$233,439 44,126	\$161,030 115,240
SALES NOT SEGREGATED BY INDIVIDUAL CHANNELS								
Sales direct:								
Government agencies (Federal, State, and local).....	(Value... \$2,136,058 Tons... 634,771)	-----	\$1,886,286 311,657	\$172,431 177,158	-----	-----	\$46,492 23,842	\$30,849 22,114
Contractors for Government construction.....	(Value... \$9,955,718 Tons... 7,806,144)	\$2,766,862 2,673,646	\$3,632,358 1,203,326	\$2,049,311 1,771,830	-----	-----	\$122,520 111,167	\$1,384,667 2,046,175
Contractors for private construction.....	(Value... \$15,554,241 Tons... 15,333,056)	\$9,978,815 10,877,902	\$678,468 491,038	\$2,772,733 2,158,010	-----	-----	\$701,839 714,325	\$1,422,866 1,091,150
Railroads.....	-----	-----	-----	-----	-----	-----	-----	-----
Public utilities, other than railroads.....	-----	-----	-----	-----	-----	-----	-----	-----
Other direct sales.....	-----	-----	-----	-----	-----	-----	-----	-----
Sales for which "distribution of sales" was not reported.....	(Value... \$13,614,181 Tons... 4,609,743)	\$4,210,051 2,626,005	\$3,674,939 353,284	\$542,709 465,375	\$2,808,089 97,484	\$874,919 87,095	\$630,376 292,703	\$872,498 817,797
Sales of miscellaneous products.....	(Value... \$452,717)	\$183,636	\$53,300	-----	-----	-----	\$41,014	\$174,858

<sup>1</sup> Tons, 2,000 pounds.

## PRINCIPAL STATISTICS

Summary for the United States (Table 6).—The stone-quarrying industries, as defined in preceding paragraphs, taken as a whole ranked fifth among the mineral-producing industries in total value of products and third in the number of wage earners employed. Individually, the several stone industries ranked in value of products as follows: Limestone, fifth; granite, tenth; basalt, twelfth; slate, fifteenth; marble, eighteenth; sandstone, twentieth; and miscellaneous, sixteenth. The total value of products reported for the stone industries (\$195,995,124) amounted to 8.2 per cent of the total value of products of all mining and quarrying industries (\$2,392,831,178) in 1929; and the number of wage earners employed in the stone industries (56,835) constituted 7 per cent of the total num-

ber of wage earners (806,418) in producing mining and quarrying enterprises in the United States. In terms of quantity of output (177,755,000 short tons), the tonnage reported for the stone industries was more than twice that of the iron-ore industry (73,963,485 long tons) or of the anthracite industry (66,558,839 long tons), and approximately one-third of that of the bituminous-coal industry (537,442,495 short tons). It also exceeded slightly the output (168,885,667 short tons) of the sand and gravel industry, as defined for census purposes. The limestone industry predominated among the stone industries, accounting for 59.8 per cent of the total value of products, 56.8 per cent of the total number of wage earners, and 81.2 per cent of the total tonnage produced.

TABLE 6.—SUMMARY FOR THE STONE-QUARRYING INDUSTRIES, FOR THE UNITED STATES: 1929

	Total	Limestone	Granite	Basalt	Slate	Marble	Sandstone	Stone, miscellaneous
Number of enterprises <sup>1</sup> .....	2,249	1,167	409	137	120	70	145	204
Number of quarries <sup>2</sup> .....	2,458	1,256	494	144	130	88	172	234
Persons engaged, total.....	62,066	35,582	11,191	3,439	4,450	3,504	2,466	2,244
Proprietors and firm members.....	1,165	497	279	51	86	7	84	161
Salaried officers and employees <sup>3</sup> .....	4,066	2,785	875	935	266	237	226	242
Wage earners (average for the year) <sup>4</sup> .....	56,835	32,300	10,037	3,053	4,098	3,350	2,156	1,841
Power equipment, total horsepower.....	329,041	535,466	108,217	63,881	38,817	30,198	28,035	28,527
Principal expenses, total <sup>5</sup> .....	\$126,847,273	\$75,993,430	\$20,647,446	\$8,680,650	\$6,917,871	\$4,088,260	\$4,581,214	\$5,098,402
Salaries <sup>6</sup> .....	\$13,070,564	\$7,188,813	\$2,588,145	\$900,123	\$710,604	\$580,243	\$527,053	\$565,683
Wages.....	\$69,533,003	\$39,188,364	\$12,639,524	\$4,498,093	\$4,984,038	\$3,201,541	\$2,626,437	\$2,405,906
Contract work.....	\$634,404	\$418,780	\$39,273	\$31,951	\$26,574	\$18,225	\$47,565	\$52,056
Supplies.....	\$30,384,370	\$20,735,789	\$8,618,511	\$2,201,847	\$602,441	\$553,619	\$683,204	\$1,628,968
Fuel.....	\$5,358,453	\$3,606,670	\$652,642	\$388,232	\$192,247	\$156,839	\$173,252	\$188,576
Purchased electric energy.....	\$7,865,565	\$4,795,034	\$1,109,351	\$651,404	\$441,967	\$387,793	\$222,803	\$257,213
Expenditures for development (included above in "Principal expenses").....	\$3,618,000	\$1,459,000	\$1,008,000	\$231,000	\$134,000	\$298,000	\$270,000	\$223,000
Value of products, total <sup>6</sup> .....	\$195,995,124	\$117,257,784	\$30,381,373	\$15,543,687	\$10,486,390	\$7,538,905	\$6,311,977	\$8,475,008
Stone produced— Approximate quantity (tons, 2,000 pounds) <sup>7</sup> .....	177,755,000	144,253,000	8,364,000	12,447,000	682,000	549,000	3,626,000	7,834,000
Value at quarry.....	\$194,675,202	\$116,505,734	\$30,291,311	\$15,494,241	\$10,486,390	\$7,523,550	\$6,256,667	\$8,117,309
Other products <sup>8</sup> .....	\$1,319,922	\$752,050	\$90,062	\$49,446	-----	\$15,355	\$55,310	\$357,699

<sup>1</sup> See GENERAL EXPLANATIONS—The Enterprise.<sup>2</sup> See GENERAL EXPLANATIONS—Milling and Manufacturing.<sup>3</sup> Not including data for salaried officers and employees of "Central Administrative" offices. (See Table 18.)<sup>4</sup> See GENERAL EXPLANATIONS—Persons Engaged.<sup>5</sup> See GENERAL EXPLANATIONS—Expenses.<sup>6</sup> See GENERAL EXPLANATIONS—Value of Products.<sup>7</sup> See Tables 3 and 4 for production by States.<sup>8</sup> Miscellaneous secondary products, and receipts for services performed for others and for power sold. (See Table 7.)

Secondary products (Table 7).—Quarrying enterprises reported a total of \$1,319,922 received for miscellaneous secondary products and services incidental to receipts for principal products. The amount of such receipts from various sources in each of the stone-quarrying industries is shown in Table 7.

TABLE 7.—VALUE OF SECONDARY PRODUCTS, BY INDUSTRIES: 1929

INDUSTRY	Total	Mineral products <sup>1</sup>	Miscellaneous and unspecified products	Power sold and miscellaneous services
Stone-quarrying industries, total.....	\$1,319,922	\$560,278	\$616,780	\$142,864
Limestone.....	752,050	299,116	328,035	123,999
Granite.....	90,062	49,025	33,537	7,500
Basalt.....	49,446	17,791	31,355	300
Marble.....	15,355	9,690	200	5,465
Sandstone.....	55,310	55,310	—	—
Miscellaneous.....	367,699	129,346	222,753	5,600

<sup>1</sup> Includes data for clay, coal, granite, gravel, grindstones, lime, marble, pulpstones, sand, sandstone, shale.

Rank of States according to value of products (Tables 8 and 9).—The ranking of States, given in these tables, is based upon the results obtained in

accordance with the scope of the census as defined in "GENERAL EXPLANATIONS." In addition to the limitations indicated in that section, the statistics do not include data for certain other enterprises as shown in Table 4. Pennsylvania ranked first among the States in the total value of products for the stone industries, contributing 14.6 per cent of the total. This State, together with the next 9 in rank, accounted for 62.7 per cent of the total. Pennsylvania ranked first in value of products for the limestone, slate, and sandstone industries; Massachusetts for the granite, New Jersey for the basalt, Tennessee for the marble, and California for the miscellaneous-stone industry. Although 46 States and the District of Columbia reported enterprises in the quarrying industries, 5 accounted for 56.1 per cent of the value of products of the limestone industry, 4 for 53.1 per cent of the granite industry, 4 for 70.3 per cent of the basalt industry, 2 for 76.1 per cent of the slate industry, 5 for 83.2 per cent of the marble industry, 4 for 67.7 per cent of the sandstone industry, and 1 (California) accounted for 44.7 per cent of the miscellaneous-stone industry.

TABLE 8.—PRINCIPAL STATES RANKED IN ORDER OF VALUE OF PRODUCTS: 1929

STATE	Number of enterprises	Number of quarries	Wage earners (average for the year)	VALUE OF PRODUCTS		STATE	Number of enterprises	Number of quarries	Wage earners (average for the year)	VALUE OF PRODUCTS	
				Amount	Per cent of total					Amount	Per cent of total
United States, total.....	2,249	2,458	56,835	\$195,995,124	100.0	Alabama.....	26	28	1,321	\$2,603,435	1.3
Pennsylvania.....	349	374	9,591	28,606,190	14.6	Kentucky <sup>2</sup> .....	70	71	1,210	2,455,225	1.2
New York <sup>1</sup> .....	151	166	2,735	14,290,170	7.3	Maryland.....	41	46	872	2,317,001	1.2
Ohio.....	135	142	3,128	13,563,904	6.8	Kansas <sup>3</sup> .....	87	89	742	2,188,372	1.1
Indiana.....	103	132	3,010	12,550,935	6.4	Iowa <sup>4</sup> .....	25	26	632	2,155,957	1.1
Michigan.....	19	21	1,614	11,271,899	5.8	Oklahoma.....	27	30	566	1,994,578	1.0
Vermont.....	95	119	2,952	9,445,159	4.8	Florida <sup>5</sup> .....	37	37	495	1,891,799	1.0
California.....	123	153	1,819	9,086,480	4.6	South Carolina.....	17	17	669	1,745,081	0.9
Massachusetts <sup>6</sup> .....	68	72	2,187	8,513,162	4.3	Washington.....	35	37	435	1,563,481	0.8
Illinois.....	57	60	1,680	8,040,268	4.1	Oregon.....	20	26	376	1,555,327	0.8
Missouri.....	102	111	2,947	7,656,045	3.9	Arkansas.....	15	18	369	1,170,058	0.6
Virginia.....	80	82	2,043	4,981,163	2.5	Colorado <sup>7</sup> .....	21	21	322	780,871	0.4
Minnesota.....	43	55	1,263	4,942,417	2.5	Rhode Island.....	12	12	245	732,437	0.4
New Jersey.....	38	41	994	4,837,141	2.5	New Hampshire <sup>8</sup> .....	18	20	315	706,259	0.4
Wisconsin <sup>9</sup> .....	76	81	1,140	4,360,899	2.2	South Dakota <sup>1</sup> .....	13	13	135	480,010	0.2
Tennessee.....	44	49	1,990	4,123,658	2.1	Wyoming.....	10	11	180	476,597	0.2
Connecticut.....	38	38	737	3,766,011	1.9	Montana.....	14	16	113	302,440	0.2
Georgia <sup>4</sup> .....	43	46	1,866	3,598,163	1.8	Utah.....	11	11	109	280,219	0.1
West Virginia.....	22	22	1,356	3,563,663	1.8	New Mexico.....	3	3	79	255,314	0.1
Texas.....	43	49	1,261	3,454,671	1.8	Arizona.....	8	8	109	244,170	0.1
North Carolina.....	74	74	1,487	3,331,244	1.7	Idaho.....	8	8	27	124,224	0.1
Maine.....	38	38	1,057	2,958,985	1.5	Other States <sup>3</sup> .....	31	35	688	3,156,756	1.6

<sup>1</sup> Not including data for 2 enterprises in the basalt industry. Included in figures for "Other States."  
<sup>2</sup> Not including data for 2 enterprises in the sandstone industry. Included in figures for "Other States."  
<sup>3</sup> Not including data for 1 enterprise in the miscellaneous-stone industry. Included in figures for "Other States."  
<sup>4</sup> Not including data for 1 enterprise in the slate industry. Included in figures for "Other States."  
<sup>5</sup> Not including data for 2 enterprises in the miscellaneous-stone industry. Included in figures for "Other States."  
<sup>6</sup> Not including data for 2 enterprises in the marble industry. Included in figures for "Other States."  
<sup>7</sup> Not including data for 3 enterprises in the limestone industry. Included in figures for "Other States."  
<sup>8</sup> Delaware, 2 enterprises; District of Columbia, 1; Louisiana, 1; Nebraska, 5; Nevada, 3. Also includes data for 10 enterprises covered by footnotes 1 to 7.

## MINES AND QUARRIES

TABLE 9.—CONDENSED SUMMARY FOR INDUSTRIES AND STATES, RANKED BY VALUE OF PRODUCTS: 1929

INDUSTRY AND STATE	Number of enterprises	Number of quarries	Wage earners (average for the year)	VALUE OF PRODUCTS		INDUSTRY AND STATE	Number of enterprises	Number of quarries	Wage earners (average for the year)	VALUE OF PRODUCTS	
				Amount	Per cent of total					Amount	Per cent of total
<b>Limestone, total</b> .....	<b>1,187</b>	<b>1,256</b>	<b>32,300</b>	<b>\$117,257,784</b>	<b>100.0</b>	<b>Basalt, total</b> .....	<b>137</b>	<b>144</b>	<b>3,053</b>	<b>\$15,543,687</b>	<b>100.0</b>
Pennsylvania.....	201	213	6,048	19,124,040	16.3	New Jersey.....	26	27	683	3,580,184	23.0
Indiana.....	91	116	2,881	12,247,190	10.4	Connecticut.....	19	10	420	2,024,085	13.0
Ohio.....	110	114	2,060	12,091,055	10.3	Pennsylvania.....	20	22	566	2,236,438	14.4
New York.....	69	73	1,998	11,339,087	9.7	Massachusetts.....	14	16	366	2,191,366	14.1
Michigan.....	14	16	1,506	11,059,922	9.4	California.....	16	17	221	1,015,900	6.5
Illinois.....	63	55	1,649	7,830,131	6.7	Maryland.....	7	7	232	599,034	3.9
Missouri.....	73	70	2,350	6,175,012	5.3	Washington.....	8	8	94	311,867	2.0
West Virginia.....	19	19	1,319	3,507,603	3.0	Oregon.....	10	10	83	309,766	2.0
Wisconsin.....	53	58	817	3,409,692	2.9	Idaho.....	5	5	22	111,771	0.7
Texas.....	30	41	1,170	3,171,522	2.7	Other States <sup>1</sup> .....	12	13	366	2,263,267	14.6
Virginia.....	63	64	1,270	3,011,695	2.6	<b>Slate, total</b> .....	<b>120</b>	<b>130</b>	<b>4,098</b>	<b>10,486,390</b>	<b>100.0</b>
Kentucky.....	57	58	1,147	2,336,085	2.0	Pennsylvania.....	33	33	1,951	4,330,001	41.3
Iowa.....	25	26	632	2,165,957	1.8	Vermont.....	63	67	1,303	3,653,796	34.8
Kansas.....	31	33	700	2,103,325	1.8	Virginia.....	6	7	489	850,882	8.1
California.....	23	24	675	1,976,716	1.7	New York.....	15	15	155	728,642	6.9
Florida.....	37	37	495	1,891,799	1.6	Other States <sup>1</sup> .....	8	8	200	923,069	8.8
Alabama.....	21	23	957	1,886,790	1.6	<b>Marble, total</b> .....	<b>70</b>	<b>88</b>	<b>3,360</b>	<b>7,538,905</b>	<b>100.0</b>
Oklahoma.....	18	21	507	1,775,772	1.5	Tennessee.....	13	14	1,377	2,287,938	30.3
Tennessee.....	29	32	573	1,736,472	1.5	Vermont.....	9	23	658	1,829,315	24.3
Maryland.....	20	23	409	1,653,733	0.9	Missouri.....	6	8	299	752,978	10.0
New Jersey.....	5	6	234	1,013,315	0.9	Georgia.....	5	5	286	749,737	9.9
Minnesota.....	10	10	233	815,027	0.7	Alabama.....	3	3	358	663,940	8.7
Washington.....	14	15	202	802,761	0.7	New York.....	9	9	105	393,536	5.2
Georgia.....	10	11	315	647,113	0.6	Massachusetts.....	4	4	68	202,091	2.7
Colorado.....	14	14	233	489,236	0.4	Arkansas.....	3	3	14	60,431	0.8
Wyoming.....	7	8	186	450,397	0.4	Other States <sup>1</sup> .....	18	19	185	608,979	8.1
Maine.....	4	4	114	423,571	0.4	<b>Sandstone, total</b> .....	<b>145</b>	<b>172</b>	<b>2,156</b>	<b>6,311,977</b>	<b>100.0</b>
Massachusetts.....	7	7	111	411,217	0.4	Pennsylvania.....	41	51	595	1,615,444	25.6
Oregon.....	4	4	65	324,050	0.3	Ohio.....	14	17	447	1,186,128	18.8
Utah.....	8	8	103	289,444	0.2	California.....	14	15	164	787,600	12.5
Montana.....	7	8	76	242,668	0.2	New York.....	30	41	276	680,875	10.8
Arkansas.....	6	6	120	184,574	0.2	South Dakota.....	6	6	58	195,707	3.1
Connecticut.....	4	4	61	155,261	0.1	Virginia.....	3	3	46	175,019	2.8
Arizona.....	4	4	62	133,640	0.1	Wisconsin.....	5	5	40	66,012	1.0
Vermont.....	4	4	39	69,696	0.1	Colorado.....	3	3	12	21,562	0.3
Other States <sup>1</sup> .....	16	18	324	880,275	0.8	Other States <sup>1</sup> .....	29	31	518	1,583,560	25.1
<b>Granite, total</b> .....	<b>409</b>	<b>434</b>	<b>10,037</b>	<b>30,381,373</b>	<b>100.0</b>	<b>Stone, miscellaneous, total</b> .....	<b>204</b>	<b>234</b>	<b>1,841</b>	<b>8,475,008</b>	<b>100.0</b>
Massachusetts.....	38	39	1,554	5,394,350	17.8	California.....	40	64	491	3,789,013	44.7
Vermont.....	24	25	952	3,892,352	12.8	Missouri.....	19	19	267	623,763	7.4
Minnesota.....	25	37	923	3,617,633	11.9	New York.....	15	15	96	593,467	7.0
North Carolina.....	67	67	1,396	3,213,624	10.6	Pennsylvania.....	30	30	168	593,783	7.0
Georgia.....	28	30	1,265	2,201,313	7.2	Massachusetts.....	5	6	88	314,223	3.7
Maine.....	30	30	881	2,155,640	7.1	Indiana.....	15	16	129	309,739	3.6
South Carolina.....	17	17	669	1,743,081	5.8	Illinois.....	4	5	37	210,137	2.5
California.....	24	27	235	1,409,534	4.6	Washington.....	7	7	42	135,677	2.2
Wisconsin.....	18	18	283	888,195	2.9	Kentucky.....	13	13	63	149,140	1.8
Virginia.....	5	5	200	861,347	2.8	Ohio.....	11	11	21	86,721	1.0
Pennsylvania.....	24	25	268	731,484	2.4	Kansas.....	6	6	42	80,047	0.9
New Hampshire.....	18	20	316	700,259	2.3	Maryland.....	5	5	31	69,852	0.8
Rhode Island.....	9	9	223	683,053	2.2	Other States <sup>1</sup> .....	34	37	366	1,495,541	17.6
Connecticut.....	12	12	217	670,899	1.9						
New York.....	13	13	105	604,519	1.7						
South Dakota.....	7	7	77	284,303	0.9						
Colorado.....	6	4	77	270,073	0.9						
Maryland.....	6	8	113	261,259	0.8						
Oklahoma.....	7	7	50	174,769	0.6						
Texas.....	5	6	57	140,834	0.5						
Montana.....	5	6	32	124,217	0.4						
Missouri.....	4	5	31	81,292	0.3						
Other States <sup>1</sup> .....	16	17	119	460,263	1.5						

<sup>1</sup> See Table 25.

PROGRESS OF THE INDUSTRIES

Summary for the United States: 1909-1929 (Table 10).—This table presents principal statistics for the stone industries as a whole, and for the individual industries, for 1929, 1919, and 1909. In order that growth or decline in the industries might be more accurately shown, the statistics have been revised to as nearly comparable bases as the figures for earlier years permit. For the limestone industry, the data for the quarrying operations of lime and cement manufacturers have been omitted from the figures for 1929 in this table (although included in other tables of this report) to make them comparable with the figures for 1919 and 1909. The figures for the sandstone industry for 1929 have been revised to include data for enterprises whose product was ground into glass sand, or used as refractory materials (ganister), etc., which are similarly included in the figures for 1919. In other tables of

this report, data for such enterprises are omitted, as these are included for 1929 in the figures for the glass-sand, molding-sand, or silica industries, according to the nature and purpose of the final product. No figures were compiled for miscellaneous-stone enterprises for 1919 and 1909, the data for these having been included in the several stone industries. For 1919, such production amounted to 1,150,840 tons, distributed among the industries as follows: Limestone, 21,790 tons; granite, 199,140 tons; sandstone, 412,370 tons; basalt, 517,540 tons. In addition, no data for 1929 are included for a number of enterprises for which incomplete or no reports were received, as indicated in Table 4, column 10. No data are included for any of the years for noncommercial (State, county, municipal, public utility, and railroad) production. As given, the statistics represent as nearly accurate comparisons as it is possible to present for the three censuses.

TABLE 10.—SUMMARY FOR THE UNITED STATES: 1929, 1919, AND 1909

	1929 <sup>1</sup>	1919	1909	PER CENT OF INCREASE OR DECREASE (—)	
				1919-1929	1909-1919
<b>STONE-QUARRYING INDUSTRIES</b>					
Number of enterprises <sup>2</sup> .....	2,056	1,820	2,088	13.0	-54.4
Number of quarries <sup>2</sup> .....	2,250	1,022	4,003	17.5	-53.2
Wage earners (average for the year) <sup>1</sup> .....	48,224	42,086	70,070	12.2	-45.0
Power equipment, total horsepower.....	658,234	376,748	303,442	74.7	24.2
Wages.....	\$58,633,416	\$45,534,798	\$39,661,871	28.8	14.8
Supplies and materials.....	\$24,957,734	\$18,441,459	\$8,800,184	35.3	109.0
Fuel.....	\$4,789,698	\$5,267,846		-9.1	114.9
Purchased electric energy.....	\$6,721,825	\$2,213,469	\$3,482,054	203.7	
Value of products <sup>2</sup> .....	\$170,898,034	\$101,684,919	\$75,992,908	68.1	33.8
Approximate quantity (tons, 2,000 pounds).....	122,928,000	67,844,000	( <sup>3</sup> )	81.2	
<b>LIMESTONE<sup>1</sup></b>					
Number of enterprises.....	929	895	2,665	3.8	-46.2
Number of quarries.....	1,004	925	1,916	8.5	-51.7
Wage earners (average for the year).....	22,267	22,069	30,289	0.9	-27.1
Power equipment, total horsepower.....	350,309	213,717	125,024	65.9	70.9
Wages.....	\$26,553,218	\$23,926,332	\$14,052,185	11.0	69.0
Supplies and materials.....	\$14,553,001	\$10,968,220	\$9,754,125	32.7	192.2
Fuel.....	\$2,773,037	\$2,897,432		-4.3	
Purchased electric energy.....	\$3,339,404	\$1,278,058	\$1,507,628	164.8	177.0
Value of products.....	\$36,225,787	\$52,948,924	\$29,832,492	62.9	77.5
Approximate quantity (tons, 2,000 pounds).....	36,608,000	49,715,000	( <sup>3</sup> )	74.2	
<b>GRANITE</b>					
Number of enterprises.....	406	358	2,707	13.4	-49.4
Number of quarries.....	434	381	826	13.9	-53.0
Wage earners (average for the year).....	10,037	8,049	18,744	24.7	-57.1
Power equipment, total horsepower.....	108,217	55,014	61,095	94.6	-9.0
Wages.....	\$12,630,524	\$8,537,669	\$11,112,195	47.2	-22.7
Supplies and materials.....	\$3,618,511	\$2,593,040	\$1,921,912	39.5	34.0
Fuel.....	\$652,642	\$833,636		-21.7	
Purchased electric energy.....	\$1,109,351	\$261,185	\$757,078	324.7	44.6
Value of products.....	\$30,881,373	\$18,279,345	\$18,997,976	66.2	-3.8
Approximate quantity (tons, 2,000 pounds).....	8,364,000	4,420,000	( <sup>3</sup> )	89.2	
<b>BASALT</b>					
Number of enterprises.....	187	163	2,196	-16.0	-16.8
Number of quarries.....	144	174	220	-17.2	-20.9
Wage earners (average for the year).....	3,053	3,336	5,256	-8.5	-36.5
Power equipment, total horsepower.....	63,881	37,307	29,211	71.2	27.7
Wages.....	\$4,488,093	\$3,991,307	\$2,538,964	12.7	57.2
Supplies and materials.....	\$2,201,847	\$2,030,869	\$1,018,090	8.4	99.5
Fuel.....	\$388,232	\$562,827		-31.0	
Purchased electric energy.....	\$651,404	\$157,161	\$270,082	314.5	158.0
Value of products.....	\$15,543,687	\$9,657,977	\$5,678,317	60.9	78.1
Approximate quantity (tons, 2,000 pounds).....	12,447,000	7,746,000	( <sup>3</sup> )	60.7	

See footnotes at end of table.

## MINES AND QUARRIES

TABLE 10.—SUMMARY FOR THE UNITED STATES: 1929, 1919, AND 1909—Continued

	1929 <sup>1</sup>	1919	1909	PER CENT OF INCREASE OR DECREASE (-)	
				1919-1929	1909-1919
<b>SLATE</b>					
Number of enterprises.....	120	101	2 185	18.8	-45.4
Number of quarries.....	130	104	219	25.0	-52.5
Wage earners (average for the year).....	4,098	3,513	8,803	16.7	-60.1
Power equipment, total horsepower.....	33,817	20,613	29,777	64.1	-30.8
Wages.....	\$4,884,038	\$3,128,249	\$4,088,653	56.1	-23.5
Supplies and materials.....	\$662,441	\$682,459	\$521,701	4.7	21.2
Fuel.....	\$192,247	\$228,954	\$327,397	-19.0	27.5
Purchased electric energy.....	\$441,967	\$188,505		134.5	
Value of products.....	\$10,436,300	\$5,720,792	\$6,054,174	83.3	-5.5
Approximate quantity (tons, 2,000 pounds).....	682,000	409,000	( <sup>6</sup> )	66.7	
<b>MARBLE</b>					
Number of enterprises.....	70	48	2 77	( <sup>7</sup> )	( <sup>7</sup> )
Number of quarries.....	88	62	108	( <sup>7</sup> )	-42.6
Wage earners (average for the year).....	3,350	1,732	6,168	93.4	-71.9
Power equipment, total horsepower.....	30,198	15,628	21,779	93.2	-28.2
Wages.....	\$3,291,541	\$1,452,440	\$3,079,028	126.6	-52.8
Supplies and materials.....	\$553,619	\$552,439	\$544,327	0.2	1.5
Fuel.....	\$156,339	\$147,644		0.2	
Purchased electric energy.....	\$387,793	\$76,741	\$261,689	405.3	-14.3
Value of products.....	\$7,538,905	\$4,397,912	\$6,239,120	71.4	-20.5
Approximate quantity (tons, 2,000 pounds).....	549,000	331,000	( <sup>6</sup> )	65.9	
<b>SANDSTONE<sup>1</sup></b>					
Number of enterprises.....	190	255	2 1,158	-25.5	-78.0
Number of quarries.....	225	276	1,314	-18.5	-79.0
Wage earners (average for the year).....	3,578	4,237	9,812	-16.5	-56.3
Power equipment, total horsepower.....	43,285	33,869	36,556	27.8	-7.4
Wages.....	\$4,355,996	\$4,448,811	\$4,700,851	-2.1	-6.6
Supplies and materials.....	\$1,739,347	\$1,064,432	\$1,039,969	4.5	60.0
Fuel.....	\$438,123	\$597,353	\$349,130	-26.7	142.0
Purchased electric energy.....	\$437,603	\$250,909		04.4	
Value of products.....	\$12,245,884	\$10,634,969	\$9,290,820	14.0	15.0
Approximate quantity (tons, 2,000 pounds).....	6,444,000	5,224,000	( <sup>6</sup> )	23.4	
<b>MISCELLANEOUS<sup>2</sup></b>					
Number of enterprises.....	204				
Number of quarries.....	234				
Wage earners (average for the year).....	1,841				
Power equipment, total horsepower.....	28,527				
Wages.....	\$2,405,906				
Supplies and materials.....	\$1,628,968				
Fuel.....	\$188,576				
Purchased electric energy.....	\$257,213				
Value of products.....	\$8,475,008				
Approximate quantity (tons, 2,000 pounds).....	7,834,000				

<sup>1</sup> The figures for 1929 for the limestone and the sandstone industries have been adjusted to make them comparable with 1919 and 1909. See explanations preceding this table, p. 337.

<sup>2</sup> See GENERAL EXPLANATIONS—The Enterprise. Figures for 1909 represent number of operators.

<sup>3</sup> See GENERAL EXPLANATIONS—Milling and Manufacturing.

<sup>4</sup> See GENERAL EXPLANATIONS—Persons Engaged.

<sup>5</sup> See GENERAL EXPLANATIONS—Value of Products.

<sup>6</sup> Figures not available for 1909.

<sup>7</sup> Per cent not computed where base is less than 100.

<sup>8</sup> For 1919 and 1909, the data for production of miscellaneous stone are included in the figures for the other stone industries (principally basalt and sandstone).

Principal statistics, for selected States: 1929 and 1919 (Table 11).—The States shown for each industry accounted for major or substantial portions of the quantities of stone produced for 1929, as shown in Table 10, as follows: Limestone, 75.4 per cent; granite, 40.8 per cent; basalt, 67.6 per cent; slate, 82.8 per cent; marble, 37.7 per cent; and sandstone, 50.1 per

cent. No figures for individual States for 1909 are available for the stone industries. In some cases the average value per ton appears to be excessive. This is accounted for by the inclusion of data for a relatively large proportion of values for finished stone products as compared with that representing rough quarried stone.

TABLE 11.—SUMMARY BY INDUSTRIES, FOR SELECTED STATES: 1929 AND 1919

[For totals for the stone-quarrying industries combined and for each industry separately, see Table 10]

INDUSTRY AND STATE	Number of enterprises	Number of quarries	Wage earners (average for the year)	Horse-power rating of power equipment	Wages	Supplies and materials	Fuel	Purchased electric energy	Value of products	Stone produced, approximate quantity, tons (2,000 pounds) <sup>1</sup>
LIMESTONE										
Pennsylvania: <sup>2</sup>										
1929.....	170	179	4,546	59,427	\$5,591,847	\$2,359,862	\$337,969	\$607,357	\$13,666,493	14,916,000
1919.....	184	200	5,573	30,155	6,824,164	2,758,379	559,643	255,957	12,881,213	10,686,000
Per cent of increase or decrease (—)			-18.4	97.1	-18.1	-14.4	-39.6	160.7	6.1	39.8
Indiana: <sup>3</sup>										
1929.....	87	112	2,087	44,468	3,833,584	779,501	173,018	463,989	11,712,318	4,657,000
1919.....	67	71	1,800	21,642	1,767,636	700,469	214,087	112,222	4,619,801	1,635,000
Per cent of increase or decrease (—)			49.3	105.5	116.9	11.3	-19.1	313.5	153.5	184.8
New York: <sup>2</sup>										
1929.....	56	59	1,631	37,113	2,557,442	1,769,853	305,277	397,928	10,315,769	9,398,000
1919.....	55	56	1,739	22,370	2,109,671	1,119,461	177,672	159,500	4,597,942	3,993,000
Per cent of increase or decrease (—)			-6.2	65.9	21.2	58.1	71.8	149.0	124.4	177.0
Michigan: <sup>2</sup>										
1929.....	10	11	1,270	103,725	1,917,734	4,104,096	700,864	68,094	9,892,597	15,383,000
Ohio: <sup>1</sup>										
1929.....	88	91	1,383	37,773	1,752,552	967,844	320,110	401,767	7,615,705	8,997,000
1919.....	90	91	2,262	39,881	2,327,169	1,339,758	494,038	200,673	6,742,499	7,703,000
Per cent of increase or decrease (—)			-38.9	-6.3	-24.7	-27.8	-35.2	100.2	13.0	16.8
Illinois: <sup>3</sup>										
1929.....	42	44	1,070	32,921	1,366,000	700,142	209,560	246,539	6,402,241	8,848,000
1919.....	41	41	1,244	22,325	1,447,647	835,598	231,915	158,053	3,776,626	4,059,000
Per cent of increase or decrease (—)			-14.0	47.6	-5.6	-16.2	-9.0	56.0	69.5	78.4
Missouri: <sup>2</sup>										
1929.....	61	65	1,683	12,584	1,544,151	588,068	85,822	150,999	4,119,870	3,083,000
1919.....	70	71	1,171	8,395	1,181,826	364,261	120,078	68,527	2,365,736	1,116,000
Per cent of increase or decrease (—)			43.7	51.8	30.7	61.6	-31.9	120.3	74.9	176.3
GRANITE										
Massachusetts:										
1929.....	38	30	1,554	14,553	2,624,198	469,607	111,844	137,996	5,394,350	1,030,000
1919.....	42	43	1,034	6,575	1,237,888	237,807	110,504	26,215	2,405,165	384,000
Per cent of increase.....			50.3	121.3	112.0	97.4	1.2	426.4	124.3	168.2
Vermont:										
1929.....	24	25	952	15,411	1,393,730	279,604	94,105	146,007	3,892,352	154,000
1919.....	27	31	1,062	10,769	1,225,256	778,439	135,472	39,379	3,583,734	133,000
Per cent of increase or decrease (—)			-10.4	43.1	13.8	-64.1	-30.5	270.8	9.2	15.8
Minnesota:										
1929.....	25	37	923	6,615	1,237,398	522,030	31,073	153,663	3,617,633	87,000
1919.....	27	34	392	3,675	477,028	98,902	55,475	33,074	1,135,391	75,000
Per cent of increase or decrease (—)			135.5	80.0	167.9	428.1	-44.0	364.6	218.6	16.0
North Carolina:										
1929.....	67	67	1,396	11,557	1,268,397	682,942	101,288	123,996	3,213,624	1,322,000
1919.....	16	18	959	2,025	808,657	185,227	90,181	3,119	1,576,260	547,000
Per cent of increase.....			45.6	470.7	60.6	268.7	12.3	3,875.5	103.9	143.5
Georgia:										
1929.....	28	30	1,265	7,497	1,033,884	225,776	47,164	61,253	2,201,313	570,000
1919.....	20	20	580	3,833	536,599	84,311	66,909	21,216	885,663	209,000
Per cent of increase or decrease (—)			118.1	95.6	92.7	167.8	-28.4	188.7	148.5	172.7
Maine:										
1929.....	30	30	881	6,345	1,188,248	52,689	45,452	45,114	2,155,640	236,000
1919.....	42	42	747	4,060	806,865	116,980	71,353	17,067	1,300,999	150,000
Per cent of increase or decrease (—)			17.9	55.7	47.5	-64.6	-36.3	164.3	65.7	57.3

See footnotes at end of table.



## MINES AND QUARRIES

TABLE 11.—SUMMARY BY INDUSTRIES, FOR SELECTED STATES: 1929 AND 1919—Continued

[See note at head of this table]

INDUSTRY AND STATE	Number of enterprises	Number of quarries	Wage earners (average for the year)	Horse-power rating of power equipment	Wages	Supplies and materials	Fuel	Purchased electric energy	Value of products	Stone produced, approximate quantity, tons (2,000 pounds) <sup>1</sup>
BASALT										
New Jersey:										
1929.....	26	27	683	14,510	\$1,104,636	\$518,694	\$77,602	\$168,055	\$3,580,184	2,408,000
1919.....	36	39	657	6,340	759,008	427,846	142,858	10,420	1,928,025	1,195,000
Per cent of increase or decrease (—)			7.2	128.9	46.5	21.2	-45.5	1,512.8	85.7	106.5
Connecticut:										
1929.....	19	19	420	7,470	722,983	118,333	86,742	95,532	2,024,085	2,515,000
1919.....	20	22	363	6,254	450,960	231,885	45,778	41,565	1,262,579	1,204,000
Per cent of increase or decrease (—)			15.7	19.4	60.3	-49.0	89.5	129.8	131.6	108.9
Pennsylvania:										
1929.....	20	22	566	12,188	716,609	364,280	107,364	68,613	2,236,438	1,508,000
1919.....	29	32	721	6,058	792,637	618,769	162,792	10,277	2,298,791	1,134,000
Per cent of increase or decrease (—)			-21.5	101.2	-0.6	-41.1	-29.7	567.6	-2.7	33.0
Massachusetts:										
1929.....	14	16	366	8,560	618,783	372,094	34,250	91,878	2,191,366	1,921,000
1919.....	21	23	547	4,731	719,596	229,244	65,117	40,849	1,548,611	1,868,000
Per cent of increase or decrease (—)			-33.1	81.1	-14.0	62.7	-47.4	124.9	41.5	121.3
SLATE										
Pennsylvania:										
1929.....	33	33	1,951	15,334	2,352,559	236,237	120,471	188,121	4,330,001	179,000
1919.....	42	42	1,892	9,678	1,655,082	297,941	164,461	42,234	2,651,533	134,000
Per cent of increase or decrease (—)			3.1	58.4	42.1	-20.7	-26.7	345.4	63.3	33.6
Vermont:										
1929.....	58	67	1,308	10,141	1,701,192	161,747	20,323	148,400	3,653,796	222,000
1919.....	38	39	1,039	6,447	976,143	226,644	25,338	97,221	2,057,388	188,000
Per cent of increase or decrease (—)			25.4	57.3	74.3	-28.6	-21.3	52.6	77.6	18.1
Virginia:										
1929.....	6	7	489	1,477	300,029	124,431	26,559	9,614	850,882	53,000
1919.....	4	5	210	445	152,491	7,453	16,497		203,068	7,000
Per cent of increase.....			132.9	231.9	138.1	1,569.5	61.0		319.0	657.1
New York:										
1929.....	15	15	155	3,120	227,376	42,360	6,489	47,027	728,642	111,000
1919.....	9	10	134	2,022	135,326	60,436	10,239	25,765	445,027	74,000
Per cent of increase or decrease (—)			15.7	54.3	67.4	-29.9	-36.6	82.5	63.7	50.0
MARBLE										
Tennessee:										
1929.....	13	14	1,377	6,730	1,093,582	147,858	69,958	34,794	2,287,938	105,000
1919.....	13	17	640	3,885	407,912	240,623	81,834	6,244	1,088,131	46,000
Per cent of increase or decrease (—)			165.0	73.2	168.1	-40.8	-14.5	1,258.0	110.3	128.3
Vermont:										
1929.....	9	23	658	10,077	785,579	159,528	4,278	131,090	1,829,315	102,000
1919.....	15	25	570	7,354	553,075	180,320	13,349	37,211	2,108,872	100,000
Per cent of increase or decrease (—)			15.4	37.0	42.0	-11.5	-68.0	252.3	-13.3	2.0
SANDSTONE										
Pennsylvania: <sup>2</sup>										
1929.....	59	72	1,003	10,203	1,320,064	484,718	74,812	115,588	3,382,413	2,077,000
1919.....	100	107	1,673	10,844	1,688,674	695,265	215,423	82,522	3,534,563	2,296,000
Per cent of increase or decrease (—)			-36.5	-5.1	-21.4	-30.3	-65.3	40.1	-4.3	-9.5
Ohio:										
1929.....	14	17	447	6,426	520,032	288,574	37,424	31,692	1,186,128	218,000
1919.....	21	23	875	5,431	965,151	288,557	92,720	22,927	2,750,352	457,000
Per cent of increase or decrease (—)			-48.9	18.3	-46.1	(*)	-59.6	38.2	-57.0	-52.3
California:										
1929.....	14	16	104	3,653	256,562	104,194	10,957	31,819	787,680	803,000
1919.....	6	7	27	583	39,041	20,202	669	1,631	65,074	272,000
Per cent of increase.....				524.4	557.2	415.8	1,537.8	1,850.9	1,110.4	195.2
New York: <sup>3</sup>										
1929.....	30	41	276	2,813	348,660	60,262	19,354	17,096	680,875	129,000
1919.....	22	26	146	1,234	149,051	40,566	9,320	2,124	301,315	70,000
Per cent of increase.....			89.0	128.0	133.9	48.0	107.7	704.9	126.0	84.3

<sup>1</sup> Quantities expressed in tons of 2,000 pounds include, in many cases, approximate equivalents of quantities reported in various other units by the quarry operators.<sup>2</sup> The figures for 1929 have been adjusted to make them comparable with 1919. See explanations preceding Table 10, p. 337.<sup>3</sup> No data available for 1919.<sup>4</sup> The return filed by one of the enterprises in Michigan reported an abnormally large amount for this item, which probably represents the inclusion of a considerable amount for capital and other expenditures not called for by this inquiry.<sup>5</sup> Includes a small proportion of miscellaneous unclassified stone.<sup>6</sup> Less than one-tenth of 1 per cent.

# STONE

341

## TYPE OF OWNERSHIP

As shown in Table 12, approximately three-fifths of the total number of quarries were operated by corporations. These employed 84.3 per cent of all wage

earners and contributed 87.5 per cent of the total value of products. Other forms of organization include partnerships, cooperative enterprises, and enterprises operated by individuals.

**TABLE 12.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO TYPE OF OWNERSHIP, BY INDUSTRIES, FOR SELECTED STATES: 1929**

INDUSTRY AND STATE	ALL CLASSES				CORPORATE				OTHER <sup>1</sup>			
	Number of enterprises	Number of quarries	Wage earners (average for the year)	Value of products	Number of enterprises	Number of quarries	Wage earners (average for the year)	Value of products	Number of enterprises	Number of quarries	Wage earners (average for the year)	Value of products
United States—Stone-quarrying industries, total.....	2,249	2,458	56,835	\$195,995,124	1,303	1,454	47,003	\$171,480,027	946	1,004	8,932	\$24,514,197
Limestone.....	1,167	1,256	32,300	117,257,784	740	805	27,092	104,069,760	421	451	4,008	12,288,024
Granite.....	406	434	10,037	30,381,373	203	223	8,371	25,901,847	203	211	1,660	4,479,526
Basalt.....	137	144	3,053	15,433,687	89	90	2,620	13,786,397	48	48	433	1,757,290
Slate.....	120	130	4,008	10,480,390	70	74	3,374	8,850,040	50	56	724	1,635,450
Marble.....	70	88	3,350	7,538,905	61	79	3,301	7,380,787	9	9	49	153,118
Sandstone.....	145	172	2,150	6,311,977	74	90	1,574	4,642,894	71	82	582	1,669,083
Miscellaneous.....	204	234	1,841	8,475,008	60	87	971	5,948,302	144	147	870	2,526,706
<b>LIMESTONE</b>												
Pennsylvania.....	201	213	6,048	19,124,040	95	98	4,034	15,956,909	106	115	1,114	3,107,071
Indiana.....	91	116	2,881	12,247,106	46	63	2,482	10,855,681	45	53	399	1,391,515
Ohio.....	110	114	2,660	12,091,055	73	76	2,491	11,499,377	37	38	169	591,378
New York.....	99	73	1,998	11,389,087	54	56	1,727	10,423,900	15	17	271	965,187
Michigan.....	14	16	1,566	11,059,922	14	16	1,566	11,059,922	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Illinois.....	53	55	1,649	7,830,131	37	39	1,510	7,523,714	10	16	130	306,417
Missouri.....	73	79	2,350	6,175,012	47	53	1,908	5,277,907	20	26	442	897,045
West Virginia.....	19	19	1,319	3,507,603	15	15	1,247	3,231,879	4	4	72	225,724
Wisconsin.....	53	58	817	3,406,692	37	41	725	3,005,789	16	17	92	400,903
Texas.....	36	41	1,170	3,171,522	25	26	819	2,503,373	11	15	351	668,149
Virginia.....	63	64	1,270	3,011,695	40	41	1,113	2,736,042	23	23	167	275,653
Kentucky.....	57	58	1,147	2,336,085	33	34	898	1,822,491	24	24	249	513,564
Iowa.....	25	26	632	2,105,957	17	18	593	2,048,341	8	8	39	117,616
Kansas.....	31	33	700	2,108,325	15	16	429	1,467,550	16	17	271	640,775
California.....	23	24	675	1,979,713	12	12	675	1,979,713	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Florida.....	37	37	495	1,801,799	25	25	390	1,623,901	12	12	105	267,898
Alabama.....	21	23	957	1,886,790	17	18	871	1,720,083	4	5	86	160,707
Oklahoma.....	18	21	507	1,775,772	15	18	454	1,636,096	3	3	53	139,076
Tennessee.....	29	32	573	1,736,472	17	19	479	1,469,183	12	13	94	267,289
Maryland.....	20	23	409	1,053,738	10	12	205	824,941	10	11	114	228,797
New Jersey.....	5	6	234	1,013,315	5	6	234	1,013,315				
<b>GRANITE</b>												
Massachusetts.....	33	39	1,554	5,394,350	22	23	1,387	4,860,058	16	16	167	534,292
Vermont.....	24	25	952	3,892,352	13	13	813	3,288,999	6	7	130	603,353
Minnesota.....	25	37	823	3,617,033	14	25	835	3,295,438	11	12	88	222,105
North Carolina.....	67	67	1,396	3,213,624	20	20	1,276	2,979,396	47	47	120	234,228
Georgia.....	28	30	1,265	2,201,313	14	16	924	1,722,499	14	14	341	478,514
Maine.....	30	30	881	2,155,640	16	16	793	1,943,801	14	14	88	211,839
South Carolina.....	17	17	669	1,748,081	10	10	637	1,677,276	7	7	32	70,805
California.....	24	27	235	1,409,584	12	15	192	1,302,398	12	12	42	107,186
Wisconsin.....	18	18	283	838,195	15	15	273	853,560	3	3	10	34,635
Virginia.....	5	5	200	861,347	5	5	200	861,347				
Pennsylvania.....	24	25	263	781,484	6	6	108	308,086	18	19	155	422,498
New Hampshire.....	18	20	315	706,259	6	6	101	283,746	12	14	214	442,513
Rhode Island.....	9	9	223	683,053	3	3	174	487,848	6	6	49	165,205
Connecticut.....	12	12	217	576,899	5	5	189	476,495	7	7	28	100,404
New York.....	13	13	105	504,519	6	6	50	159,629	7	7	55	344,890
<b>BASALT</b>												
New Jersey.....	26	27	693	3,580,184	19	20	564	2,946,168	7	7	119	634,016
Connecticut.....	19	19	420	2,924,085	16	16	382	2,716,395	3	3	38	207,690
Pennsylvania.....	20	22	596	2,236,438	8	10	513	2,103,334	12	12	53	139,104
Massachusetts.....	14	16	366	2,191,366	9	11	312	1,991,882	5	5	54	199,384
California.....	16	17	221	1,015,909	11	12	205	953,769	5	5	16	62,140
<b>SLATE</b>												
Pennsylvania.....	33	33	1,951	4,330,001	30	30	1,884	4,210,606	3	3	67	119,395
Vermont.....	58	67	1,303	3,653,796	22	25	720	2,296,541	30	42	583	1,357,255
Virginia.....	6	7	489	850,882	6	7	489	850,882	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
New York.....	15	15	155	728,642	7	7	199	619,200	8	8	46	109,442
<b>MARBLE</b>												
Tennessee.....	13	14	1,377	2,287,938	13	14	1,377	2,287,938				
Vermont.....	6	23	658	1,829,315	9	23	658	1,829,315				
Missouri.....	6	8	290	752,978	6	8	290	752,978	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Georgia.....	5	5	286	749,737	5	5	286	749,737				
Alabama.....	3	3	358	653,940	3	3	358	653,940				
<b>SANDSTONE</b>												
Pennsylvania.....	41	51	595	1,615,444	18	21	421	1,157,400	23	30	174	458,035
Ohio.....	14	17	447	1,186,128	14	17	447	1,186,128				
California.....	14	15	164	787,680	8	8	118	547,976	6	7	48	239,704
New York.....	30	41	276	680,875	7	15	119	319,631	23	26	157	361,244
<b>MISCELLANEOUS</b>												
California.....	40	64	401	3,789,013	17	39	382	3,302,869	23	25	109	486,144
Missouri.....	19	19	267	628,763	5	5	78	312,371	14	14	189	318,392
New York.....	15	15	96	593,467	7	7	64	437,976	8	8	32	155,491
Pennsylvania.....	30	30	168	588,788	4	4	31	143,006	26	26	137	425,777

<sup>1</sup> Partnerships, enterprises operated by individuals, etc.  
<sup>2</sup> Includes data for 1 other type of ownership.

<sup>3</sup> Included with "Corporate."  
<sup>4</sup> Includes data for 2 other types of ownership.

SCALE OF OPERATION

Enterprises classified according to value of products (Table 13).—The stone industries include a relatively large number of small enterprises, 1,718, or 76.4 per cent of the total number, reporting a value of products less than \$100,000 each. Of those enter-

prises in the larger classes, a number reported data covering both quarrying and finishing operations, thus distorting the figures to some extent. (See "GENERAL EXPLANATIONS—Milling and Manufacturing" and Table 2.)

TABLE 13.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO VALUE OF PRODUCTS, BY INDUSTRIES, FOR SELECTED STATES: 1929

INDUSTRY, STATE, AND VALUE OF PRODUCTS PER ENTERPRISE	Number of enterprises	Number of quarries	Wage earners (average for the year)	Wages	VALUE OF PRODUCTS		INDUSTRY, STATE, AND VALUE OF PRODUCTS PER ENTERPRISE	Number of enterprises	Number of quarries	Wage earners (average for the year)	Wages	VALUE OF PRODUCTS	
					Amount	Per cent of total						Amount	Per cent of total
United States — Stone-quarrying industries, total.....							LIMESTONE—Contd.						
Less than \$20,000.....							West Virginia, total.....						
\$20,000 to \$49,999.....							Less than \$20,000.....						
\$50,000 to \$99,999.....							\$20,000 to \$49,999.....						
\$100,000 to \$249,999.....							\$50,000 to \$99,999.....						
\$250,000 to \$499,999.....							\$100,000 to \$249,999.....						
\$500,000 to \$999,999.....							\$250,000 to \$499,999.....						
\$1,000,000 to \$2,499,999.....							\$500,000 to \$999,999.....						
\$2,500,000 to \$4,999,999.....							Wisconsin, total.....						
\$5,000,000 and over.....							Less than \$20,000.....						
							\$20,000 to \$49,999.....						
							\$50,000 to \$99,999.....						
							\$100,000 to \$249,999.....						
							\$250,000 to \$499,999.....						
							\$500,000 to \$999,999.....						
							\$1,000,000 to \$2,499,999.....						
							\$2,500,000 to \$4,999,999.....						
							\$5,000,000 and over.....						
LIMESTONE, total.....							Texas, total.....						
Less than \$20,000.....							Less than \$20,000.....						
\$20,000 to \$49,999.....							\$20,000 to \$49,999.....						
\$50,000 to \$99,999.....							\$50,000 to \$99,999.....						
\$100,000 to \$249,999.....							\$100,000 to \$249,999.....						
\$250,000 to \$499,999.....							\$250,000 to \$499,999.....						
\$500,000 to \$999,999.....							\$500,000 to \$999,999.....						
\$1,000,000 to \$2,499,999.....							\$1,000,000 to \$2,499,999.....						
\$2,500,000 to \$4,999,999.....							\$2,500,000 to \$4,999,999.....						
\$5,000,000 and over.....							\$5,000,000 and over.....						
Pennsylvania, total.....							Virginia, total.....						
Less than \$20,000.....							Less than \$20,000.....						
\$20,000 to \$49,999.....							\$20,000 to \$49,999.....						
\$50,000 to \$99,999.....							\$50,000 to \$99,999.....						
\$100,000 to \$249,999.....							\$100,000 to \$249,999.....						
\$250,000 to \$499,999.....							\$250,000 to \$499,999.....						
\$500,000 to \$999,999.....							\$500,000 to \$999,999.....						
\$1,000,000 to \$2,499,999.....							\$1,000,000 to \$2,499,999.....						
\$2,500,000 to \$4,999,999.....							\$2,500,000 to \$4,999,999.....						
\$5,000,000 and over.....							\$5,000,000 and over.....						
Indiana, total.....							GRANITE, total.....						
Less than \$20,000.....							Less than \$20,000.....						
\$20,000 to \$49,999.....							\$20,000 to \$49,999.....						
\$50,000 to \$99,999.....							\$50,000 to \$99,999.....						
\$100,000 to \$249,999.....							\$100,000 to \$249,999.....						
\$250,000 to \$499,999.....							\$250,000 to \$499,999.....						
\$500,000 to \$999,999.....							\$500,000 to \$999,999.....						
\$1,000,000 to \$2,499,999.....							\$1,000,000 to \$2,499,999.....						
\$2,500,000 to \$4,999,999.....							\$2,500,000 to \$4,999,999.....						
\$5,000,000 and over.....							\$5,000,000 and over.....						
Ohio, total.....							Massachusetts, total.....						
Less than \$20,000.....							Less than \$20,000.....						
\$20,000 to \$49,999.....							\$20,000 to \$49,999.....						
\$50,000 to \$99,999.....							\$20,000 to \$49,999.....						
\$100,000 to \$249,999.....							\$50,000 to \$99,999.....						
\$250,000 to \$499,999.....							\$100,000 to \$249,999.....						
\$500,000 to \$999,999.....							\$250,000 to \$499,999.....						
\$1,000,000 to \$2,499,999.....							\$500,000 to \$999,999.....						
\$2,500,000 to \$4,999,999.....							\$1,000,000 to \$2,499,999.....						
\$5,000,000 and over.....							\$2,500,000 to \$4,999,999.....						
New York, total.....							Vermont, total.....						
Less than \$20,000.....							Less than \$20,000.....						
\$20,000 to \$49,999.....							\$20,000 to \$49,999.....						
\$50,000 to \$99,999.....							\$20,000 to \$49,999.....						
\$100,000 to \$249,999.....							\$50,000 to \$99,999.....						
\$250,000 to \$499,999.....							\$100,000 to \$249,999.....						
\$500,000 to \$999,999.....							\$250,000 to \$499,999.....						
\$1,000,000 to \$2,499,999.....							\$500,000 to \$999,999.....						
\$2,500,000 to \$4,999,999.....							\$1,000,000 to \$2,499,999.....						
\$5,000,000 and over.....							\$2,500,000 to \$4,999,999.....						
Michigan, total.....							Minnesota, total.....						
Less than \$20,000.....							Less than \$20,000.....						
\$20,000 to \$49,999.....							\$20,000 to \$49,999.....						
\$50,000 to \$99,999.....							\$20,000 to \$49,999.....						
\$100,000 to \$249,999.....							\$50,000 to \$99,999.....						
\$250,000 to \$499,999.....							\$100,000 to \$249,999.....						
\$500,000 to \$999,999.....							\$250,000 to \$499,999.....						
\$1,000,000 to \$2,499,999.....							\$500,000 to \$999,999.....						
\$2,500,000 to \$4,999,999.....							\$1,000,000 to \$2,499,999.....						
\$5,000,000 and over.....							\$2,500,000 to \$4,999,999.....						
Illinois, total.....							North Carolina, total.....						
Less than \$20,000.....							Less than \$20,000.....						
\$20,000 to \$49,999.....							\$20,000 to \$49,999.....						
\$50,000 to \$99,999.....							\$20,000 to \$49,999.....						
\$100,000 to \$249,999.....							\$50,000 to \$99,999.....						
\$250,000 to \$499,999.....							\$100,000 to \$249,999.....						
\$500,000 to \$999,999.....							\$250,000 to \$499,999.....						
\$1,000,000 to \$2,499,999.....							\$500,000 to \$999,999.....						
\$2,500,000 to \$4,999,999.....							\$1,000,000 to \$2,499,999.....						
\$5,000,000 and over.....							\$2,500,000 to \$4,999,999.....						
Georgia, total.....							Maine, total.....						
Less than \$20,000.....							Less than \$20,000.....						
\$20,000 to \$49,999.....							\$20,000 to \$49,999.....						
\$50,000 to \$99,999.....							\$20,000 to \$49,999.....						
\$100,000 to \$249,999.....							\$50,000 to \$99,999.....						
\$250,000 to \$499,999.....							\$100,000 to \$249,999.....						
\$500,000 to \$999,999.....							\$250,000 to \$499,999.....						
\$1,000,000 to \$2,499,999.....							\$500,000 to \$999,999.....						
\$2,500,000 to \$4,999,999.....							\$1,000,000 to \$2,499,999.....						
\$5,000,000 and over.....							\$2,500,000 to \$4,999,999.....						
Missouri, total.....													
Less than \$20,000.....													
\$20,000 to \$49,999.....													
\$50,000 to \$99,999.....													
\$100,000 to \$249,999.....													
\$250,000 to \$499,999.....													
\$500,000 to \$999,999.....													
\$1,000,000 to \$2,499,999.....													
\$2,500,000 to \$4,999,999.....													
\$5,000,000 and over.....													

1 Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.



## POWER

Power equipment in 1929 (Table 14).—The data for electric motors driven by energy generated in the reporting enterprises are not included in the "aggregate horsepower," as shown in this and other tables, since such inclusion would result in duplication of the figures for the horsepower of prime movers used in driving the generators. For the industries as a whole, approximately six-sevenths of the stationary prime-mover power was used directly and about one-seventh was employed in driving generators.

Table 14 also gives a classification of motive power according to the nature of its use, whether stationary or mobile. The latter class embraces the power equipment of shovels, drilling and cutting machines, quarry locomotives, and other machinery moved from place to place in the course of operations as contrasted with fixed installations, such as central power plants, hoisting equipment, etc. The number and horsepower

rating of the several types of prime movers and of electric motors used by quarrying enterprises in 1929 are given, by States, in Table 25.

Although certain establishments, which conducted both quarrying and manufacturing operations at the same location, were able to file, for the census, segregated returns covering each branch, it was impracticable to segregate data for prime-mover and generator equipment, as these installations served the establishment as a whole. In such cases these data were attributed to the manufacturing portion of the establishment, and the motors used in the quarry operations were classified as "operated on purchased energy," rather than on energy generated in the enterprise. For this reason the 1929 figures for electric motors driven by purchased energy are overstated, while those for electric motors driven by energy generated by enterprises reporting are correspondingly understated, in the power tables of this report.

TABLE 14.—POWER EQUIPMENT, STATIONARY AND MOBILE—NUMBER AND RATED CAPACITY OF PRIME MOVERS, MOTORS, AND GENERATORS, BY INDUSTRIES: 1929

[Enterprises whose value of product in 1929 was less than \$20,000 were permitted to report on an abbreviated schedule, which called for the total number and horsepower rating of prime movers, but not by kind. Therefore, data for prime movers of 393 enterprises which so reported are included with those for stationary steam engines. See Table 13 for statistics showing the relative importance of this class of enterprises.]

INDUSTRY AND TYPE OF EQUIPMENT	PRIME MOVERS AND ELECTRIC MOTORS DRIVEN BY PURCHASED ENERGY												Electric motors driven by energy generated by enterprises reporting		Electric generators		
	Aggregate horsepower	Prime movers								Electric motors driven by purchased energy		Number					Horsepower
		Total horsepower of prime movers	Steam engines		Steam turbines		Internal-combustion engines		Water wheels and water turbines				Horsepower rating of inactive prime movers <sup>1</sup>				
			Number	Horsepower	Number	Horsepower	Number	Horsepower	Number	Horsepower							
Stone-quarrying industries, total	829,041	283,570	2,465	169,039	74	54,547	1,242	57,423	19	1,961	14,619	14,902	545,471	685	23,652	78	18,698
Stationary	669,391	179,731	1,510	92,790	74	54,547	651	30,433	19	1,961	10,608	13,247	489,660	624	20,439	78	18,698
Mobile	159,650	103,839	945	76,849			591	26,990			3,951	1,655	55,811	61	3,213		
Limestone, total	635,466	198,236	1,310	110,561	32	51,387	723	35,233	9	1,055	12,273	8,780	337,230	429	20,872	52	16,832
Stationary	406,900	115,513	598	46,149	32	51,387	343	16,922	9	1,055	8,773	7,545	201,387	373	17,719	52	16,832
Mobile	128,566	82,723	720	64,412			380	18,311			3,500	1,235	45,843	56	3,153		
Granite, total	108,217	32,144	509	23,332	16	1,245	165	6,962	6	605	2,081	2,025	76,073	221	1,776	16	1,412
Stationary	99,166	24,728	426	18,443	16	1,245	118	4,435	6	605	1,600	1,990	74,438	221	1,776	16	1,412
Mobile	9,051	7,416	83	4,889			47	2,527			421	35	1,635				
Basalt, total	63,881	18,775	143	11,407			152	7,308	2	60	20	898	45,106	8	350	3	92
Stationary	53,754	10,785	74	7,167			52	3,558	2	60	20	867	42,969	8	350	3	92
Mobile	10,127	7,990	69	4,240			100	3,750				31	2,137				
Slate, total	33,817	7,941	158	7,289	1	265	6	331	1	56	125	1,155	25,876	3	75	1	100
Stationary	33,543	7,941	158	7,289	1	265	6	331	1	56	125	1,140	25,602	3	75	1	100
Mobile	274											15	274				
Marble, total	30,198	6,013	71	3,365	22	1,425	21	1,038	1	185		898	24,185	6	172	2	45
Stationary	25,195	5,007	55	2,505	22	1,425	16	892	1	185		636	20,188	1	112	2	45
Mobile	5,003	1,006	16	860			5	146				262	3,997	5	60		
Sandstone, total	28,935	11,370	128	8,900	3	225	89	2,236			45	517	17,565	12	294	3	142
Stationary	25,814	8,793	92	7,259	3	225	58	1,309			15	498	17,021	12	294	3	142
Mobile	3,121	2,577	36	1,650			31	927			30	19	544				
Miscellaneous, total	28,527	9,091	130	4,776			86	4,315			75	629	19,436	6	113	1	76
Stationary	25,019	6,964	109	3,978			58	2,988			75	571	18,055	6	113	1	76
Mobile	3,508	2,127	21	798			28	1,329				58	1,381				

<sup>1</sup> Included in "Total horsepower of prime movers."

Summary for power equipment: 1909-1929 (Table 15).—Figures for the limestone and sandstone industries for 1929 are not comparable with those for 1919 and 1909 due to differences in industry classification for 1929. (See "Definition of the industries," p. 1.)

Accordingly, no percentages of change are shown for those industries and for the stone industries as a whole for 1929. The figures for the granite, basalt, slate, and marble industries reflect substantial increases in the use of power in 1929 as compared with 1919.

TABLE 15.—POWER EQUIPMENT—NUMBER AND RATED CAPACITY OF PRIME MOVERS AND MOTORS, BY INDUSTRIES: 1929, 1919, AND 1909

[Data for 1929 are not comparable with 1919 and 1909 for the limestone and sandstone industries, because of inclusion or exclusion of data for 1929 not similarly treated for the earlier years. See explanations preceding Table 10, p. 337. See also headnote, Table 14]

INDUSTRY	Census year	PRIME MOVERS AND ELECTRIC MOTORS DRIVEN BY PURCHASED ENERGY												Electric motors driven by enterprises reporting <sup>1</sup>	
		Aggregate horsepower	Total horsepower of prime movers	Prime movers								Electric motors driven by purchased energy			
				Steam engines		Steam turbines		Internal-combustion engines		Water wheels and water turbines		Number	Horsepower		
				Number	Horsepower	Number	Horsepower	Number	Horsepower	Number	Horsepower				
Stone-quarrying industries, total	1929	829,041	283,570	2,455	109,639	74	54,547	1,242	57,423	19	1,961	14,902	545,471	685	23,652
	1919	376,748	210,938	3,397	194,477	23	14,286	440	9,045	18	2,130	3,971	156,810	400	19,210
	1909	303,442	273,000	5,533	257,306	(*)	(*)	278	6,721	65	8,973	681	30,352	509	17,405
Per cent of increase or decrease (-):				(*)	(*)			58.3	34.6	(*)	-76.3	483.1	416.6	-18.2	10.4
1909-1919		24.2	-19.5												
Limestone <sup>2</sup>	1929	535,466	198,236	1,316	110,561	32	51,387	723	35,233	9	1,055	8,730	337,230	429	20,872
	1919	213,717	120,887	1,776	109,773	17	10,701	252	5,043	9	865	2,046	87,330	267	11,421
	1909	125,024	115,573	2,166	112,309	(*)	(*)	119	2,911	9	272	206	9,451	170	5,201
Per cent of increase:				(*)	(*)			111.8	73.2		218.0	893.2	824.0	57.1	115.0
1909-1919		70.9	9.4												
Granite	1929	108,217	32,144	509	23,332	16	1,245	165	6,962	6	605	2,025	76,073	231	1,776
	1919	55,614	34,711	744	30,231	3	2,300	84	1,343	4	777	450	20,903	34	1,520
	1909	61,095	54,213	1,346	52,549	(*)	(*)	65	1,142	6	522	189	6,882	57	1,340
Per cent of increase or decrease (-):				(*)	(*)	(*)	(*)	(*)	418.4	(*)	-22.1	350.0	203.9	(*)	16.8
1919-1929		94.6	-7.4	(*)	(*)	(*)	(*)	(*)	17.6	(*)	48.9	183.0	203.7	(*)	12.0
1909-1919		-9.0	-36.0												
Basalt	1929	63,881	18,775	143	11,407			152	7,308	2	60	898	45,106	8	350
	1919	37,807	22,844	289	21,030	3	1,225	30	520			255	14,463	11	1,049
	1909	29,211	21,017	255	20,922	(*)	(*)	19	995			173	7,294	18	521
Per cent of increase or decrease (-):				(*)	(*)			(*)	1,305.4			252.2	211.9	(*)	-66.6
1919-1929		71.2	-17.8	(*)	(*)			(*)	-47.7			47.4	98.3	(*)	101.3
1909-1919		27.7	4.2												
Slate	1929	33,817	7,941	159	7,280	1	265	6	331	1	56	1,155	25,876	3	75
	1919	20,613	8,778	193	8,669			1	8	2	101	426	11,835	4	44
	1909	29,777	27,769	707	27,255	(*)	(*)	3	46	14	468	63	2,008	2	50
Per cent of increase or decrease (-):				(*)	(*)			(*)	(*)	(*)	-44.6	171.1	118.6	(*)	(*)
1919-1929		64.1	-9.5	(*)	(*)			(*)	(*)	(*)	-78.4	(*)	489.4	(*)	(*)
1909-1919		-30.8	-68.4												
Marble	1929	30,198	6,013	71	3,305	22	1,425	21	1,038	1	185	898	24,185	6	172
	1919	15,928	6,021	85	5,619			2	15	3	387	408	9,607	19	480
	1909	21,770	20,944	238	12,974	(*)	(*)	11	437	34	7,533	9	835	266	8,035
Per cent of increase or decrease (-):				(*)	(*)			(*)	(*)	(*)	-52.2	120.1	151.7	(*)	-64.2
1919-1929		93.2	-0.1	(*)	(*)			(*)	(*)	(*)	-94.9	(*)	1,050.5	(*)	-94.0
1909-1919		-28.2	-71.3												
Sandstone <sup>3</sup>	1929	28,935	11,370	128	8,909	3	225	89	2,236			517	17,565	12	294
	1919	33,869	21,197	340	19,081			71	2,116			386	12,672	155	4,066
	1909	36,556	32,674	821	31,306	(*)	(*)	61	1,190	2	178	71	3,832	86	2,102
Per cent of increase or decrease (-):				(*)	(*)			(*)	77.8			(*)	220.4	(*)	117.2
1909-1919		-7.4	-35.1												
Miscellaneous <sup>4</sup>	1929	28,527	9,091	130	4,776			86	4,315			620	19,436	6	113

<sup>1</sup> Figures for electric generators shown in Table 25 for 1929; not available for 1919 and 1909.

<sup>2</sup> Includes data for steam turbines.

<sup>3</sup> Included in data for steam engines.

<sup>4</sup> Per cent not computed where base is less than 100 or where figures are not comparable.

<sup>5</sup> See headnote.

<sup>6</sup> For 1919 and 1909, the data for production of miscellaneous stone are included in the figures for the other stone industries (principally basalt and sandstone).



Central-administrative-office employees (Table 18).—This table was compiled from data reported separately on special schedules and not included in the returns for the operating enterprises. It gives the number of employees reported by offices maintained independently of quarry offices and usually at a distance from the quarrying operations, as in New York City, Chicago, or Los Angeles. Figures for these employees

are included only in this table. In the cases of companies whose activities include manufacturing operations—shaping, finishing, and polishing of stone, etc.—as well as quarrying, the data for central-administrative-office employees have been omitted from this table, and included in the statistics for the census of manufactures—in other words, attributed to the final producing activities of such companies.

TABLE 18.—CENTRAL-ADMINISTRATIVE-OFFICE EMPLOYEES—NUMBER, BY SEX, AND SALARIES, FOR THE UNITED STATES: 1929

CLASS	Total	Limestone	Granite	Basalt	Slate	Marble	Sandstone	Stone, miscellaneous
Stone-quarrying industries:								
Number, total.....	358	208	8	30	8	9	25	61
Male.....	258	159	6	29	7	7	17	33
Female.....	100	49	2	10	1	2	8	28
Salaries.....	\$1,194,621	\$700,858	\$14,085	\$199,134	\$36,220	\$82,890	\$40,438	\$104,996
Principal salaried officers of corporations:								
Number, total.....	101	56	3	16	1	4	5	16
Male.....	97	54	3	16	1	4	4	15
Female.....	4	2					1	1
Salaries.....	\$655,716	\$373,647	\$8,160	\$116,090	\$12,000	\$26,850	\$17,280	\$101,780
Other central-administrative-office employees:								
Number, total.....	257	152	5	23	7	5	20	45
Male.....	161	105	3	13	6	3	13	18
Female.....	96	47	2	10	1	2	7	27
Salaries.....	\$538,905	\$327,311	\$5,925	\$83,035	\$24,220	\$6,040	\$20,168	\$63,216

Size of enterprises according to number of wage earners (Table 19).—Of the total number of enterprises covered by this table, 1,943, or 87.3 per cent, employed 50 or fewer wage earners, accounted for 47.1

per cent of the total number of wage earners, and contributed 48.2 per cent of the total value of products given in this table.

TABLE 19.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO NUMBER OF WAGE EARNERS, BY INDUSTRIES, FOR SELECTED STATES: 1929

[This table does not include data for 23 enterprises which employed no wage earners, in industries as follows: Granite, 8; limestone, 2; sandstone, 2; slate, 9; stone miscellaneous, 2]

INDUSTRY, STATE, AND NUMBER OF WAGE EARNERS PER ENTERPRISE	Number of enterprises	Number of quarries	WAGE EARNERS (average for the year)		Wages	Value of products	INDUSTRY, STATE, AND NUMBER OF WAGE EARNERS PER ENTERPRISE	Number of enterprises	Number of quarries	WAGE EARNERS (average for the year)		Wages	Value of products
			Number	Per cent of total						Number	Per cent of total		
United States—Stone-quarrying industries, total <sup>1</sup> .....	2,226	2,435	59,835	100.0	\$69,593,903	\$195,893,678	LIMESTONE—Contd.						
Not reported.....	5	5				20,194	89	114	2,381	100.0	\$4,082,335	\$12,240,596	
1 to 5.....	648	654	1,883	3.3	2,103,444	6,547,513	1 to 5.....	25	26	75	2.6	82,037	209,826
6 to 20.....	824	879	9,787	17.2	11,351,617	33,079,607	6 to 20.....	29	33	335	11.0	861,444	1,109,466
21 to 50.....	466	517	15,112	26.6	18,989,302	54,691,868	21 to 50.....	26	32	827	28.7	1,084,547	3,387,742
51 to 100.....	189	216	13,076	23.0	15,148,805	40,574,357	51 to 100.....	5	5	300	10.0	407,530	1,283,837
101 to 250.....	82	134					101 to 250.....	4	11	7	2.4	2,045,898	6,249,725
251 to 500.....	10	22	116,977	20.9	21,880,735	60,974,139	501 to 1,000.....	1	7				
501 to 1,000.....	2	8					Ohio, total.....	110	114	2,660	100.0	3,406,076	12,091,055
LIMESTONE, total <sup>1</sup> .....	1,165	1,264	32,300	100.0	39,188,364	117,261,184	1 to 5.....	41	41	136	5.1	166,354	516,683
1 to 5.....	283	286	597	2.8	966,867	2,793,632	6 to 20.....	31	32	418	15.7	519,725	1,787,001
6 to 20.....	438	465	5,400	16.7	5,726,795	17,087,796	21 to 50.....	27	27	815	30.6	1,116,464	4,436,643
21 to 50.....	288	312	9,513	28.9	11,502,984	35,207,255	51 to 100.....	3	9	615	23.1	739,990	2,043,202
51 to 100.....	107	119	7,436	23.0	8,577,781	24,069,070	101 to 250.....	2	4	1,676	25.4	867,147	3,287,406
101 to 250.....	41	53	6,598	19.8	8,312,732	23,280,082	251 to 500.....	1	1				
251 to 500.....	6	6	2,850	8.8	4,101,255	14,863,079	Missouri, total.....	73	70	2,350	100.0	2,433,447	6,175,012
501 to 1,000.....	2	8					1 to 5.....	11	11	44	1.9	42,860	128,051
Pennsylvania, total.....	201	213	6,048	100.0	7,783,473	19,124,040	6 to 20.....	28	29	388	16.5	375,219	957,526
1 to 5.....	55	58	136	2.7	169,102	490,730	21 to 50.....	19	20	587	25.0	674,664	1,702,185
6 to 20.....	69	75	709	13.2	800,199	2,510,352	51 to 100.....	9	10	561	23.9	499,606	1,268,915
21 to 50.....	47	51	1,413	23.4	1,859,710	4,704,008	101 to 250.....	6	9	770	32.8	841,093	2,138,335
51 to 100.....	17	17	1,259	20.8	1,724,291	4,351,421	New York, total.....	69	73	1,938	100.0	3,111,403	11,389,087
101 to 250.....	10	12	1,550	25.0	1,949,574	4,310,490	1 to 5.....	12	12	31	1.6	37,339	118,753
251 to 500.....	3	3	863	14.2	1,280,897	2,718,030	6 to 20.....	32	33	387	19.4	507,812	1,952,959
							21 to 50.....	13	15	428	21.4	646,804	2,177,263
							51 to 100.....	8	9	573	28.7	852,473	2,583,473
							101 to 250.....	4	4	579	29.0	1,066,980	4,556,634

See footnotes at end of table.



TABLE 19.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO NUMBER OF WAGE EARNERS, BY INDUSTRIES, FOR SELECTED STATES: 1929—Continued

INDUSTRY, STATE, AND NUMBER OF WAGE EARNERS PER ENTERPRISE	Number of enterprises	Number of quarries	WAGE EARNERS (average for the year)		Wages	Value of products	INDUSTRY, STATE, AND NUMBER OF WAGE EARNERS PER ENTERPRISE	Number of enterprises	Number of quarries	WAGE EARNERS (average for the year)		Wages	Value of products
			Number	Per cent of total						Number	Per cent of total		
LIMESTONE—Contd.						GRANITE—Continued							
Illinois, total.....	53	55	1,640	100.0	\$2,105,707	\$7,830,131	Vermont, total.....	24	25	952	100.0	\$1,303,739	\$3,892,352
1 to 5.....	13	14	40	2.4	42,657	103,658	1 to 5.....	8	8	23	2.4	28,221	76,741
6 to 20.....	12	12	131	7.9	147,764	528,951	6 to 20.....	5	6	48	5.0	56,423	135,783
21 to 50.....	10	19	613	37.2	890,612	3,309,185	21 to 50.....	6	6	212	22.3	298,170	510,773
51 to 100.....	7	8					51 to 100.....	1	1				
101 to 250.....	1	1	2 865	52.5	1,024,674	3,888,337	101 to 250.....	4	4	2 669	70.3	1,010,925	3,169,055
251 to 500.....	1	1											
Michigan, total.....	14	10	1,560	100.0	2,308,116	11,059,922	Minnesota, total.....	25	37	923	100.0	1,230,398	3,617,633
1 to 5.....	2	2	41	2.6	58,068	125,722	1 to 5.....	6	6	20	2.2	25,851	67,811
6 to 20.....	3	4	275	17.0	327,601	1,309,423	6 to 20.....	10	11	106	11.5	143,014	718,014
21 to 50.....	3	3	275	17.0	327,601	1,309,423	21 to 50.....	6	14	224	24.3	332,899	858,099
51 to 100.....	2	3	1,250	79.8	1,922,487	9,624,777	51 to 100.....	1	3				
101 to 250.....	3	3					101 to 250.....	1	1	2 573	62.1	728,634	1,973,700
501 to 1,000.....	1	1					251 to 500.....	1	2				
West Virginia, total.....	19	19	1,310	100.0	1,465,648	3,607,603	SLATE, total.....	111	121	4,098	100.0	4,884,038	10,431,044
1 to 5.....	2	2	41	3.1	38,061	102,557	1 to 5.....	15	15	44	1.1	60,718	135,600
6 to 20.....	3	3	212	16.1	249,343	710,690	6 to 20.....	37	38	466	11.4	588,636	1,013,172
21 to 50.....	6	6	209	15.8	226,946	482,920	21 to 50.....	30	32	1,029	25.1	1,247,965	3,361,801
51 to 100.....	3	3	857	65.0	948,108	2,231,530	51 to 100.....	19	23	1,272	31.0	1,558,126	3,802,150
101 to 250.....	4	4					101 to 250.....	10	13	1,287	31.4	1,428,593	2,528,312
251 to 500.....	1	1											
Virginia, total.....	63	64	1,270	100.0	1,102,969	3,011,695	Pennsylvania, total.....	33	33	1,951	100.0	2,352,550	4,330,061
1 to 5.....	21	21	73	5.7	60,006	157,385	6 to 20.....	2	2	408	25.5	581,930	1,262,442
6 to 20.....	27	28	353	27.8	251,741	555,228	21 to 50.....	14	14				
21 to 50.....	6	6	182	14.3	182,628	512,782	51 to 100.....	12	12	800	41.0	1,620,956	1,620,956
51 to 100.....	8	8	662	52.1	608,594	1,786,320	101 to 250.....	5	5	653	33.5	822,754	1,540,003
101 to 250.....	1	1											
Texas, total.....	30	41	1,170	100.0	1,128,920	3,171,522	Vermont, total.....	51	60	1,303	100.0	1,701,192	3,604,317
1 to 5.....	5	5	19	1.6	24,337	65,202	1 to 5.....	6	6	16	1.2	18,155	40,776
6 to 20.....	10	14	114	9.7	94,158	317,094	6 to 20.....	28	29	340	26.1	423,444	726,105
21 to 50.....	14	14	516	44.1	535,842	1,656,308	21 to 50.....	9	11	315	24.2	405,689	799,081
51 to 100.....	6	6	521	44.5	474,883	1,223,918	51 to 100.....	6	10	632	48.5	853,904	2,038,355
101 to 250.....	1	1					101 to 250.....	2	4				
Kentucky, total.....	57	58	1,147	100.0	883,724	2,336,085	Virginia, total.....	6	7	489	100.0	300,020	850,882
1 to 5.....	12	12	42	3.7	35,753	102,742	6 to 20.....	1	1	90	18.4	67,209	349,120
6 to 20.....	27	28	340	30.4	270,194	667,364	21 to 50.....	2	2	399	81.6	292,700	501,762
21 to 50.....	13	13	429	37.4	367,684	982,910							
51 to 100.....	5	5	327	28.5	210,093	583,069	MARBLE, total.....	70	88	3,350	100.0	3,291,541	7,538,905
101 to 250.....							1 to 5.....	14	14	38	1.1	40,148	180,735
Alabama, total.....	21	23	957	100.0	841,965	1,886,790	6 to 20.....	24	25	283	8.4	316,149	875,326
1 to 5.....	5	5	64	6.7	60,208	178,182	21 to 50.....	10	10	277	8.3	343,047	669,016
6 to 20.....	6	6	215	22.5	183,171	403,363	51 to 100.....	13	16	904	27.0	803,944	1,767,440
21 to 50.....	7	8	678	70.8	589,896	1,905,245	101 to 250.....	8	11	1,848	55.2	1,782,253	4,045,488
51 to 100.....	1	1					251 to 500.....	1	12				
101 to 250.....							Tennessee, total.....	13	14	1,377	100.0	1,093,582	2,287,938
GRANITE, total.....	398	426	10,037	100.0	12,639,524	30,355,773	6 to 20.....	1	1	503	36.5	358,585	736,450
Not reported.....	3	3				21,194	21 to 50.....	1	1				
1 to 5.....	149	151	380	3.8	464,178	1,880,277	51 to 100.....	6	6	874	63.5	734,997	1,551,479
6 to 20.....	124	134	1,381	13.8	1,691,494	4,955,962	101 to 250.....	5	6				
21 to 50.....	72	83	2,426	24.2	3,152,080	7,060,090	Vermont, total.....	9	23	658	100.0	785,579	1,820,315
51 to 100.....	30	34	2,141	21.3	2,384,804	5,835,977	1 to 5.....	2	2	24	3.6	26,200	101,036
101 to 250.....	17	17	2,510	25.0	3,430,388	7,371,880	6 to 20.....	2	2	634	96.4	759,379	1,728,279
251 to 500.....	3	4	1,199	11.9	1,516,680	3,730,393	51 to 100.....	1	12				
Massachusetts, total.....	38	30	1,554	100.0	2,624,198	5,394,350	101 to 250.....	1	1				
1 to 5.....	9	9	27	1.7	35,687	133,741	Alabama, total.....	3	3	358	100.0	333,544	653,940
6 to 20.....	12	12	143	9.2	222,689	852,316	51 to 100.....	2	2	358	100.0	333,544	653,940
21 to 50.....	9	10	276	17.8	445,502	1,018,984	101 to 250.....	1	1				
51 to 100.....	4	4	256	16.5	390,256	685,912	Missouri, total.....	6	8	209	100.0	335,909	752,978
101 to 250.....	3	3	852	54.8	1,530,204	2,703,397	6 to 20.....	2	2	209	100.0	335,909	752,978
251 to 500.....	1	1					21 to 50.....	2	2				
North Carolina, total.....	61	61	1,390	100.0	1,298,397	3,197,474	51 to 100.....	1	1				
1 to 5.....	40	40	74	5.3	46,736	158,753	101 to 250.....	1	3				
6 to 20.....	4	4	46	3.3	54,248	180,730	Georgia, total.....	5	5	286	100.0	234,623	749,737
21 to 50.....	9	9	308	22.1	291,839	742,414	1 to 5.....	1	1	286	100.0	234,623	749,737
51 to 100.....	7	7	963	69.3	905,674	2,116,577	6 to 20.....	2	2				
101 to 250.....	1	1					21 to 50.....	1	1				
Georgia, total.....	28	30	1,265	100.0	1,033,884	2,201,313	51 to 100.....	1	1				
1 to 5.....	4	4	12	0.9	12,820	23,500	101 to 250.....	1	1				
6 to 20.....	9	9	114	9.0	76,111	167,686							
21 to 50.....	7	8	271	21.4	193,874	503,348							
51 to 100.....	4	5	289	22.8	207,479	549,084							
101 to 250.....	4	4	579	45.8	543,600	957,796							

See footnotes at end of table.

TABLE 19.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO NUMBER OF WAGE EARNERS, BY INDUSTRIES, FOR SELECTED STATES: 1929—Continued

INDUSTRY, STATE, AND NUMBER OF WAGE EARNERS PER ENTERPRISE	Number of enterprises	Number of quarries	WAGE EARNERS (average for the year)		Wages	Value of products	INDUSTRY, STATE, AND NUMBER OF WAGE EARNERS PER ENTERPRISE	Number of enterprises	Number of quarries	WAGE EARNERS (average for the year)		Wages	Value of products	
			Number	Per cent of total						Number	Per cent of total			
<b>BASALT, total</b> .....	137	144	3,053	100.0	\$4,498,093	\$15,543,687	<b>SANDSTONE—Contd.</b>							
Not reported.....	1	1	83	2.7	100,246	295,918	<b>Pennsylvania, total</b> .....							
1 to 5.....	27	27	738	24.2	1,111,735	3,449,271	41	51	595	100.0	\$742,273	\$1,615,444		
6 to 20.....	64	65	929	30.4	1,415,298	4,853,114	13	13	40	6.7	44,437	121,834		
21 to 50.....	29	30	880	29.1	1,223,585	4,033,888	6 to 20.....	20	30	238	40.0	325,510	642,285	
51 to 100.....	13	16	414	13.6	647,220	2,911,496	21 to 50.....	6	0	317	53.3	372,320	861,825	
101 to 250.....	3	5	883	100.0	1,104,036	3,580,184	51 to 100.....	2	2	17	2.7	133,868	260,203	
<b>New Jersey, total</b> .....	26	27	683	100.0	1,104,036	3,580,184	101 to 250.....	1	4	320	72.9	386,130	910,925	
1 to 5.....	2	2	146	21.2	271,037	937,514	<b>Ohio, total</b> .....							
6 to 20.....	11	11	269	39.4	442,717	1,365,590	6 to 20.....	8	8	121	27.1	133,868	260,203	
21 to 50.....	9	9	260	38.4	390,882	1,277,080	21 to 50.....	5	5	121	27.1	133,868	260,203	
51 to 100.....	4	5	500	100.0	716,000	2,236,438	101 to 250.....	1	4	320	72.9	386,130	910,925	
<b>Pennsylvania, total</b> .....	20	22	500	100.0	716,000	2,236,438	<b>New York, total</b> .....							
Not reported.....	1	1	30	5.3	27,151	65,337	28	30	276	100.0	348,660	675,375		
1 to 5.....	8	8	36	6.4	37,178	95,058	1 to 5.....	14	14	41	14.9	45,045	136,367	
6 to 20.....	5	5	200	63.3	477,861	2,042,622	6 to 20.....	10	10	128	46.4	159,875	236,490	
21 to 50.....	1	1	420	100.0	722,983	2,924,085	21 to 50.....	4	15	107	38.8	143,740	302,518	
51 to 100.....	4	4	154	36.7	245,122	881,463	<b>STONE, MISCELLANEOUS, total</b> .....							
101 to 250.....	1	1	200	63.3	477,861	2,042,622	202	232	1,841	100.0	2,405,900	8,466,608		
<b>Connecticut, total</b> .....	19	19	420	100.0	722,983	2,924,085	<b>Not reported</b> .....							
1 to 5.....	1	1	81	22.1	133,541	346,464	1	1	309	16.8	382,897	1,353,444		
6 to 20.....	12	12	74	20.2	129,748	397,505	116	116	709	38.5	910,180	3,497,088		
21 to 50.....	5	5	211	67.7	355,494	1,447,397	6 to 20.....	68	71	429	23.3	470,391	1,342,606	
51 to 100.....	1	1	132	6.1	142,390	412,607	21 to 50.....	14	16	429	23.3	470,391	1,342,606	
<b>Massachusetts, total</b> .....	14	16	360	100.0	618,783	2,191,366	51 to 100.....	3	3	304	21.4	630,432	2,273,470	
1 to 5.....	1	1	81	22.1	133,541	346,464	101 to 250.....	2	26	2	26	2.7	133,868	260,203
6 to 20.....	7	7	74	20.2	129,748	397,505	<b>California, total</b> .....							
21 to 50.....	3	3	211	67.7	355,494	1,447,397	39	63	491	100.0	802,430	3,784,213		
51 to 100.....	3	5	132	6.1	142,390	412,607	1 to 5.....	21	22	64	11.0	76,521	338,325	
<b>SANDSTONE, total</b> .....	143	170	2,150	100.0	2,626,437	6,306,477	6 to 20.....	15	17	170	34.6	260,750	1,401,844	
1 to 5.....	45	45	132	6.1	142,390	412,607	21 to 50.....	2	2	2	2.7	133,868	260,203	
6 to 20.....	99	81	810	37.0	1,000,622	2,251,022	101 to 250.....	1	22	287	54.4	456,159	1,964,044	
21 to 50.....	23	35	709	32.9	851,587	2,197,086	<b>Missouri, total</b> .....							
51 to 100.....	5	5	631	28.4	631,838	1,445,762	19	19	267	100.0	286,938	628,763		
101 to 250.....	1	4	505	23.4	631,838	1,445,762	1 to 5.....	6	6	22	8.2	23,310	73,023	
							6 to 20.....	9	9	110	41.2	122,968	369,999	
							21 to 50.....	4	4	135	50.6	140,930	188,741	

<sup>1</sup> See headnote.

<sup>2</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

Prevailing hours of labor (Table 20).—Enterprises covered by this table in which the prevailing hours per week for wage earners were "54 and over but under 63" employed 56.4 per cent of the total number of wage earners and contributed 60.2 per cent of the

total value of products, shown in this table. Only 28.9 per cent of the total number of wage earners were employed in enterprises in which the 48-hour or shorter working week prevailed.

TABLE 20.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO PREVAILING HOURS OF LABOR PER WEEK, BY INDUSTRIES, FOR SELECTED STATES: 1929

[This table does not include data for 393 enterprises whose value of product was less than \$20,000. Such enterprises were permitted to report on an abbreviated schedule, which did not call for information pertaining to prevailing hours of labor. These enterprises (with total value of products, \$3,199,977) were distributed as follows: Limestone, 149 (\$1,424,060); granite, 95 (\$571,843); slate, 20 (\$160,720); marble, 7 (\$43,837); basalt, 9 (\$87,214); sandstone, 22 (\$180,632); stone, miscellaneous, 91 (\$726,360). Also data for 4 enterprises (granite, 3; basalt, 1) which did not report wage earners are not included in this table]

INDUSTRY, STATE, AND PREVAILING HOURS OF LABOR PER WEEK	Number of enterprises	Number of quarries	Wage earners (average for the year)	Wages	Value of products	INDUSTRY, STATE, AND PREVAILING HOURS OF LABOR PER WEEK	Number of enterprises	Number of quarries	Wage earners (average for the year)	Wages	Value of products
<b>United States—Stone-quarrying industries, total</b> .....	1,852	2,061	55,362	\$68,020,112	\$102,771,453	<b>LIMESTONE—Continued.</b>					
Not reported.....	12	12	91	94,676	168,072	<b>Pennsylvania—Continued</b>					
Under 25.....	6	6	31	22,977	87,312	48	13	1,445	\$2,063,943	\$4,742,355	
25 and over but under 36.....	8	11	111	140,342	279,324	Over 48 but under 54.....	30	38	685	743,131	1,027,985
36 and over but under 40.....	9	10	142	155,962	382,321	54 and over but under 63.....	120	128	3,607	4,603,101	11,597,471
40.....	38	43	1,499	1,592,970	3,786,873	63 and over.....	1	1	1	1	1
Over 40 but under 44.....	6	6	86	118,005	259,821	<b>Indiana, total</b> .....					
44 and over but under 48.....	166	181	5,805	7,654,733	15,579,430	69	94	2,799	3,944,305	12,058,984	
48.....	306	333	8,310	11,264,153	29,955,502	40	1	1	108	112,967	368,096
Over 48 but under 54.....	204	238	6,467	7,897,853	19,453,137	48	4	4	1,160	1,854,966	5,930,776
54 and over but under 63.....	1,052	1,154	31,236	37,087,004	116,111,820	Over 48 but under 54.....	8	20	1,160	1,854,966	5,930,776
63 and over.....	45	67	1,584	1,991,437	6,707,841	54 and over but under 63.....	54	67	2,151	1,976,372	5,700,112
<b>LIMESTONE, total</b> .....	1,018	1,107	31,578	38,500,050	115,833,124	63 and over.....	2	2	2	2	2
Under 25.....	1	1	118	148,196	314,878	<b>Ohio, total</b> .....					
25 and over but under 36.....	6	9	450	400,749	1,140,312	98	102	2,624	3,367,234	11,973,452	
36 and over but under 40.....	2	3	307	332,410	866,949	48	6	7	116	166,084	356,725
40.....	12	13	450	400,749	1,140,312	Over 48 but under 54.....	8	8	135	157,921	442,108
Over 40 but under 44.....	2	2	307	332,410	866,949	54 and over but under 63.....	84	87	2,373	3,043,229	11,174,619
44 and over but under 48.....	21	22	6,090,406	14,739,158	44,739,158	<b>Missouri, total</b> .....					
48.....	127	134	2,801	3,809,213	11,137,845	68	74	2,312	2,397,031	6,116,411	
Over 48 but under 54.....	98	116	2,801	3,809,213	11,137,845	40	1	1	108	112,967	368,096
54 and over but under 63.....	724	780	22,161	26,396,185	83,880,915	44 and over but under 48.....	3	3	161	205,037	393,041
63 and over.....	26	27	999	1,232,891	3,717,267	48.....	3	3	161	205,037	393,041
<b>Pennsylvania, total</b> .....	182	194	5,974	7,706,768	18,953,718	Over 48 but under 54.....	12	13	224	258,923	654,655
25 and over but under 36.....	2	2	72	109,368	228,800	54 and over but under 63.....	49	54	1,886	1,805,703	4,893,229
36 and over but under 40.....	1	2	80	87,344	235,410	<b>New York, total</b> .....					
40.....	2	2	85	90,881	221,697	66	70	1,992	3,105,301	11,372,265	
Over 40 but under 44.....	1	1	80	87,344	235,410	44 and over but under 48.....	3	4	61	78,390	205,973
44 and over but under 48.....	7	7	85	90,881	221,697	48.....	6	6	178	233,687	602,197
						Over 48 but under 54.....	3	3	22	80,473	109,869
						54 and over but under 63.....	54	57	1,731	2,762,751	10,454,226

See footnotes at end of table.

MINES AND QUARRIES

TABLE 20.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO PREVAILING HOURS OF LABOR PER WEEK, BY INDUSTRIES, FOR SELECTED STATES: 1929—Continued

INDUSTRY, STATE, AND PREVAILING HOURS OF LABOR PER WEEK	Number of enterprises	Number of quarries	Wage earners (average for the year)	Wages	Value of products	INDUSTRY, STATE, AND PREVAILING HOURS OF LABOR PER WEEK	Number of enterprises	Number of quarries	Wage earners (average for the year)	Wages	Value of products	
LIMESTONE—Continued.						SLATE, total <sup>1</sup> .....						
Illinois, total.....	51	53	1, 046	\$2, 102, 307	\$7, 822, 668	Not reported.....	12	12	91	\$4, 803, 834	\$10, 325, 664	
44 and over but under 48.....	3	3	12	12, 754	40, 545	40.....	2	2	2	91	94, 670	168, 072
48.....	12	12	289	417, 260	1, 734, 879	44 and over but under 48.....	12	13	2 025	1, 056, 473	2, 011, 776	
Over 48 but under 54.....	3	4				48.....	4	4	52	64, 447	133, 896	
54 and over but under 63.....	30	31	1, 845	1, 672, 263	6, 047, 244	Over 48 but under 54.....	51	59	2, 028	2, 617, 345	4, 946, 847	
63 and over.....	3	3				54 and over but under 63.....	17	18	2 931	970, 893	3, 065, 073	
Michigan, total.....	14	16	1, 566	2, 308, 116	11, 059, 922	63 and over.....	2	2				
40.....	1	1				Pennsylvania, total.....	33	33	1, 051	2, 352, 559	4, 330, 001	
48.....	1	1	2 220	335, 832	980, 373	40.....	2	2	2 760	896, 133	1, 592, 548	
63 and over.....	2	2				44 and over but under 48.....	8	8	958	1, 188, 443	2, 008, 366	
54 and over but under 63.....	10	12	1, 337	1, 972, 284	10, 070, 549	Over 48 but under 54.....	17	17	2 233	267, 983	729, 087	
West Virginia, total.....	17	17	1, 312	1, 458, 460	3, 490, 103	54 and over but under 63.....	5	5				
48.....	6	6	573	604, 747	1, 107, 674	63 and over.....	1	1				
54 and over but under 63.....	11	11	739	853, 713	2, 388, 429	Vermont, total.....	46	54	1, 249	1, 640, 961	3, 542, 629	
Texas, total.....	34	39	1, 164	1, 123, 840	3, 161, 522	Not reported.....	12	12	91	94, 670	168, 072	
25 and over but under 36.....	1	3	1 95	95, 811	206, 287	44 and over but under 48.....	4	5	2 195	195, 340	476, 359	
48.....	3	3				48.....	2	2				
54 and over but under 63.....	25	28	921	877, 340	2, 360, 221	Over 48 but under 54.....	23	31	810	1, 120, 843	2, 054, 365	
63 and over.....	5	5	148	150, 689	595, 014	54 and over but under 63.....	4	4	153	230, 102	843, 833	
Virginia, total.....	43	44	1, 139	992, 832	2, 801, 115	Virginia, total.....	0	7	489	360, 029	850, 382	
36 and over but under 40.....	1	1				Over 48 but under 54.....	1	1	2 489	360, 029	850, 382	
48.....	4	4	2 98	98, 366	347, 518	54 and over but under 63.....	5	6				
Over 48 but under 54.....	2	3				MARBLE, total <sup>1</sup> .....	63	81	3, 308	3, 249, 690	7, 490, 368	
54 and over but under 63.....	35	35	1, 041	894, 516	2, 453, 507	25 and over but under 36.....	1	1	2 217	265, 617	577, 065	
63 and over.....	1	1				36 and over but under 40.....	1	1				
Kentucky, total.....	47	48	1, 083	836, 711	2, 244, 043	44 and over but under 48.....	5	7	94	133, 154	352, 120	
Under 25.....	1	1	2 20	12, 540	50, 775	48.....	10	10	684	490, 105	1, 072, 904	
40.....	2	2				Over 48 but under 54.....	7	9	2, 413	2, 360, 814	5, 488, 180	
Over 48 but under 54.....	5	6	78	72, 150	176, 013	54 and over but under 63.....	38	51	2 413	2, 360, 814	5, 488, 180	
54 and over but under 63.....	39	39	985	752, 021	2, 017, 855	63 and over.....	1	2				
Alabama, total.....	20	22	950	836, 965	1, 871, 790	Tennessee, total.....	13	14	1, 377	1, 093, 582	2, 287, 938	
40.....	4	5	2 409	353, 120	711, 441	Over 48 but under 54.....	1	1	2 1, 377	1, 093, 582	2, 287, 938	
Over 48 but under 54.....	1	1				54 and over but under 63.....	12	13				
54 and over but under 63.....	15	16	541	483, 839	1, 100, 349	Vermont, total.....	9	23	658	785, 579	1, 829, 315	
GRANITE, total <sup>1</sup> .....	308	336	9, 806	12, 404, 284	20, 788, 331	25 and over but under 36.....	1	1	2 658	785, 579	1, 829, 315	
Under 25.....	4	4	2 44	58, 015	120, 281	Over 48 but under 54.....	1	2				
25 and over but under 36.....	1	1				54 and over but under 63.....	6	18				
36 and over but under 40.....	4	4	2 97	88, 394	198, 634	63 and over.....	1	2				
Over 40 but under 44.....	2	2				Alabama, total.....	3	3	358	333, 544	653, 940	
40.....	17	20	595	676, 222	1, 532, 818	Over 48 but under 54.....	1	1	2 358	333, 544	653, 940	
44 and over but under 48.....	110	118	4, 239	5, 889, 779	11, 826, 457	54 and over but under 63.....	2	2				
48.....	75	88	2, 326	3, 277, 504	9, 155, 696	Missouri, total.....	6	8	290	335, 909	752, 978	
Over 48 but under 54.....	22	22	671	556, 165	1, 345, 533	44 and over but under 48.....	2	4	2 299	335, 909	752, 978	
54 and over but under 63.....	73	77	1, 834	1, 858, 205	5, 068, 912	54 and over but under 63.....	4	4				
Massachusetts, total.....	37	38	1, 552	2, 021, 342	5, 384, 350	Georgia, total.....	4	4	-283	231, 923	740, 162	
40.....	3	4	59	84, 214	163, 922	Over 48 but under 54.....	2	2	2 283	231, 923	740, 162	
44 and over but under 48.....	23	23	1, 270	2, 145, 505	3, 807, 580	54 and over but under 63.....	2	2				
48.....	6	5	2 104	160, 133	519, 931	BASALT, total <sup>1</sup> .....	127	134	3, 016	4, 456, 211	15, 453, 973	
Over 48 but under 54.....	1	1				40.....	3	3	2 127	169, 076	448, 238	
54 and over but under 63.....	5	5	119	231, 490	802, 017	Over 40 but under 44.....	1	1				
North Carolina, total.....	22	22	1, 326	1, 254, 322	3, 062, 724	44 and over but under 48.....	1	1				
36 and over but under 40.....	1	1				48.....	26	28	406	608, 871	1, 969, 822	
40.....	1	1	2 749	768, 483	1, 805, 085	Over 48 but under 54.....	9	9	73	98, 941	237, 478	
44 and over but under 48.....	3	3				54 and over but under 63.....	82	87	2, 319	3, 474, 517	12, 425, 202	
Over 48 but under 54.....	2	2				63 and over.....	5	5	91	104, 806	373, 173	
54 and over but under 63.....	15	15	577	485, 839	1, 257, 639	New Jersey, total.....	26	27	683	1, 104, 636	3, 580, 184	
Georgia, total.....	26	28	1, 261	1, 029, 684	2, 192, 813	44 and over but under 48.....	1	1	2 44	88, 043	275, 798	
40.....	2	2	2 747	650, 684	1, 356, 629	48.....	2	2				
44 and over but under 48.....	11	12				54 and over but under 63.....	23	24	639	1, 016, 593	3, 304, 386	
Over 48 but under 54.....	7	7	335	259, 882	511, 110	Pennsylvania, total.....	18	20	564	714, 509	2, 228, 638	
54 and over but under 63.....	6	7	179	118, 518	325, 174	40.....	3	3	82	83, 867	257, 545	
Vermont, total.....	18	19	935	1, 378, 443	3, 841, 857	Over 48 but under 54.....	5	5	27	23, 840	60, 500	
44 and over but under 48.....	8	8	289	406, 346	788, 653	54 and over but under 63.....	9	11	2 455	608, 802	1, 910, 593	
48.....	10	11	646	970, 997	3, 053, 204	63 and over.....	1	1				
Minnesota, total.....	25	37	923	1, 230, 396	3, 617, 633	Connecticut, total.....	19	19	420	722, 983	2, 924, 085	
44 and over but under 48.....	5	7	82	125, 488	434, 623	Over 48 but under 54.....	1	1	2 420	722, 983	2, 924, 085	
48.....	19	29				54 and over but under 63.....	18	18				
54 and over but under 63.....	1	1	2 841	1, 104, 010	3, 183, 010	Massachusetts, total.....	14	16	366	618, 783	2, 191, 309	
						48.....	3	5	95	173, 088	685, 820	
						54 and over but under 63.....	11	11	271	445, 685	1, 505, 546	

See footnotes at end of table.

TABLE 20.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO PREVAILING HOURS OF LABOR PER WEEK, BY INDUSTRIES, FOR SELECTED STATES: 1929—Continued

INDUSTRY, STATE, AND PREVAILING HOURS OF LABOR PER WEEK	Number of enterprises	Number of quarries	Wage earners (average for the year)	Wages	Value of products	INDUSTRY, STATE, AND PREVAILING HOURS OF LABOR PER WEEK	Number of enterprises	Number of quarries	Wage earners (average for the year)	Wages	Value of products
SANDSTONE, total <sup>1</sup>	123	150	2,058	\$2,516,315	\$6,131,345	New York, total	24	35	260	\$338,185	\$651,025
Under 25	1	1	1			44 and over but under 48	2	2	2 39	47,790	76,400
40	4	5	137	149,050	384,280	48	4	4	227	200,380	574,565
Over 40 but under 44	1	1				54 and over but under 63	18	29			
44 and over but under 48	14	17	344	375,380	754,178	STONE, MISCELLANEOUS, total <sup>1</sup>	113	143	1,569	2,080,728	7,748,648
48	28	28	399	527,929	1,416,258	36 and over but under 40	2	2	2 74	74,422	169,185
Over 48 but under 54	7	12	71	85,453	284,794	44 and over but under 48	3	3	381	562,142	2,191,543
54 and over but under 63	66	84	1,107	1,877,594	3,291,835	48	36	41	149	150,028	427,870
63 and over	2	2				Over 48 but under 54	10	11	149	942,507	3,366,281
Pennsylvania, total	33	43	543	680,216	1,535,691	54 and over but under 63	52	57	743	359,939	1,593,763
40	1	1				63 and over	10	29	222		
Over 40 but under 44	1	1				California, total	80	54	473	780,932	3,716,194
44 and over but under 48	3	3	71	74,175	277,192	36 and over but under 40	1	1			
48	1	1				48	18	23	2 243	364,370	1,042,293
Over 48 but under 54	5	10	45	50,102	155,360	Over 48 but under 54	1	1			
54 and over but under 63	21	29	427	540,939	1,103,130	54 and over but under 63	5	5	47	89,381	774,619
63 and over	1	1				63 and over	5	24	183	307,172	1,209,282
Ohio, total	14	17	447	520,032	1,186,128	Missouri, total	16	16	259	277,677	600,834
40	1	1				36 and over but under 40	1	1			
44 and over but under 48	6	9	325	357,663	707,290	44 and over but under 48	1	1	2 120	129,728	240,965
54 and over but under 63	6	6	122	162,369	478,838	48	3	3			
63 and over	1	1				54 and over but under 63	10	10	2 139	147,949	359,369
						63 and over	1	1			

<sup>1</sup> See headnote.

<sup>2</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

Days per week in operation (Table 21).—The 6-day week prevailed for wage earners in those enterprises covered by this table for the stone-quarrying industries as a whole. Enterprises operating on this basis employed 63.9 per cent of the wage earners, and con-

tributed 69.4 per cent of the total value of products shown in this table, while those operating on a 5½-day basis accounted for 27.6 per cent of the wage earners and 24.3 per cent of the total value of products. Other classes were of minor importance.

TABLE 21.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO NUMBER OF DAYS IN OPERATION PER WEEK, BY INDUSTRIES: 1929

[This table does not include data for 393 enterprises whose value of product was less than \$20,000. Such enterprises were permitted to report on an abbreviated schedule, which did not call for information pertaining to time in operation. These enterprises (with total value of products, \$3,199,977) were distributed as follows: Limestone, 149 (\$1,424,600); granite, 95 (\$571,848); slate, 20 (\$160,726); marble, 7 (\$48,537); basalt, 9 (\$87,214); sandstone, 22 (\$180,632); stone, miscellaneous, 91 (\$726,300)]

INDUSTRY AND DAYS PER WEEK	Number of enterprises	Number of quarries	Wage earners, Dec. 14 or nearest representative day <sup>1</sup>	Wages	Value of products	INDUSTRY AND DAYS PER WEEK	Number of enterprises	Number of quarries	Wage earners, Dec. 14 or nearest representative day <sup>1</sup>	Wages	Value of products
Stone-quarrying industries, total <sup>2</sup>	1,866	2,065	61,120	\$68,020,112	\$192,795,147	Marble, total <sup>2</sup>	63	81	3,388	\$3,249,690	\$7,490,368
Not reported	18	18	100	102,396	215,511	Three or under	1	1			
Three or under	6	6	69	56,210	120,679	Four	1	1	2 114	105,013	287,130
Three and one-half	1	1				Five	3	3			
Four	12	12	679	408,859	1,014,174	Five and one-half	20	24	1,640	1,527,485	3,217,308
Four and one-half	1	1				Six	38	52	1,625	1,617,192	3,985,930
Five	94	104	2,963	2,758,354	6,539,713	Basalt, total <sup>2</sup>	128	135	3,342	4,456,211	15,456,473
Five and one-half	469	528	16,860	19,500,313	46,809,438	Not reported	1	1	2 97	187,449	497,738
Six	1,212	1,348	39,029	43,486,183	133,819,563	Five	9	9	667	774,472	2,325,098
Six and one-half	2	3	1,440	1,708,797	4,276,169	Five and one-half	13	15	667	3,427,182	12,448,887
Seven	41	44				Six	99	103	2,473	67,108	184,750
Limestone, total <sup>2</sup>	1,018	1,107	34,532	33,500,050	116,833,124	Seven	6	7	105		
Three or under	1	1	136	239,702	571,146	Sandstone, total <sup>2</sup>	123	150	2,872	2,516,315	6,131,345
Six and one-half	2	3				Three or under	1	1			
Four	6	6	332	250,780	533,987	Four	1	1	2 122	127,527	432,641
Five	36	39	726	741,168	2,158,109	Five	1	1			
Five and one-half	203	235	5,632	6,608,348	19,328,043	Seven	1	1			
Six	742	793	26,685	29,495,189	90,444,943	Five	11	15	683	431,011	843,440
Seven	28	30	1,021	1,164,863	2,801,896	Five and one-half	13	14	195	133,695	396,847
Granite, total <sup>2</sup>	311	339	10,786	12,404,284	29,809,525	Six	96	118	1,872	1,824,182	4,458,408
Not reported	5	5	9	7,720	44,939	Miscellaneous, total <sup>2</sup>	113	143	2,189	2,089,728	7,748,648
Three or under	3	3	39	51,695	99,336	Four	1	1	2 86	56,864	169,934
Three and one-half	1	1				Five	3	3			
Four	3	3	248	99,355	210,693	Five and one-half	15	16	219	196,129	522,367
Four and one-half	1	1				Six	88	117	1,749	1,694,344	6,601,621
Five	25	28	862	766,348	1,744,170	Seven	6	6	135	142,391	454,736
Five and one-half	144	163	5,692	7,038,297	14,607,439						
Six	129	145	3,936	4,440,969	13,072,648						
Slate, total <sup>2</sup>	100	110	4,011	4,803,834	10,325,064						
Not reported	12	12	91	94,676	168,072						
Five	7	7	435	501,046	933,420						
Five and one-half	61	71	2,796	3,221,687	6,417,546						
Six	20	20	889	936,125	2,808,820						

<sup>1</sup> The totals differ considerably from those for "Wage earners (average for the year)" given in certain other tables of this report. See GENERAL EXPLANATIONS—Persons Engaged.  
<sup>2</sup> See headnote. <sup>3</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

Wage earners employed, by months (Tables 22 and 23).—Table 22 gives the numbers employed below ground in underground operations and those employed in open quarries, with which are included data for surface employees of underground enterprises. The number of wage earners employed underground (3,389) reflects the growth of underground operations when compared with the number (1,511) reported for 1919. This growth has taken place mainly in the limestone-quarrying industry.

Although the marble industry reported no wage earners employed below ground in 1919, as contrasted with 509 in 1929, there were a few marble quarries in 1919 which were underground workings. Enterprises

in the slate industry reported 131 wage earners employed below ground in 1929, as compared with 731 in 1919. This decrease is accounted for by the fact that in 1919 some slate quarries which reported wage earners below ground were merely deep open pits, but because of the hazards of operating these deep pits the classification of wage earners as employed underground, made by the reporting operators, was accepted. However, the 1929 figures represent only wage earners actually employed below ground at underground quarries.

Table 23 gives the numbers employed, by months, for the several industries, by States, and reflects the activity that prevailed during the year.

TABLE 22.—WAGE EARNERS, BY MONTHS, EMPLOYED ON THE SURFACE AND BELOW GROUND, BY INDUSTRIES: 1929

[This table does not include data for 333 enterprises (which accounted for only 2.6 per cent of the total number of wage earners) whose value of product was less than \$20,000. Such enterprises were permitted to report on an abbreviated schedule, which did not call for information pertaining to surface and below-ground employees. The month of maximum employment is indicated by bold-faced figures and that of minimum employment by *italic* figures.]

INDUSTRY AND CLASS OF WAGE EARNER	Average number employed during year	NUMBER EMPLOYED ON 15TH DAY OF MONTH OR NEAREST REPRESENTATIVE DAY												Per cent minimum is of maximum
		January	February	March	April	May	June	July	August	September	October	November	December	
Stone-quarrying industries, total.....	55,302	<b>43,736</b>	44,698	50,545	56,002	60,778	62,349	62,303	<b>62,728</b>	60,008	59,305	54,317	46,367	69.7
Surface.....	51,973	<b>40,818</b>	41,719	47,381	53,265	57,042	58,464	58,501	<b>58,843</b>	57,032	55,835	51,189	43,569	69.4
Below ground.....	3,389	<i>2,918</i>	2,979	3,164	3,337	3,736	3,885	3,807	3,885	3,526	3,470	3,158	<i>2,798</i>	72.0
Limestone, total.....	31,578	<b>23,920</b>	24,851	28,608	32,357	35,118	36,050	36,202	<b>36,274</b>	34,691	33,973	30,857	26,010	60.0
Surface.....	28,854	<b>21,671</b>	22,544	26,107	29,070	32,033	32,880	33,075	<b>33,101</b>	31,844	31,158	28,309	23,805	65.5
Below ground.....	2,724	<i>2,255</i>	2,307	2,501	2,687	3,035	3,176	3,127	3,173	2,847	2,815	2,548	<i>2,214</i>	69.7
Marble, total.....	3,308	<b>3,207</b>	3,187	3,224	3,286	3,401	3,379	3,382	<b>3,486</b>	3,468	3,374	3,216	<i>3,095</i>	88.8
Surface.....	2,799	<b>2,683</b>	2,659	2,707	2,788	2,801	2,841	2,861	<b>2,937</b>	2,941	2,884	2,767	2,660	90.4
Below ground.....	509	<i>524</i>	528	517	498	540	538	521	549	517	490	449	<i>436</i>	79.2
Slate, total.....	4,027	<b>4,124</b>	4,136	4,197	4,027	4,100	4,151	3,977	<b>4,022</b>	4,022	3,974	3,841	<i>3,743</i>	89.2
Surface.....	3,896	<b>3,906</b>	4,006	4,066	3,896	3,973	4,008	3,843	<b>3,886</b>	3,891	3,847	3,717	<i>3,620</i>	80.0
Below ground.....	131	<i>128</i>	130	131	131	133	143	134	136	131	127	124	<i>123</i>	86.0
Other industries <sup>1</sup> .....	16,449	<b>12,479</b>	12,524	14,516	16,932	18,153	18,763	18,747	<b>18,946</b>	18,437	17,984	16,403	13,510	65.0
Surface.....	16,424	<b>12,468</b>	12,510	14,501	16,911	18,125	18,735	18,722	<b>18,919</b>	18,406	17,946	16,366	13,484	65.0
Below ground.....	25	<i>11</i>	14	15	21	28	28	25	27	31	38	37	26	28.0

<sup>1</sup> Basalt, granite, sandstone, and stone, miscellaneous.

TABLE 23.—WAGE EARNERS, BY MONTHS, BY INDUSTRIES AND STATES: 1929

[The month of maximum employment is indicated by bold-faced figures and that of minimum employment by *italic* figures]

INDUSTRY AND STATE	Average number employed during year	NUMBER EMPLOYED ON 15TH DAY OF MONTH OR NEAREST REPRESENTATIVE DAY												Per cent minimum is of maximum
		January	February	March	April	May	June	July	August	September	October	November	December	
United States—Stone quarrying industries, total.....	56, 835	<b>45, 068</b>	46, 050	51, 987	58, 126	62, 336	63, 934	63, 867	64, 276	62, 110	60, 805	55, 738	47, 720	70. 1
Limestone.....	32, 300	<b>24, 507</b>	25, 452	29, 290	33, 130	35, 925	36, 890	37, 010	37, 071	35, 442	34, 722	31, 527	26, 621	66. 1
Granite.....	10, 037	<b>8, 405</b>	8, 457	9, 407	10, 134	10, 887	11, 078	11, 028	11, 164	10, 780	10, 577	9, 873	8, 654	75. 3
Basalt.....	3, 053	<b>2, 062</b>	2, 127	2, 546	3, 181	3, 457	3, 539	3, 503	3, 545	3, 511	3, 374	3, 161	2, 631	58. 2
Slate.....	4, 098	<b>4, 195</b>	4, 207	4, 269	4, 098	4, 177	4, 222	4, 048	4, 093	4, 093	4, 045	3, 912	3, 814	89. 4
Marble.....	3, 350	<b>3, 249</b>	3, 229	3, 200	3, 328	3, 443	3, 421	3, 424	3, 528	3, 500	3, 416	3, 253	3, 137	88. 9
Sandstone.....	2, 156	<b>1, 812</b>	1, 822	1, 857	2, 526	2, 577	2, 695	2, 662	2, 601	2, 552	2, 491	2, 078	1, 407	47. 9
Miscellaneous.....	1, 841	<b>1, 838</b>	1, 826	1, 814	1, 729	1, 870	2, 089	2, 192	2, 274	2, 232	2, 180	1, 929	1, 456	56. 6
LIMESTONE														
<i>Individual States</i>														
Alabama.....	957	974	<b>1, 018</b>	1, 009	985	968	984	996	975	929	918	882	<b>844</b>	83. 3
Arizona.....	62	62	62	62	62	62	62	62	62	62	62	62	62	56. 5
Arkansas.....	120	122	129	133	124	102	114	114	161	120	120	97	104	82. 0
California.....	675	621	633	661	705	746	712	719	720	705	634	656	672	82. 0
Colorado.....	233	213	<b>211</b>	212	217	239	242	224	214	234	210	267	308	63. 6
Connecticut.....	61	<b>49</b>	51	63	65	74	74	64	64	62	59	50	51	66. 2
Florida.....	495	492	481	481	532	510	602	573	553	471	471	573	391	62. 8
Georgia.....	315	271	333	341	332	363	338	324	333	356	289	290	224	61. 7
Illinois.....	1, 640	<b>1, 200</b>	1, 288	1, 390	1, 716	1, 855	1, 917	1, 915	1, 882	1, 831	1, 741	1, 648	1, 338	66. 0
Indiana.....	2, 881	<b>1, 822</b>	1, 999	2, 595	3, 200	3, 400	3, 565	3, 811	3, 458	3, 321	3, 182	2, 610	2, 030	51. 3
Iowa.....	632	422	<b>300</b>	473	657	709	776	779	796	739	710	690	508	50. 1
Kansas.....	700	<b>510</b>	557	605	758	808	770	770	796	726	724	695	613	63. 1
Kentucky.....	1, 147	755	<b>726</b>	1, 019	1, 310	1, 330	1, 438	1, 447	1, 300	1, 185	1, 251	1, 115	888	50. 2
Maine.....	114	104	83	114	123	131	128	123	124	111	114	102	105	71. 0
Maryland.....	409	311	<b>300</b>	340	377	411	423	459	477	490	507	467	354	59. 2
Massachusetts.....	111	100	109	128	130	118	115	103	104	100	105	104	95	73. 1
Michigan.....	1, 566	<b>1, 052</b>	1, 116	1, 248	1, 577	1, 905	1, 913	1, 919	1, 850	1, 781	1, 766	1, 684	1, 076	54. 8
Minnesota.....	233	154	<b>163</b>	217	238	274	274	274	273	248	243	230	207	51. 8
Missouri.....	2, 360	<b>1, 775</b>	1, 740	2, 121	2, 266	2, 444	2, 637	2, 085	2, 813	2, 747	2, 650	2, 383	1, 950	61. 1
Montana.....	76	30	<b>59</b>	63	83	93	92	74	79	77	84	72	60	63. 4
New Jersey.....	234	215	236	247	255	222	246	243	248	238	236	227	196	76. 0
New York.....	1, 068	868	1, 340	1, 822	2, 123	2, 208	2, 395	2, 429	2, 455	2, 395	2, 276	1, 945	1, 633	35. 4
Ohio.....	2, 660	<b>1, 953</b>	1, 961	2, 279	2, 637	2, 584	3, 067	3, 067	3, 126	3, 112	2, 973	2, 658	2, 281	62. 5
Oklahoma.....	507	471	<b>448</b>	505	463	489	435	561	543	528	550	500	413	79. 0
Oregon.....	65	59	66	68	71	100	68	53	77	58	86	41	56	41. 0
Pennsylvania.....	6, 048	5, 032	5, 096	5, 455	5, 974	6, 678	6, 729	6, 817	6, 896	6, 530	6, 533	5, 882	4, 907	71. 2
Tennessee.....	6, 573	<b>467</b>	520	547	641	677	653	617	614	646	556	534	499	69. 0
Texas.....	1, 170	<b>975</b>	989	1, 075	1, 179	1, 165	1, 228	1, 300	1, 274	1, 198	1, 245	1, 253	1, 157	75. 0
Utah.....	103	66	86	129	124	120	132	163	116	85	70	77	60	36. 8
Vermont.....	39	23	22	49	56	53	53	48	41	22	22	18	24	32. 1
Virginia.....	1, 270	<b>957</b>	1, 021	1, 247	1, 346	1, 407	1, 411	1, 478	1, 402	1, 352	1, 352	1, 162	1, 102	64. 7
Washington.....	202	163	160	108	232	251	212	206	197	288	235	191	173	37. 6
West Virginia.....	1, 319	1, 006	1, 152	1, 310	1, 203	1, 493	1, 480	1, 485	1, 559	1, 405	1, 318	1, 288	1, 096	66. 5
Wisconsin.....	817	<b>498</b>	504	570	792	982	1, 001	1, 042	965	920	921	896	693	47. 8
Wyoming.....	185	180	202	181	170	183	185	181	171	159	194	204	198	77. 0
<i>Groups of States</i>														
La., N. C., and R. I.....	121	129	141	144	158	156	156	94	94	94	94	94	94	59. 5
Nebr. and S. Dak.....	138	72	69	76	136	167	217	210	189	148	132	118	113	31. 8
Nev. and N. Mex.....	65	63	63	65	68	68	63	68	68	62	62	62	62	91. 2
GRANITE														
<i>Individual States</i>														
California.....	235	<b>187</b>	190	242	248	251	289	256	219	208	269	242	242	69. 5
Colorado.....	77	<b>51</b>	62	63	57	86	93	86	98	90	92	90	64	52. 0
Connecticut.....	217	<b>108</b>	137	169	189	199	239	255	268	281	274	277	208	38. 4
Georgia.....	1, 265	<b>1, 080</b>	1, 097	1, 098	1, 157	1, 358	1, 333	1, 404	1, 303	1, 361	1, 331	1, 314	1, 200	77. 4
Maine.....	881	<b>379</b>	310	870	1, 035	1, 053	1, 104	1, 069	1, 066	1, 044	988	872	777	28. 1
Maryland.....	113	<b>69</b>	71	76	120	126	136	131	131	131	128	128	107	50. 7
Massachusetts.....	1, 554	<b>1, 350</b>	1, 463	1, 540	1, 672	1, 729	1, 657	1, 618	1, 713	1, 568	1, 610	1, 589	1, 136	65. 7
Minnesota.....	923	<b>367</b>	364	381	934	950	980	950	948	953	939	930	912	80. 3
Missouri.....	31	<b>33</b>	31	30	31	32	32	31	33	30	32	31	29	87. 9
Montana.....	32	<b>23</b>	21	31	35	35	37	37	37	38	34	31	23	51. 2
New Hampshire.....	315	<b>201</b>	225	219	310	383	398	417	417	398	345	263	203	48. 2
New York.....	105	<b>74</b>	72	70	86	126	136	130	127	119	124	104	82	52. 9
North Carolina.....	1, 396	<b>1, 400</b>	1, 314	1, 366	1, 391	1, 511	1, 529	1, 406	1, 431	1, 431	1, 444	1, 282	1, 202	78. 6
Oklahoma.....	50	<b>42</b>	47	56	55	53	51	48	53	53	53	41	50	78. 2
Pennsylvania.....	263	<b>181</b>	189	226	267	298	302	312	307	305	290	264	213	58. 0
Rhode Island.....	223	<b>199</b>	193	210	216	244	251	236	233	233	225	220	188	71. 5
South Carolina.....	669	<b>724</b>	719	730	732	710	664	681	657	655	642	631	614	71. 7
South Dakota.....	77	<b>68</b>	68	67	68	70	82	80	85	87	89	70	78	75. 3
Texas.....	57	<b>54</b>	54	63	63	63	63	63	63	63	63	55	55	55. 6
Vermont.....	952	<b>904</b>	912	921	941	976	983	987	997	1, 000	984	950	868	86. 6
Virginia.....	200	<b>198</b>	192	187	198	222	218	224	217	226	212	191	166	50. 0
Wisconsin.....	283	<b>145</b>	160	196	205	288	354	459	455	452	284	193	204	31. 6
<i>Groups of States</i>														
Ariz., Idaho, and Utah.....	7	<b>1</b>	1	3	5	6	14	13	13	18	6	1	1	5. 6
Del., D. C., and N. J.....	81	<b>43</b>	55	66	84	90	92	100	110	91	83	80	78	43. 6
Oreg. and Wash.....	31	<b>23</b>	22	28	29	28	26	35	41	39	36	20	20	53. 7

## MINES AND QUARRIES

TABLE 23.—WAGE EARNERS, BY MONTHS, BY INDUSTRIES AND STATES: 1929—Continued

[The month of maximum employment is indicated by bold-faced figures and that of minimum employment by *italic* figures]

INDUSTRY AND STATE	Average number employed during year	NUMBER EMPLOYED ON 15TH DAY OF MONTH OR NEAREST REPRESENTATIVE DAY												Per cent minimum is of maximum
		January	February	March	April	May	June	July	August	September	October	November	December	
<b>BASALT</b>														
<i>Individual States</i>														
California.....	221	195	194	203	210	235	250	228	245	248	239	220	<i>189</i>	75.6
Connecticut.....	420	320	<i>311</i>	318	441	488	480	491	499	483	463	405	352	62.7
Idaho.....	22	<i>5</i>	<i>5</i>	<i>5</i>	5	25	25	24	25	42	44	48	24	10.9
Maryland.....	232	82	106	226	270	293	296	282	278	289	272	248	145	27.7
Massachusetts.....	366	190	169	232	412	421	443	478	475	467	440	394	267	35.4
New Jersey.....	653	568	<i>590</i>	614	708	726	729	741	738	734	713	709	653	75.6
Oregon.....	83	53	<i>51</i>	68	93	114	118	60	109	114	76	68	77	26.3
Pennsylvania.....	569	<i>408</i>	430	523	562	654	679	641	629	606	616	568	472	60.1
Washington.....	94	60	<i>58</i>	71	81	65	84	106	131	123	111	127	114	44.3
<i>Groups of States</i>														
Ark. and Tex.....	95	<i>50</i>	<i>50</i>	105	106	100	103	102	92	103	108	110	108	45.5
Me., N. Y., R. I., and Va.....	184	76	148	113	210	232	226	235	212	190	206	197	164	32.3
Mich. and Minn.....	87	<i>55</i>	65	73	83	109	106	109	115	112	86	69	66	47.8
<b>SLATE</b>														
<i>Individual States</i>														
New York.....	155	140	156	158	164	159	172	168	171	137	153	128	144	74.4
Pennsylvania.....	1,951	1,936	1,924	1,971	1,964	1,977	1,996	1,914	1,933	1,982	1,962	1,946	1,911	95.8
Vermont.....	1,303	1,450	1,477	1,456	1,257	1,201	1,301	1,248	1,275	1,299	1,248	1,100	1,139	77.1
Virginia.....	489	477	478	490	510	618	681	492	492	478	470	473	460	86.4
<i>Groups of States</i>														
Calif., Me., and N. J.....	65	61	61	60	67	66	75	71	68	68	66	57	58	76.0
Ga. and Md.....	135	125	111	133	136	160	148	155	154	129	140	118	103	62.0
<b>MARBLE</b>														
<i>Individual States</i>														
Alabama.....	358	364	361	361	354	355	361	358	365	369	348	353	363	94.3
Arkansas.....	14	<i>5</i>	<i>5</i>	17	17	17	17	17	17	17	17	17	5	29.4
Georgia.....	289	287	285	279	286	284	290	291	294	293	283	278	281	94.6
Massachusetts.....	68	<i>51</i>	55	59	66	76	74	75	76	79	79	66	66	64.6
Missouri.....	299	358	305	305	306	310	302	316	313	298	285	263	233	67.4
New York.....	105	108	90	96	106	130	116	123	128	125	90	84	65	50.0
Tennessee.....	1,377	1,235	1,311	1,327	1,363	1,339	1,373	1,369	1,421	1,434	1,471	1,406	1,377	87.2
Vermont.....	653	656	676	672	666	685	676	661	702	674	643	595	585	83.3
<i>Groups of States</i>														
Ariz., Colo., Mont., and Utah.....	42	17	17	17	18	52	62	59	56	53	51	54	45	27.4
Calif., Oreg., and Wash.....	35	<i>32</i>	<i>32</i>	<i>32</i>	36	36	36	36	37	37	37	37	32	80.5
Conn., Md., Mich., Minn., N. J., and N. C.....	108	93	<i>92</i>	101	105	109	116	110	119	121	112	105	101	70.0
<b>SANDSTONE</b>														
<i>Individual States</i>														
California.....	164	167	167	158	157	181	202	165	160	153	165	160	130	64.4
Colorado.....	12	15	0	13	13	13	11	11	11	11	0	9	15	60.0
New York.....	276	197	147	201	338	390	377	351	335	326	306	243	105	36.3
Ohio.....	447	342	328	413	683	490	515	531	443	436	442	421	316	45.3
Pennsylvania.....	595	304	<i>276</i>	379	624	739	799	787	772	800	769	554	339	34.5
South Dakota.....	53	<i>23</i>	<i>23</i>	26	45	81	72	77	81	87	86	47	34	32.2
Virginia.....	46	<i>39</i>	<i>39</i>	39	48	48	48	48	48	48	48	48	48	79.6
Wisconsin.....	40	<i>5</i>	16	20	43	47	66	43	78	51	61	32	27	5.4
<i>Groups of States</i>														
Ala., Ky., and Tenn.....	35	<i>2</i>	<i>2</i>	32	28	26	32	23	70	62	61	44	44	2.9
Ariz., Idaho, N. Mex., and Wyo.....	92	44	49	104	116	113	111	122	115	109	98	89	40	32.8
Ark., Kans., Minn., and Okla.....	127	<i>62</i>	69	93	137	164	164	154	144	143	143	143	114	37.8
Conn., Mass., N. J., and W. Va.....	56	43	<i>34</i>	53	60	54	56	82	79	70	67	54	42	41.5
Oreg. and Wash.....	268	124	128	153	244	261	269	281	254	254	236	234	63	22.4
<b>MISCELLANEOUS</b>														
<i>Individual States</i>														
California.....	491	497	493	490	457	450	507	506	508	497	527	515	443	84.1
Illinois.....	37	35	40	41	44	44	42	42	50	30	27	24	21	42.0
Indiana.....	129	37	45	65	138	145	164	182	187	189	159	115	125	19.6
Kansas.....	42	33	33	<i>21</i>	21	31	31	30	61	64	64	62	42	32.8
Kentucky.....	63	33	<i>33</i>	63	74	77	77	74	74	77	77	63	33	42.9
Maryland.....	81	<i>16</i>	<i>16</i>	37	33	33	32	35	35	33	33	33	35	43.2
Massachusetts.....	85	18	<i>14</i>	88	84	122	130	131	136	128	114	90	82	10.3
Missouri.....	267	173	<i>146</i>	227	272	285	295	316	353	342	329	276	187	41.4
New York.....	96	<i>25</i>	<i>25</i>	<i>25</i>	33	66	164	172	173	161	147	100	62	13.3
Ohio.....	21	<i>17</i>	<i>17</i>	25	25	25	25	25	25	17	17	17	17	68.0
Pennsylvania.....	168	145	<i>135</i>	145	171	183	178	184	183	181	187	172	153	72.2
Washington.....	42	7	8	33	33	30	29	78	79	79	68	55	7	8.9
<i>Groups of States</i>														
Ala., Fla., N. C., Tenn., Va., and W. Va.....	97	<i>72</i>	<i>72</i>	76	77	77	102	112	115	117	127	122	99	56.7
Ariz., Mont., Nev., N. Mex., and Oreg.....	110	72	73	82	111	138	136	124	128	152	139	123	39	25.7
Ark., Okla., and Tex.....	24	193	114	124	118	126	115	117	105	103	115	125	112	77.4
Iowa, Mich., Minn., and Wis.....	24	<i>11</i>	<i>11</i>	15	15	15	38	38	39	39	33	26	11	28.2
Me., N. H., N. J., and R. I.....	18	<i>13</i>	<i>13</i>	13	23	23	23	23	23	23	20	13	13	56.5

GENERAL TABLES

Tables 24 and 25 present in detail, for 1929, statistics relating to the stone-quarrying industries for the United States as a whole and for each State for which separate figures can be given without disclosing, exactly or approximately, the data reported by individual enterprises.

TABLE 24.—CONSUMPTION OF FUEL AND ELECTRIC ENERGY, BY INDUSTRIES AND STATES: 1929

[This table does not include data for 393 enterprises whose value of product was less than \$20,000. Such enterprises were permitted to report on an abbreviated schedule, which did not call for information pertaining to fuel and electric energy consumed. The combined value of products represented by these enterprises was \$3,199,977, or 1.6 per cent of the total]

INDUSTRY AND STATE	FUEL AND ELECTRIC ENERGY CONSUMED							
	Fuel					Electric energy		
	Coal		Coke, tons (2,000 pounds)	Fuel oils, gallons	Gasoline and kerosene, gallons	Natural gas, M cubic feet	Purchased, kilowatt-hours	Generated by enterprises reporting, kilowatt-hours
Anthracite, tons (2,240 pounds)	Bituminous, tons (2,000 pounds)							
United States—Stone-quarrying industries, total	54,303	1,064,282	5,064	11,035,697	5,593,299	202,428	451,231,298	38,790,489
Limestone	44,060	805,238	4,574	6,178,983	3,616,524	117,742	294,930,770	37,056,818
Granite	5,401	79,454	245	1,448,018	680,081	14,056	56,884,163	943,290
Basalt	1,090	53,934	702	523,507	554,638	—	30,746,089	—
Slate	2,454	34,360	—	91,204	26,730	—	18,797,538	672,043
Marble	284	49,765	143	27,684	40,298	—	21,726,805	108
Sandstone	1,075	30,060	—	971,974	155,057	3,430	11,858,041	118,520
Miscellaneous	17	11,465	—	1,790,727	434,971	67,200	10,287,892	—
<b>LIMESTONE</b>								
<i>Individual States</i>								
Alabama	—	25,137	1	19,133	31,403	—	8,716,122	184,650
Arizona	—	500	—	—	7,500	—	11,450	—
Arkansas	1,200	220	—	1,500	17,250	—	274,144	—
California	—	145	—	3,360,587	86,084	—	6,222,918	1,000,000
Colorado	—	1,497	—	—	6,976	—	520,587	—
Connecticut	—	65	—	—	10,637	—	521,464	—
Florida	—	9,149	—	129,309	117,767	—	3,493,562	—
Georgia	—	12,025	—	—	23,401	—	1,803,504	1,891,290
Illinois	1,375	54,759	—	44,640	177,399	—	19,602,557	—
Indiana	—	60,409	—	35,989	96,399	—	23,808,023	1,395,845
Iowa	—	20,592	—	100	106,663	—	4,847,233	236,670
Kansas	—	10,687	—	103,350	145,393	—	4,048,452	50,750
Kentucky	—	24,701	—	17,350	95,700	—	2,669,080	74,500
Maine	—	125	—	—	—	—	686,372	—
Maryland	—	5,145	61	28,750	18,946	—	1,974,867	—
Massachusetts	—	1,071	—	204,335	15,189	—	861,792	—
Michigan	—	192,403	—	34,000	61,378	—	9,629,190	25,573,900
Minnesota	—	4,086	3	670	32,580	—	1,946,609	—
Missouri	7	23,196	10	126,888	135,510	—	14,580,955	18,000
Montana	—	1,679	—	—	—	—	135,302	—
New Jersey	—	1,961	—	182,744	17,518	—	559,623	1,899,800
New York	250	50,888	720	16,517	519,224	—	30,020,085	3,265,550
Ohio	85	136,766	10	185,694	464,856	12,300	37,783,277	110,000
Oklahoma	—	8,600	—	37,155	39,400	—	5,842,455	—
Oregon	—	50	—	21,546	3,000	—	455,820	—
Pennsylvania	40,849	81,297	837	61,782	803,560	6,182	63,731,644	314,898
Tennessee	—	7,028	—	2,027	26,870	—	6,224,843	—
Texas	300	10,723	—	1,084,631	162,296	99,200	6,321,291	—
Utah	—	1,753	8	—	2,325	—	386,216	—
Vermont	—	602	—	—	—	—	84,917	13,405
Virginia	—	18,031	2,924	17,453	37,893	—	8,301,093	897,350
Washington	—	1,004	—	10,040	20,287	—	2,226,814	—
West Virginia	—	13,893	—	7,602	30,285	—	16,002,272	—
Wisconsin	—	8,177	—	101,553	193,541	—	9,154,400	—
Wyoming	—	2,165	—	5,500	31,218	—	13,429	—
<i>Groups of States</i>								
Louisiana and North Carolina	—	5,003	—	333,112	—	5,640	—	100,000
Nebraska, Nevada, and South Dakota	—	141	—	—	—	39,515	1,470,269	—
<b>GRANITE</b>								
<i>Individual States</i>								
California	—	218	—	912,006	33,353	—	2,097,197	—
Colorado	—	110	—	—	10,260	—	265,761	—
Connecticut	212	2,031	—	10	—	—	563,309	—
Georgia	2	10,856	—	100,866	23,805	—	2,729,791	—
Maine	2,080	3,800	—	9,051	4,936	—	2,112,872	70,000
Maryland	—	1,003	—	60	1,122	—	300,430	—
Massachusetts	263	14,857	5	73,761	61,066	—	5,653,426	—
Minnesota	6	4,556	—	11,355	302	—	8,037,946	—
Missouri	—	2	—	—	—	—	185,506	—
Montana	—	0	—	40	43,813	—	227,671	—
New Hampshire	28	3,598	—	4,062	6,328	—	1,357,890	—
New York	9	234	40	—	86,370	—	1,085,370	—
North Carolina	—	12,841	—	65,326	245,080	—	7,718,244	673,200
Oklahoma	—	—	—	6,000	12,420	14,000	38,000	—
Pennsylvania	3	1,795	—	12,000	35,176	—	993,344	—
Rhode Island	1,203	3,400	—	963	—	—	1,432,424	—
South Carolina	1,500	3,714	150	12,182	60,160	—	8,635,863	—
South Dakota	—	42	—	—	150	156	269,020	—
Texas	1	493	50	54,000	6,815	—	83,850	—
Vermont	16	11,209	—	113,778	18,637	—	7,304,763	—
Virginia	—	2,161	—	0,658	17,153	—	2,942,029	—
Wisconsin	120	1,405	—	—	50	—	1,828,722	—
<i>Groups of States</i>								
Idaho and Utah	—	68	—	—	—	300	42,603	—
Del., D. C., Mich., and N. J.	8	1,015	—	—	—	11,835	788,912	—
Oreg. and Wash.	—	—	—	60,100	—	—	82,220	200,000

<sup>1</sup> Manufactured.



TABLE 24.—CONSUMPTION OF FUEL AND ELECTRIC ENERGY, BY INDUSTRIES AND STATES: 1929—Continued

INDUSTRY AND STATE	FUEL AND ELECTRIC ENERGY CONSUMED						
	Fuel					Electric energy	
	Coal		Coke, tons (2,000 pounds)	Fuel oils, gallons	Gasoline and kerosene, gallons	Natural gas, M cubic feet	Purchased, kilowatt-hours
Anthracite, tons (2,240 pounds)	Bituminous, tons (2,000 pounds)						
<b>BASALT</b>							
<i>Individual States</i>							
California.....				105,030	64,314		3,404,820
Connecticut.....		13,396		47,074	55,337		4,769,077
Idaho.....				10,662	10,776		101,692
Maryland.....		2,465		1,090	2,000		1,328,006
Massachusetts.....		2,825		30,682	85,580		3,401,466
New Jersey.....	1,096	13,043		3,500	160,047		6,688,292
Oregon.....				72,302	4,020		489,690
Pennsylvania.....		18,528	702	155,445	89,815		3,521,848
Washington.....		1,260		76,412	31,846		
<i>Groups of States</i>							
Ark. and Tex.....		1,266					440,900
Me., N. Y., and Va.....				4,010	46,933		3,918,900
Mich. and Minn.....					3,461		2,632,398
<b>SLATE</b>							
<i>Individual States</i>							
New York.....	114	755			3,000		2,139,321
Pennsylvania.....	2,214	23,537		7,000	14,369		7,793,547
Vermont.....	126	2,587			761		5,648,987
Virginia.....		4,079		84,204			595,652
<i>Groups of States</i>							
Calif., Me., and N. J.....		70					891,387
Ga. and Md.....		3,238			3,600		1,723,144
<b>MARBLE</b>							
<i>Individual States</i>							
Alabama.....		1,030		1,970			4,583,802
Arkansas.....							186,065
Georgia.....		8,742		8,000			1,738,022
Massachusetts.....				10,872	10,820		550,491
Missouri.....		7,543		2,120			1,210,621
New York.....		2,126		950			1,350,718
Tennessee.....		29,724		2,457	1,084		5,315,155
Vermont.....	101	400	40	1,500	600		5,827,302
<i>Groups of States</i>							
Colo., Mont., and Utah.....	90	200			500		
Calif. and Wash.....					4,458		270,900
Conn., Md., Mich., Minn., and N. J.....	3		103	115	22,956		693,668
<b>SANDSTONE</b>							
<i>Individual States</i>							
California.....				361,400	10,550		2,623,271
Colorado.....							11,143
New York.....	110	4,537		21,700	29,704		748,145
Ohio.....		13,763		0,734	1,818		1,303,164
Pennsylvania.....	456	6,683		6,200	37,093		2,890,365
South Dakota.....		5			625		300,649
Virginia.....		400			25,083		2,148,023
Wisconsin.....		103		30	400		107,256
<i>Groups of States</i>							
Ariz., N. Mex., and Wyo.....		2,793			1,200		215,000
Ark., Kans., and Minn.....	500	200			2,000		841,657
Conn., Ky., Mass., N. J., and W. Va.....	9	1,157			29,731	3,430	192,056
Oreg. and Wash.....		416		572,910	9,923		317,307
<b>MISCELLANEOUS</b>							
<i>Individual States</i>							
California.....	2	1,936		1,650,831	133,807	8,100	9,556,255
Illinois.....		432		20,000	1,510		
Indiana.....		437			25,305		357,080
Kansas.....					996		
Kentucky.....		665			4,000		
Maryland.....		47					100,000
Massachusetts.....	5	678		8,906	50,153		753,548
Missouri.....		847		27,550	27,032		833,208
New York.....		310		8,100			1,037,890
Ohio.....		400			2,000		92,198
Pennsylvania.....		1,167		740	46,102		831,089
Washington.....				31,200	16,000		60,140
<i>Groups of States</i>							
Ariz., Nev., N. Mex., and Oreg.....		1,236		33,400	15,836		190,913
Ark., Okla., and Tex.....		1,660		6,000	22,640	59,100	1,178,331
Mich. and Wis.....	10			4,000	19,750		
N. H., N. J., and R. I.....		1,000			3,200		45,545
Tenn., Va., and W. Va.....		750			16,640		351,695

TABLE 25.—DETAILED STATISTICS FOR THE STONE-QUARRYING INDUSTRIES, BY STATES: 1929

INDUSTRY AND STATE	Number of enterprises <sup>1</sup>	Number of quarries <sup>2</sup>	PERSONS ENGAGED IN INDUSTRY					PRINCIPAL EXPENSES OF OPERATION AND DEVELOPMENT							
			Total (all classes)	Proprietors and firm members	Principal salaried officers of corporations <sup>3</sup>	Other salaried officers and employes <sup>4</sup>	Wage earners (average for the year)	Total	Salaries and wages			Cost of supplies, fuel, and purchased electric energy			
									Principal officers of corporations <sup>3</sup>	Other salaried officers and employes <sup>4</sup>	Wage earners	Contract work	Supplies	Fuel	Purchased electric energy
<b>United States—Stone-quarrying industries, total.....</b>	<b>2,249</b>	<b>2,458</b>	<b>62,966</b>	<b>1,165</b>	<b>999</b>	<b>3,907</b>	<b>56,835</b>	<b>\$128,847,273</b>	<b>\$4,631,214</b>	<b>\$8,439,350</b>	<b>\$69,533,903</b>	<b>\$634,404</b>	<b>\$30,384,379</b>	<b>\$5,358,453</b>	<b>\$7,865,565</b>
<b>Limestone.....</b>	<b>1,107</b>	<b>1,250</b>	<b>35,582</b>	<b>497</b>	<b>471</b>	<b>2,314</b>	<b>32,300</b>	<b>75,933,430</b>	<b>2,334,381</b>	<b>4,854,432</b>	<b>39,188,364</b>	<b>418,700</b>	<b>20,735,789</b>	<b>3,606,670</b>	<b>4,795,034</b>
<b>Granite.....</b>	<b>406</b>	<b>434</b>	<b>11,191</b>	<b>279</b>	<b>220</b>	<b>646</b>	<b>10,037</b>	<b>20,647,446</b>	<b>1,106,281</b>	<b>1,481,864</b>	<b>12,639,524</b>	<b>39,273</b>	<b>3,618,511</b>	<b>652,642</b>	<b>1,109,351</b>
<b>Basalt.....</b>	<b>137</b>	<b>144</b>	<b>3,439</b>	<b>51</b>	<b>86</b>	<b>249</b>	<b>3,053</b>	<b>8,080,050</b>	<b>385,429</b>	<b>523,094</b>	<b>4,498,093</b>	<b>31,951</b>	<b>2,201,847</b>	<b>388,232</b>	<b>651,404</b>
<b>Slate.....</b>	<b>120</b>	<b>130</b>	<b>4,450</b>	<b>80</b>	<b>63</b>	<b>183</b>	<b>4,098</b>	<b>6,917,871</b>	<b>299,685</b>	<b>410,919</b>	<b>4,884,038</b>	<b>26,574</b>	<b>662,441</b>	<b>192,247</b>	<b>441,967</b>
<b>Marble.....</b>	<b>70</b>	<b>88</b>	<b>3,594</b>	<b>7</b>	<b>44</b>	<b>103</b>	<b>3,350</b>	<b>4,988,260</b>	<b>180,859</b>	<b>303,384</b>	<b>3,291,541</b>	<b>18,225</b>	<b>553,619</b>	<b>156,839</b>	<b>387,703</b>
<b>Sandstone.....</b>	<b>145</b>	<b>172</b>	<b>2,460</b>	<b>84</b>	<b>51</b>	<b>176</b>	<b>2,156</b>	<b>4,581,214</b>	<b>196,019</b>	<b>331,934</b>	<b>2,626,437</b>	<b>47,565</b>	<b>983,204</b>	<b>173,252</b>	<b>222,803</b>
<b>Miscellaneous.....</b>	<b>204</b>	<b>234</b>	<b>2,244</b>	<b>161</b>	<b>35</b>	<b>207</b>	<b>1,841</b>	<b>5,098,402</b>	<b>122,560</b>	<b>443,123</b>	<b>2,405,906</b>	<b>52,056</b>	<b>1,628,908</b>	<b>188,576</b>	<b>257,213</b>
<b>LIMESTONE</b>															
<i>Individual States</i>															
Alabama.....	21	23	1,024	2	2	63	957	1,553,275	8,000	113,116	841,985	1,122	407,250	71,463	110,859
Arizona.....	4	4	72	4	0	0	82	95,267	7,400	64,800	0	0	10,110	3,657	300
Arkansas.....	6	6	131	0	0	11	120	118,176	16,020	77,071	0	0	13,533	7,310	4,237
California.....	23	24	703	2	5	21	675	1,529,070	10,025	53,161	921,309	10,660	400,508	68,125	56,282
Colorado.....	14	14	257	11	0	13	223	385,639	20,134	288,519	0	0	62,196	9,193	5,597
Connecticut.....	4	4	67	1	2	3	61	105,539	3,700	6,280	73,595	0	0	1,857	10,572
Florida.....	37	37	598	14	21	68	405	1,100,614	104,590	146,670	419,708	8,800	272,646	65,180	89,020
Georgia.....	10	11	346	0	8	23	315	471,017	32,900	42,194	239,321	0	103,436	28,408	10,758
Illinois.....	53	55	1,891	14	49	179	1,049	4,393,171	417,326	362,225	2,106,707	5,278	928,207	236,896	342,533
Indiana.....	91	116	3,324	53	43	347	2,881	6,668,420	285,084	751,275	4,032,335	31,795	894,104	192,664	471,263
Iowa.....	25	26	702	10	12	48	632	1,403,700	35,425	92,645	744,618	2,933	359,203	88,811	80,131
Kansas.....	31	33	756	18	3	35	700	1,393,733	18,600	78,421	747,099	49,947	371,028	59,741	68,897
Kentucky.....	57	58	1,303	61	15	80	1,147	1,690,436	51,100	120,800	883,724	18,687	304,649	78,043	73,033
Maine.....	4	4	123	3	0	6	114	291,578	5,444	13,840	180,476	8,160	61,019	722	21,911
Maryland.....	20	23	458	9	16	25	409	759,583	48,133	34,517	411,937	170	203,133	25,024	41,669
Massachusetts.....	7	7	121	0	3	7	111	244,430	11,500	10,464	157,204	170	29,422	16,175	10,435
Michigan.....	14	16	1,706	2	14	124	1,566	7,970,180	114,278	303,783	2,308,116	4	4,397,626	739,983	110,500
Minnesota.....	10	10	203	5	7	23	233	689,134	42,542	43,557	319,087	0	81,363	27,832	45,253
Missouri.....	73	79	2,520	18	31	121	2,350	4,070,344	111,760	218,879	2,433,447	8,734	936,092	110,992	251,340
Montana.....	7	7	80	0	0	4	70	202,972	6,555	123,740	0	0	60,757	8,931	3,989
New Jersey.....	5	5	250	0	3	19	234	838,643	20,025	70,152	422,687	29,181	245,514	31,055	22,429
New York.....	69	73	2,178	11	40	120	1,998	6,472,926	251,071	285,945	3,111,408	7,116	2,025,836	332,562	458,328
Ohio.....	110	114	2,943	48	34	200	2,660	6,913,869	165,359	404,899	3,403,676	42,618	1,708,371	464,950	660,967
Oklahoma.....	18	21	550	3	6	34	507	1,129,475	31,683	69,145	521,934	3,000	340,486	47,553	115,874
Oregon.....	4	4	97	0	1	6	65	100,527	3,000	2,400	113,749	9,561	20,018	1,450	7,310
Pennsylvania.....	201	213	6,540	120	60	312	6,048	13,978,394	227,457	755,868	7,783,473	167,009	3,631,995	421,845	990,147
Tennessee.....	29	32	629	10	6	30	578	1,000,549	20,000	60,278	582,318	0	258,417	26,877	72,944
Texas.....	36	41	1,274	13	15	76	1,179	2,206,127	60,488	142,777	1,128,920	5,362	620,611	143,077	104,892
Utah.....	8	8	118	1	3	11	103	222,181	11,150	15,654	119,994	0	53,469	11,870	10,544
Vermont.....	4	4	43	0	0	4	39	66,800	0	4,804	46,249	0	9,877	3,707	2,163
Virginia.....	63	64	1,398	28	22	78	1,270	1,993,969	74,906	131,926	1,102,969	4,344	470,698	71,748	137,878
Washington.....	14	15	223	1	3	17	202	441,391	6,250	20,160	244,374	0	131,568	9,594	23,345
West Virginia.....	19	19	1,367	2	3	73	1,319	2,394,140	4,586	172,085	1,465,543	0	517,860	52,296	151,038
Wisconsin.....	53	58	950	19	36	78	817	2,159,216	124,200	142,462	1,168,088	3,978	486,217	83,170	148,101
Wyoming.....	7	7	203	7	11	11	185	351,705	0	10,404	220,779	760	92,790	17,591	825
<i>Groups of States</i>															
La., 1 enterprise; N. C., 3; R. I., 1.....	5	5	134	3	2	8	121	234,922	3,600	14,200	136,922	1,887	34,287	44,026	0
Nebr., 5 enterprises; S. Dak., 3.....	8	10	162	1	4	19	188	338,904	33,600	32,677	181,943	0	67,106	3,096	20,182
Nev., 2 enterprises; N. Mex., 1.....	3	3	66	0	0	1	65	100,334	0	2,000	76,500	0	13,475	2,000	6,369
<b>GRANITE</b>															
<i>Individual States</i>															
California.....	24	27	281	20	0	20	235	828,232	30,500	59,364	373,874	49	284,757	34,241	39,448
Colorado.....	4	4	90	0	3	10	77	203,320	7,600	20,038	122,294	7,521	30,193	3,710	11,064
Connecticut.....	12	12	247	13	2	15	217	475,677	9,600	38,544	351,759	0	41,311	14,061	20,402
Georgia.....	28	30	1,371	22	20	64	1,266	1,581,472	85,309	125,036	1,033,884	0	225,776	47,164	61,253
Maine.....	30	30	947	18	12	36	881	1,450,793	51,143	77,117	1,188,248	0	52,689	45,452	45,114
Maryland.....	6	8	127	0	7	7	113	153,705	10,660	13,904	103,597	0	7,376	6,604	11,504
Massachusetts.....	38	39	1,734	26	37	117	1,554	3,873,828	227,345	299,728	2,624,198	3,111	469,607	111,844	137,095
Minnesota.....	25	37	1,019	12	24	60	923	2,190,843	101,622	157,808	1,230,398	2,600	522,639	31,073	153,633
Missouri.....	4	5	41	1	4	5	31	62,490	13,200	5,556	36,606	0	3,106	10	3,912
Montana.....	6	6	44	4	2	6	32	81,152	6,860	14,349	47,455	0	7,054	2,291	3,143
New Hampshire.....	18	20	360	15	11	19	315	629,187	21,725	39,859	455,534	630	61,014	25,156	28,410
New York.....	13	13	121	0	1	9	105	328,278	1,200	20,157	183,525	0	91,415	17,371	14,610
North Carolina.....	67	67	1,554	65	23	70	1,396	2,443,522	108,112	128,787	1,208,397	0	682,942	101,288	123,906
Oklahoma.....	7	7	63	11	0	2	59	95,296	0	2,020	65,777	0	20,654	4,920	1,926

<sup>1</sup> See GENERAL EXPLANATIONS—The Enterprise.

<sup>2</sup> See GENERAL EXPLANATIONS—Milling and Manufacturing.

<sup>3</sup> Not including data for salaried officers and employees of "Central Administrative" offices. (See Table 18.)

<sup>4</sup> The return filed by one of the enterprises in Michigan reported an abnormally large amount for this item, which probably represents the inclusion of a considerable amount for capital and other expenditures not called for by this inquiry.

MINES AND QUARRIES

TABLE 25.—DETAILED STATISTICS FOR THE STONE-QUARRYING INDUSTRIES, BY STATES: 1929—Continued

INDUSTRY AND STATE	Ex-penditures for development (included in "Principal expenses," thousands)	Value of products	Machinery and other equipment purchased during the year (total cost)	PRIME MOVERS AND ELECTRIC MOTORS DRIVEN BY PURCHASED ENERGY												Electric motors driven by energy generated by enterprises reporting		Electric generators	
				Aggregate horsepower	Prime movers								Electric motors driven by purchased energy						
					Total horsepower of prime movers	Steam engines		Steam turbines		Internal-combustion engines		Water wheels and water turbines		Number	Horsepower				
						Number	Horsepower	Number	Horsepower	Number	Horsepower	Number	Horsepower						
United States—Stone-quarrying industries, total.....	\$3,618	\$195,095,124	\$8,228,025	829,041	4,288,570	2,456	169,639	74	54,547	1,242	57,423	19	1,961	14,902	545,471	685	23,652	78	18,698
Limestone.....	1,459	117,257,784	5,068,750	535,400	1,938,230	1,310	110,561	32	51,387	723	35,238	9	1,055	8,789	337,230	429	20,872	52	16,832
Granite.....	1,003	30,381,873	655,900	108,217	32,144	500	23,332	10	1,245	165	6,902	6	605	2,025	70,073	221	1,776	10	1,412
Basalt.....	231	15,543,687	990,467	63,881	18,775	143	11,407	1	1,407	152	7,308	2	60	898	45,106	8	350	3	92
Slate.....	134	10,486,300	206,933	33,817	7,941	158	7,289	1	265	6	331	1	56	1,155	25,876	3	75	1	100
Marble.....	298	7,538,905	192,776	30,108	6,013	71	3,305	22	1,425	21	1,038	1	186	898	24,185	6	172	2	45
Sandstone.....	270	6,311,977	130,230	28,935	11,370	128	8,909	3	225	89	2,236	---	---	517	17,565	12	294	3	142
Miscellaneous.....	223	8,475,008	382,895	28,527	4,091	130	4,770	---	---	86	4,315	---	---	629	19,436	6	113	1	76
<b>LIMESTONE</b>																			
<i>Individual States</i>																			
Alabama.....	5	1,836,790	16,431	11,436	4,635	31	3,820	---	---	11	815	---	---	155	6,801	2	170	1	235
Arizona.....	4	133,640	4,282	697	685	12	445	---	---	9	240	---	---	2	12	---	---	---	---
Arkansas.....	3	184,574	53,334	1,385	550	3	390	---	---	4	160	---	---	27	835	---	---	---	---
California.....	44	1,976,716	15,795	10,329	3,215	6	680	---	---	27	2,535	---	---	154	7,114	10	240	2	180
Colorado.....	3	489,236	70,365	1,526	591	5	---	---	---	10	373	---	---	34	936	---	---	---	---
Connecticut.....	---	155,261	350	710	150	---	---	---	---	3	150	---	---	25	560	---	---	---	---
Florida.....	169	1,891,799	53,366	11,074	6,008	56	4,234	2	90	44	2,202	1	80	99	4,468	3	47	3	35
Georgia.....	10	647,113	19,673	10,464	8,848	7	690	5	7,768	3	150	1	250	43	1,636	24	1,210	5	972
Illinois.....	16	7,830,131	288,581	60,428	24,726	101	10,571	3	12,150	34	2,005	---	---	625	25,702	---	---	---	---
Indiana.....	89	12,247,196	179,780	47,470	8,927	105	6,844	2	160	29	1,933	---	---	1,303	38,543	30	912	6	995
Iowa.....	31	2,165,957	56,362	10,699	5,913	34	5,337	---	---	23	576	---	---	154	4,786	5	222	3	150
Kansas.....	55	2,108,325	209,143	9,282	4,274	49	3,194	---	---	28	1,030	---	---	108	5,008	2	30	1	20
Kentucky.....	10	2,330,085	118,244	9,127	5,685	65	4,354	1	250	29	1,091	---	---	91	3,442	7	200	1	175
Maine.....	27	423,571	9,330	2,130	---	---	---	---	---	---	---	---	---	61	2,180	---	---	---	---
Maryland.....	10	1,033,738	17,500	5,800	2,346	19	1,825	---	---	10	481	1	40	114	3,454	---	---	---	---
Massachusetts.....	---	411,217	---	1,504	280	---	---	1	150	4	130	---	---	62	1,224	---	---	---	---
Michigan.....	160	11,059,922	1,002,187	34,932	22,420	57	6,659	5	15,300	12	461	---	---	239	12,562	233	14,720	6	11,625
Minnesota.....	10	815,027	4,112	2,959	586	15	470	1	120	10	299	---	---	98	2,073	---	---	---	---
Missouri.....	119	6,175,012	178,530	17,873	4,221	38	2,187	---	---	40	2,034	---	---	383	13,652	3	10	1	7
Montana.....	1	242,068	5,315	1,610	330	4	300	---	---	---	---	1	30	24	1,280	---	---	---	---
New Jersey.....	---	1,013,315	15,200	2,350	1,190	2	120	---	---	4	1,070	---	---	17	1,160	6	350	1	325
New York.....	145	11,389,087	935,274	42,632	10,939	124	6,651	3	54	37	1,294	1	20	743	31,043	53	1,691	6	1,132
Ohio.....	14	12,091,055	529,519	57,726	24,593	165	16,831	2	4,330	61	3,402	---	---	907	33,163	9	225	4	305
Oklahoma.....	15	1,775,772	66,772	7,027	1,087	14	725	---	---	14	302	---	---	109	5,940	---	---	---	---
Oregon.....	5	324,050	---	610	40	---	25	---	---	1	15	---	---	19	570	---	---	---	---
Pennsylvania.....	343	19,124,040	1,052,605	103,188	31,057	172	14,659	3	10,100	125	6,163	3	135	1,817	72,131	6	306	6	318
Tennessee.....	20	1,736,472	59,949	6,832	1,475	22	1,155	---	---	11	320	---	---	110	5,377	---	---	---	---
Texas.....	58	3,171,522	250,160	13,650	4,859	55	2,355	4	985	22	1,095	---	---	207	8,794	---	---	---	---
Utah.....	---	269,444	100	1,230	615	---	540	---	---	3	76	---	---	15	615	---	---	---	---
Vermont.....	---	60,606	---	519	380	3	350	---	---	---	---	---	---	7	199	3	45	2	97
Virginia.....	34	3,011,695	211,554	17,391	7,720	66	5,856	---	---	20	1,364	1	500	227	9,671	27	394	2	50
Washington.....	12	802,701	81,062	3,094	604	5	234	---	---	12	490	---	---	45	2,400	---	---	---	---
West Virginia.....	10	3,507,603	102,272	15,550	3,386	41	3,261	---	---	6	125	---	---	285	12,164	---	---	---	---
Wisconsin.....	18	3,406,692	239,046	18,214	2,928	19	1,020	---	---	44	1,909	---	---	40	15,286	---	---	---	---
Wyoming.....	18	460,397	24,248	407	380	4	215	---	---	---	169	---	---	2	27	---	---	---	---
<i>Groups of States</i>																			
La., 1 enterprise; N. C., 3; R. I., 1.....	1	310,813	14,414	1,380	1,230	0	690	---	---	9	590	---	---	4	100	6	100	1	150
Nebr., 5 enterprises; S. Dak., 3.....	---	400,917	28,845	1,876	278	3	96	---	---	6	182	---	---	47	1,598	---	---	---	---
Nev., 2 enterprises; N. Mex., 1.....	---	108,545	---	265	30	1	30	---	---	---	---	---	---	14	235	---	---	---	---
<b>GRANITE</b>																			
<i>Individual States</i>																			
California.....	30	1,409,534	27,536	5,589	1,240	11	907	---	---	8	333	---	---	105	4,349	---	---	---	---
Colorado.....	---	270,073	28,232	606	150	2	25	---	---	7	125	---	---	24	546	---	---	---	---
Connecticut.....	8	578,899	1,570	1,374	1,060	36	1,060	---	---	---	---	---	---	22	314	9	161	1	60
Georgia.....	61	2,201,313	41,711	7,497	2,818	18	1,507	---	---	17	1,811	---	---	85	4,679	---	---	---	---
Maine.....	23	2,155,640	16,106	6,345	2,519	26	1,828	1	275	11	416	---	---	62	3,326	2	266	2	200
Maryland.....	---	261,259	388	908	78	2	30	---	---	4	48	---	---	17	330	---	---	---	---
Massachusetts.....	120	5,394,350	151,595	14,553	6,013	129	5,133	1	50	23	780	---	---	190	3,540	---	---	---	---
Minnesota.....	86	3,617,633	15,097	6,015	1,032	18	422	2	130	4	145	3	335	431	6,583	175	150	1	200
Missouri.....	---	81,292	---	876	10	1	16	---	---	---	---	---	---	12	860	---	---	---	---
Montana.....	---	124,217	7,838	318	64	---	---	---	---	3	64	---	---	12	254	---	---	---	---
New Hampshire.....	8	706,259	7,701	3,159	1,423	28	1,394	---	---	2	29	---	---	46	1,736	---	---	---	---
New York.....	23	504,519	54,351	2,826	1,260	10	565	---	---	15	696	---	---	34	1,568	---	---	---	---
North Carolina.....	83	3,213,624	56,454	11,557	4,435	94	3,315	---	---	18	1,060	2	60	142	7,122	23	910	7	623
Oklahoma.....	---	174,769	760	416	333	8	188	---	---	0	150	---	---	6	73	---	---	---	---

<sup>1</sup> Includes 14,610 horsepower reported for inactive prime movers in industries as follows: Limestone, 12,273; granite, 2,081; basalt, 20; slate, 125; sandstone, 45; stone miscellaneous, 76.

<sup>2</sup> Includes 4,300 kilowatts reported for inactive generators in industries as follows: Limestone, 4,786; granite, 20.

TABLE 25.—DETAILED STATISTICS FOR THE STONE-QUARRYING INDUSTRIES, BY STATES: 1929—Continued

INDUSTRY AND STATE	Number of enterprises	Number of quarries	PERSONS ENGAGED IN INDUSTRY					PRINCIPAL EXPENSES OF OPERATION AND DEVELOPMENT							
			Total (all classes)	Proprietors and firm members	Principal salaried officers of corporations	Other salaried officers and employees	Wage earners (average for the year)	Total	Salaries and wages			Contract work	Cost of supplies, fuel, and purchased electric energy		
									Principal officers of corporations	Other salaried officers and employees	Wage earners		Supplies	Fuel	Purchased electric energy
<b>GRANITE—continued</b>															
<i>Individual States—Con.</i>															
Pennsylvania.....	24	25	318	21	8	20	203	\$824,007	\$31,715	\$46,628	\$324,930	\$10,182	\$171,322	\$11,095	\$27,545
Rhode Island.....	9	9	258	8	8	19	223	605,577	32,230	31,304	341,215	1,000	131,744	29,410	35,865
South Carolina.....	17	17	738	7	18	44	669	1,097,399	78,727	103,053	509,375	2,350	225,971	41,050	136,837
South Dakota.....	7	7	90	3	4	6	77	181,881	13,350	7,150	122,004	—	28,205	651	10,521
Texas.....	5	6	69	6	3	3	57	32,067	6,300	3,000	60,966	—	15,134	3,695	2,972
Vermont.....	24	25	1,048	6	23	67	952	2,340,004	225,982	199,507	1,393,739	—	279,604	94,105	146,007
Virginia.....	5	5	215	—	4	11	200	427,000	11,490	24,283	210,650	4,836	129,654	9,667	36,400
Wisconsin.....	18	18	308	3	6	17	238	560,996	13,111	32,932	391,812	—	87,556	7,000	36,985
<i>Groups of States</i>															
Ariz., 1 enterprise; Idaho, 2; Utah, 2; Wyo., 1.....	6	6	21	12	—	2	7	17,000	—	3,400	7,525	—	4,557	304	1,274
Del., 2 enterprises; D. C., 1; Mich., 1; N. J., 1.....	5	6	91	—	2	8	81	201,270	3,640	17,870	111,651	7,109	35,285	6,027	19,088
Oreg., 2 enterprises; Wash., 3.....	5	5	36	—	2	3	31	75,360	4,820	6,300	50,061	—	8,036	2,224	3,910
<b>BASALT</b>															
<i>Individual States</i>															
California.....	16	17	256	4	10	21	221	713,445	45,922	30,167	310,993	2,099	248,820	13,474	43,970
Connecticut.....	19	19	483	2	16	45	420	1,211,114	87,989	99,085	722,983	450	118,333	86,742	95,532
Idaho.....	5	5	28	4	—	2	22	60,430	—	2,850	33,770	2,600	10,208	3,800	1,246
Maryland.....	7	7	251	7	1	11	232	428,023	2,268	17,843	245,106	—	128,017	9,444	24,745
Massachusetts.....	14	16	394	4	10	14	366	1,207,313	44,540	31,002	1,104,783	13,862	372,904	34,269	91,878
New Jersey.....	26	27	794	7	32	72	683	2,181,004	144,720	167,297	1,104,636	—	518,694	77,602	168,055
Oregon.....	10	10	103	3	2	15	33	212,905	3,600	20,547	106,359	6,532	55,243	12,100	8,477
Pennsylvania.....	20	22	628	14	10	38	560	1,374,368	33,950	77,185	716,609	6,358	364,289	107,364	68,013
Washington.....	8	8	111	6	2	9	94	206,668	12,400	16,340	115,226	—	38,887	23,184	631
<i>Groups of States</i>															
Ark., 2 enterprises; Tex., 1.....	3	3	103	—	—	8	95	163,671	—	16,656	83,826	—	31,562	6,271	14,956
Me., 1 enterprise; N. Y., 2; R. I., 1; Va., 1.....	5	6	190	—	2	4	184	678,424	3,440	9,382	321,652	—	243,390	9,355	91,166
Mich., 2 enterprises; Minn., 2.....	4	4	98	—	1	10	87	253,321	6,600	26,340	100,144	—	64,501	4,601	42,135
<b>SLATE</b>															
<i>Individual States</i>															
New York.....	15	15	177	12	2	8	155	351,342	1,500	26,590	227,370	—	42,360	6,489	47,027
Pennsylvania.....	33	33	2,074	3	46	74	1,951	3,227,164	155,452	166,462	2,352,559	7,862	236,237	120,471	188,121
Vermont.....	58	67	1,461	66	21	71	1,303	2,265,954	57,910	157,670	1,701,192	18,712	161,747	20,323	148,400
Virginia.....	6	7	519	—	11	16	489	629,763	32,100	27,060	360,029	—	124,431	26,559	9,614
<i>Groups of States</i>															
Calif., 2 enterprises; Me., 2; N. J., 1.....	5	5	73	5	—	3	65	178,151	—	7,100	104,539	—	50,280	472	15,760
Ga., 1 enterprise; Md., 2.....	3	3	149	—	3	11	135	265,467	2,723	26,037	138,343	—	47,380	17,033	33,045
<b>MARBLE</b>															
<i>Individual States</i>															
Alabama.....	3	3	415	—	8	49	358	678,986	69,375	106,601	333,544	—	107,402	4,149	57,825
Arkansas.....	3	3	18	1	—	3	14	22,804	—	3,370	12,362	—	3,350	—	3,732
Georgia.....	5	5	293	—	1	6	285	812,808	1,200	13,408	234,623	—	19,910	26,507	13,260
Massachusetts.....	4	4	78	1	1	8	68	140,879	5,000	20,443	83,462	—	15,986	2,541	13,447
Missouri.....	6	8	328	1	4	24	299	503,894	18,000	51,391	335,909	—	40,423	32,646	25,520
New York.....	9	9	120	2	7	15	105	252,731	9,925	38,037	141,194	18,225	9,430	11,692	24,378
Tennessee.....	13	14	1,434	—	7	50	1,377	1,520,606	48,500	75,914	1,093,632	—	147,858	60,968	84,794
Vermont.....	9	23	684	—	6	20	658	1,145,104	20,004	45,925	785,679	—	159,528	4,278	131,000
<i>Groups of States</i>															
Ariz., 1 enterprise; Colo., 2; Mont., 1; Utah, 1.....	5	5	46	—	—	3	42	70,910	—	5,655	60,418	—	12,168	1,660	—
Calif., 4 enterprises; Oreg., 1; Wash., 1.....	6	6	40	2	2	1	35	71,686	5,280	3,000	45,046	—	9,930	884	7,546
Conn., 2 enterprises; Md., 1; Mich., 1; Minn., 1; N. J., 1; N. C., 1.....	7	8	130	—	8	14	108	287,712	9,575	29,940	165,832	—	27,539	3,615	21,161

TABLE 25.—DETAILED STATISTICS FOR THE STONE-QUARRYING INDUSTRIES, BY STATES: 1929—Continued

INDUSTRY AND STATE	Expenditures for development (included in "Principal expenses," thousands)	Value of products	Machinery and other equipment purchased during the year (total cost)	PRIME MOVERS AND ELECTRIC MOTORS DRIVEN BY PURCHASED ENERGY												Electric motors driven by energy generated by enterprises reporting		Electric generators	
				Aggregate horsepower	Prime movers								Electric motors driven by purchased energy						
					Total horsepower of prime movers	Steam engines		Steam turbines		Internal-combustion engines		Water wheels and water turbines		Number	Horsepower				
						Number	Horsepower	Number	Horsepower	Number	Horsepower	Number	Horsepower						
<b>GRANITE—continued</b>																			
<i>Individual States—Con.</i>																			
Pennsylvania.....	\$14	\$731,484	\$44,535	2,850	1,031	23	741	1	40	11	250			52	1,819				
Rhode Island.....	35	633,053	3,951	3,007	1,042	14	625	9	450	3	67			68	2,625				
South Carolina.....		1,748,081	30,005	13,183	1,427	18	502			16	925			192	11,756	1	3		
South Dakota.....	5	234,303	6,981	747										38	747				
Texas.....		140,834	2,500	640	400	2	95	1	150	3	155			8	240				
Vermont.....	501	3,802,352	91,576	15,411	4,130	57	3,955	1	150	1	25			304	11,281				
Virginia.....		861,347	19,000	2,902	612	4	430			4	82			56	2,390				
Wisconsin.....	2	888,105	37,141	4,216	770	6	419			1	150	1	210	86	3,437	6	144		
<i>Groups of States</i>																			
Ariz., 1 enterprise; Idaho, 2; Utah, 2; Wyo., 1.....	1	24,207	1,700	172	37	2	15			1	22			6	135				
Del., 2 enterprises; D. C., 1; Mich., 1; N. J., 1.....		331,951	5,815	1,230	190	4	60			7	130			11	1,040	1	3		
Oreg., 2 enterprises; Wash., 3.....	3	104,075	3,376	470	150	1	150							16	320	6	145		
<b>BASALT</b>																			
<i>Individual States</i>																			
California.....	1	1,016,009	43,200	5,483	920	9	205			11	655			130	4,503				
Connecticut.....	6	2,924,085	168,141	7,470	1,325	10	1,130			3	195			73	6,145	5	50		
Idaho.....	4	111,771	7,000	880	505	7	505			7	505			3	75	1	75		
Maryland.....	14	690,084	158,335	3,047	422	7	307			5	115			52	2,625				
Massachusetts.....	17	2,191,366	328,694	8,550	2,665	17	865			23	1,800			120	5,885	3	300		
New Jersey.....	52	3,580,184	75,359	14,510	4,439	31	3,432			30	1,007			186	10,071				
Oregon.....	29	809,766	4,158	1,098	680	10	450			3	230			27	1,018				
Pennsylvania.....	103	2,326,339	104,339	6,040	6,040	46	3,983			56	2,001	2	60	141	6,139				
Washington.....	3	311,867	9,249	1,520	1,445	7	645			14	800			1	75	1	2		
<i>Groups of States</i>																			
Ark., 2 enterprises; Tex., 1.....		263,207	4,611	1,120	305	4	305							22	815				
Me., 1 enterprise; N. Y., 2; R. I., 1; Va., 1.....	1	1,054,900	72,580	4,085										79	4,085				
Mich., 2 enterprises; Minn., 2.....	1	345,160	14,801	3,630	20	2	20							64	3,610				
<b>SLATE</b>																			
<i>Individual States</i>																			
New York.....	2	728,642	2,590	3,120	135	8	113			1	22			122	2,985				
Pennsylvania.....	65	4,330,001	14,353	15,394	6,209	119	5,890	1	265	3	54			430	9,125				
Vermont.....	49	3,653,796	138,472	10,141	290	10	174			1	30	1	56	487	9,881				
Virginia.....	5	850,882	24,222	1,477	947	16	722			1	225			14	530	3	75		
<i>Groups of States</i>																			
Calif., 2 enterprises; Me., 2; N. J., 1.....	13	410,559	11,286	1,202	40	1	40							31	1,162				
Ga., 1 enterprise; Md., 2.....		612,510	16,000	2,543	350	4	350							71	2,193				
<b>MARBLE</b>																			
<i>Individual States</i>																			
Alabama.....		653,040	17,642	3,064	40	1	40							138	3,024				
Arkansas.....		60,431		288	60	1	60							9	223				
Georgia.....		749,737	10,000	2,693	46	1	20			1	20			17	2,653				
Massachusetts.....		202,001	2,194	1,074	521					6	336	1	185	33	553				
Missouri.....	36	752,078	1,397	1,026	635	17	635							39	1,201				
New York.....	5	393,584	7,825	1,707	390	11	390							59	1,317				
Tennessee.....	32	2,287,038	81,004	6,780	3,507	33	1,985	22	1,425	3	97			69	3,223				
Vermont.....	179	1,829,315	37,500	10,077										446	10,077				
<i>Groups of States</i>																			
Ariz., 1 enterprise; Colo., 2; Mont., 1; Utah, 1.....		114,127	588	384	244	4	160			2	84			14	140	6	172		
Calif., 4 enterprises; Oreg., 1; Wash., 1.....	4	123,200		628	158	2	50			4	108			14	470				
Conn., 2 enterprises; Md., 1; Mich., 1; Minn., 1; N. J., 1; N. C., 1.....	42	371,562	34,926	1,627	418	1	25			5	393			60	1,209	1	5		

TABLE 25.—DETAILED STATISTICS FOR THE STONE-QUARRYING INDUSTRIES, BY STATES: 1929—Continued

INDUSTRY AND STATE	Number of enterprises	Number of quarries	PERSONS ENGAGED IN INDUSTRY					PRINCIPAL EXPENSES OF OPERATION AND DEVELOPMENT							
			Total (all classes)	Proprietors and firm members	Principal salaried officers of corporations	Other salaried officers and employees	Wage earners (average for the year)	Total	Salaries and wages			Contract work	Cost of supplies, fuel, and purchased electric energy		
									Principal officers of corporations	Other salaried officers and employees	Wage earners		Supplies	Fuel	Purchased electric energy
<b>BANDSTONE</b>															
<i>Individual States</i>															
California.....	14	15	108	10	5	19	164	\$478,110	\$34,200	\$40,387	\$250,502		\$104,194	\$10,957	\$31,819
Colorado.....	3	3	13	1			12	19,168			11,983		6,952		233
New York.....	30	41	333	30	8	19	276	501,403	31,219	24,812	348,660		60,262	19,354	17,096
Ohio.....	14	17	480		5	37	447	1,001,577	35,100	83,180	620,032	\$5,575	288,574	37,424	31,992
Pennsylvania.....	41	51	680	20	15	44	505	1,178,000	36,870	80,143	742,273		230,339	32,716	55,650
South Dakota.....	6	6	69	1	4	0	58	145,345	12,600	12,500	67,678		40,662	377	11,528
Virginia.....	3	3	55		2	7	46	113,596	8,000	10,030	30,932	5,565	23,420	6,827	29,213
Wisconsin.....	5	5	51	5	1	5	40	55,740	1,200	3,006	40,652		4,545	3,025	2,721
<i>Groups of States</i>															
Ala., 1 enterprise; Ky., 2; Tenn., 1.....	4	5	46		3	8	35	44,725	7,130	6,350	20,021		8,878	1,090	1,250
Ariz., 1 enterprise; Idaho, 1; N. Mex., 1; Wyo., 2.....	5	5	102	3	1	0	92	175,761	4,800	12,700	83,208		43,287	21,243	5,523
Ark., 3 enterprises; Kans., 2; Minn., 3; Okla., 1.....	9	9	145	7	2	9	127	224,678	6,900	15,654	116,022		58,286	5,132	22,684
Conn., 1 enterprise; Mass., 2; N. J., 2; W. Va., 2.....	7	7	64	1		7	56	108,604		11,509	75,108		9,095	6,741	6,151
Oreg., 2 enterprises; Wash., 2.....	4	5	221		5	8	208	534,489	18,000	30,463	313,306	36,425	100,701	28,366	7,228
<b>MISCELLANEOUS</b>															
<i>Individual States</i>															
California.....	40	64	641	25	13	112	491	2,155,204	57,397	280,043	802,430	7,448	780,105	64,466	133,315
Illinois.....	4	5	44	1	2	4	37	109,018	4,650	8,700	41,151		52,113	2,394	
Indiana.....	15	16	158	23	6	6	129	220,183		12,505	120,777		80,095	7,856	7,950
Kansas.....	6	6	50	7		1	42	49,360		450	42,304		5,070	1,545	
Kentucky.....	13	13	80	13	1	3	63	73,344	1,800	5,000	54,534		9,510	2,500	
Maryland.....	5	5	37	5		1	31	46,377		525	37,398		6,202	252	2,000
Massachusetts.....	5	6	95	2	1	4	38	297,991	3,640	9,100	149,434		113,764	2,400	19,653
Missouri.....	19	19	299	16		16	267	501,573		33,504	286,938		153,057	10,283	17,791
New York.....	15	15	120	6	4	14	96	288,886	4,514	26,533	139,207		93,205	2,152	23,255
Ohio.....	11	11	33	10		2	21	43,881		2,000	23,747		14,534	2,300	1,300
Pennsylvania.....	30	30	206	25	3	10	108	344,906	12,949	15,308	210,360	7,182	71,466	12,726	14,615
Washington.....	7	7	49	2		5	42	111,850		5,260	47,634		54,052	4,423	481
<i>Groups of States</i>															
Ala., 1 enterprise; Fla., 2; N. C., 3; Tenn., 1; Va., 2; W. Va., 1.....	10	10	114	10		7	97	113,053		6,600	81,672		15,768	4,328	4,685
Ariz., 1 enterprise; Mont., 1; Nev., 1; N. Mex., 1; Oreg., 7.....	11	11	127	11		6	110	297,785		13,220	157,413	30,426	63,808	22,804	4,094
Ark., 1 enterprise; Okla., 1; Tex., 1.....	3	6	133		6	10	117	340,857	33,800	19,025	152,099		99,246	9,731	26,906
Iowa, 1 enterprise; Mich., 1; Minn., 2; Wis., 1.....	5	5	28	4			24	50,316			31,750		14,400	4,166	
Me., 1 enterprise; N. H., 1; N. J., 2; R. I., 1.....	5	5	30	1	5	6	18	44,849	3,800	5,350	27,058	1,000	2,573	4,200	868

## MINES AND QUARRIES

TABLE 25.—DETAILED STATISTICS FOR THE STONE-QUARRYING INDUSTRIES, BY STATES: 1929—Continued

INDUSTRY AND STATE	Expenditures for development (included in "Principal expenses" thousands)	Value of products	Machinery and other equipment purchased during the year (total cost)	PRIME MOVERS AND ELECTRIC MOTORS DRIVEN BY PURCHASED ENERGY										Electric motors driven by energy generated by enterprises reporting		Electric generators			
				Aggregate horsepower	Prime movers								Electric motors driven by purchased energy						
					Total horsepower of prime movers	Steam engines		Steam turbines		Internal-combustion engines		Water wheels and water turbines		Number	Horsepower	Number	Horsepower		
						Number	Horsepower	Number	Horsepower	Number	Horsepower	Number	Horsepower						
SANDSTONE																			
<i>Individual States</i>																			
California	\$13	\$787,680	\$2,631	3,653	450	1	40			9	410			82	3,203				
Colorado		21,562		115										4	115				
New York	22	680,875	34,716	2,813	1,520	27	1,039			20	481			43	1,293	6	99	2	70
Ohio	73	1,186,128	1,275	6,426	3,382	30	3,260			2	132			85	3,044	6	195	1	72
Pennsylvania	116	1,015,444	44,288	7,167	3,563	38	2,680			41	873			115	3,014				
South Dakota	7	195,707	650	1,690	10	1	10							38	1,680				
Virginia		175,019	15,753	832	120	3	120							22	762				
Wisconsin		66,012		279	80	2	70			1	10			9	199				
<i>Groups of States</i>																			
Ala., 1 enterprise; Ky., 2; Tenn., 1		76,206	2,634	150	100	1	100							2	50				
Ariz., 1 enterprise; Idaho, 1; N. Mex., 1; Wyo., 2		281,932		1,456	920	8	890			1	30			17	536				
Ark., 3 enterprises; Kans., 2; Minn., 3; Okla., 1		395,512		1,341	225	3	80	1	125	1	20			30	1,116				
Conn., 1 enterprise; Mass., 2; N. J., 2; W. Va., 2		140,813	5,650	805	410	4	130			8	280			7	395				
Oreg., 2 enterprises; Wash., 2	30	689,087	22,642	2,158	600	10	500	2	100					63	1,558				
MISCELLANEOUS																			
<i>Individual States</i>																			
California	41	3,789,013	130,533	12,283	1,500	17	834			15	672			347	10,782				
Illinois		210,137	1,115	406	841	5	141			4	200			8	65				
Indiana	2	308,739	8,600	1,099	862	17	625			4	237			12	237				
Kansas		80,047	1,000	701	576	2	100			4	476			2	125				
Kentucky		149,140	10,000	517	331	13	331							7	136				
Maryland		69,862		120	65	5	65							2	55				
Massachusetts		314,223	21,041	740										16	740				
Missouri	64	628,765	6,800	1,291	633	1	35			15	648			29	608				
New York	49	593,467	41,211	3,435	1,318	18	643			17	675			63	2,117				
Ohio	2	85,721		550	337	13	327			1	10			12	213				
Pennsylvania	4	568,783	54,681	2,114	645	12	548			4	97			45	1,469				
Washington	14	185,577	2,165	591	555	1	30			7	525			4	36				
<i>Groups of States</i>																			
Ala., 1 enterprise; Fla., 2; N. C., 3; Tenn., 1; Va., 2; W. Va., 1		204,371	8,000	660	345	9	255			2	90			9	315				
Ariz., 1 enterprise; Mont., 1; Nev., 1; N. Mex., 1; Oreg., 7	47	440,654	14,727	1,613	820	11	610			3	210			20	793				
Ark., 1 enterprise; Okla., 1; Tex., 1		626,693	76,002	1,625	180					1	180			43	1,445	6	113	1	75
Iowa, 1 enterprise; Mich., 1; Minn., 2; Wis., 1		116,656	520	322	322	4	112			5	210								
Me., 1 enterprise; N. H., 1; N. J., 2; R. I., 1		97,632	6,500	455	155	2	70			4	85			9	300				

QUARRYING OPERATIONS OF CEMENT AND LIME MANUFACTURERS

In order that statistics for the quarrying industries might be as complete as possible, manufacturers of lime and cement were canvassed for their quarrying activities. The quantity of limestone and related material produced by these enterprises forms an appreciable part of the total production of the limestone industry, and therefore statistics are presented in Tables 26 and 27 covering such quarrying activities. As far as possible to do so, without disclosing exactly or approximately the data for individual enterprises, statistics are given by States. Moreover, as data for

production of limestone by cement and lime plants were not compiled for 1919, the separate presentation of these for 1929 permits, by deduction, the determination of comparable production statistics for other limestone enterprises.

In addition to the production represented by these tables, a considerable quantity of limestone was produced by cement plants, as well as a smaller amount by small producers of lime, for which quarrying reports were not received. This production is shown in Table 4, columns 6 and 8. The statistics for 1929 shown in Tables 10 and 11 do not include the figures for limestone given in Tables 26 and 27.

TABLE 26.—PRINCIPAL STATISTICS FOR THE QUARRYING OF LIMESTONE AND CEMENT ROCK BY CEMENT MANUFACTURERS, BY STATES: 1929

STATE	Number of enterprises	Number of quarries	Wage earners (average for the year)	Wages	Cost of supplies	Cost of fuel	Cost of purchased electric energy	Total		LIMESTONE AND CEMENT ROCK				Other products	Horsepower rating of power equipment		
								Tons (2,000 pounds)	Value	Used for cement		Sold as raw material			Value	Prime movers	Electric motors driven by purchased energy
										Tons (2,000 pounds)	Value	Tons (2,000 pounds)	Value				
United States, total.....	129	187	5,414	\$7,437,464	\$4,130,630	\$400,820	\$723,595	40,274,599	\$17,784,074	37,406,073	\$15,592,360	2,773,526	\$2,050,979	\$141,626	60,018	65,330	
Pennsylvania.....	22	23	1,032	1,573,520	998,420	63,621	199,297	9,989,272	3,818,802	9,588,043	3,403,534	400,629	406,314	8,954	17,046	21,040	
Missouri.....	5	6	435	600,543	283,338	16,872	81,516	2,540,210	1,527,133	2,008,791	971,982	531,419	555,151	-----	772	3,226	
California.....	9	9	509	713,737	340,503	39,640	39,975	3,206,859	1,499,860	3,202,341	1,483,293	4,618	16,642	-----	2,480	5,242	
Michigan.....	4	5	287	390,382	293,430	32,119	48,400	2,672,600	1,167,325	1,450,606	640,970	1,221,994	512,756	18,599	1,068	8,588	
Kansas.....	9	9	201	227,887	178,504	30,954	15,531	2,057,689	971,611	2,080,561	944,957	27,128	22,380	4,274	2,475	1,543	
Illinois.....	4	4	410	524,830	153,861	17,647	62,700	2,473,948	895,458	2,473,048	587,756	-----	-----	7,702	13,345	1,026	
New York.....	9	10	283	445,640	211,406	19,070	48,577	2,276,616	853,313	2,276,616	845,418	-----	-----	7,895	900	3,447	
Iowa.....	4	5	283	326,328	144,366	35,040	11,815	1,614,744	843,434	1,401,630	726,597	213,114	116,927	-----	4,020	645	
Ohio.....	8	9	278	406,555	224,880	41,320	50,913	1,978,811	798,321	1,952,942	731,549	25,877	-----	31,300	1,859	6,465	
Alabama.....	7	8	245	280,280	157,619	16,028	40,779	1,698,278	621,132	1,698,278	608,231	-----	-----	12,901	2,020	3,249	
Texas.....	7	7	146	191,152	113,239	32,909	5,075	1,732,153	604,788	1,732,153	595,112	-----	-----	9,676	625	2,918	
Washington.....	5	5	131	174,789	104,495	4,898	19,644	665,348	502,248	620,229	45,110	43,900	-----	-----	334	1,975	
Indiana.....	4	4	194	198,751	114,003	18,646	7,274	1,247,325	534,878	1,247,328	534,290	-----	-----	588	2,307	695	
Tennessee.....	5	5	127	177,254	84,714	9,711	17,510	1,138,730	467,302	1,138,739	460,656	-----	-----	6,640	935	1,692	
Virginia.....	3	3	87	96,796	52,427	9,741	10,797	480,958	291,581	480,958	201,581	-----	-----	-----	2,093	1,658	
Other States <sup>1</sup> .....	24	25	761	1,109,020	608,836	76,613	63,777	4,501,038	2,332,798	4,192,310	1,948,360	308,728	346,347	38,081	11,236	5,048	

<sup>1</sup> Colorado, 2 enterprises; Florida, 1; Georgia, 2; Kentucky, 1; Maine, 1; Maryland, 2; Minnesota, 1; Montana, 2; Nebraska, 1; New Jersey, 2; Oklahoma, 1; Oregon, 3; Utah, 2; West Virginia, 2; Wyoming, 1.

TABLE 27.—PRINCIPAL STATISTICS FOR THE QUARRYING OF LIMESTONE BY PRODUCERS OF LIME, BY STATES: 1929

STATE	Number of enterprises	Number of quarries	Wage earners (average for the year)	Wages	Cost of supplies	Cost of fuel	Cost of purchased electric energy	Total		LIMESTONE				Other products	Horsepower rating of power equipment		
								Tons (2,000 pounds)	Value	Used for lime		Sold as raw material			Value	Prime movers	Electric motors driven by purchased energy
										Tons (2,000 pounds)	Value	Tons (2,000 pounds)	Value				
United States, total.....	109	115	4,619	\$5,192,682	\$2,052,158	\$366,804	\$385,035	17,370,167	\$13,247,023	3,403,258	\$7,094,003	3,966,909	\$6,139,293	\$13,727	12,767	38,042	
Ohio.....	14	14	999	1,247,569	515,647	103,550	208,287	5,970,809	3,682,029	1,071,048	803,666	4,907,861	2,878,363	-----	2,570	9,079	
West Virginia.....	7	7	752	800,206	297,989	23,193	120,163	2,376,473	2,157,066	1,704,609	1,596,263	671,604	500,801	-----	663	8,344	
Pennsylvania.....	9	11	470	618,106	273,713	20,265	123,493	1,623,455	1,638,748	1,417,222	1,360,474	200,233	275,271	-----	937	4,138	
Virginia.....	9	9	407	334,700	109,085	7,918	38,235	724,600	730,826	508,461	518,846	216,139	211,980	-----	675	1,556	
Illinois.....	7	7	169	214,877	74,204	9,689	33,294	574,190	532,432	169,564	171,639	404,626	380,793	-----	450	1,786	
Missouri.....	7	8	232	288,753	64,086	7,398	18,825	930,144	528,000	891,783	473,814	38,361	54,196	-----	282	1,010	
Wisconsin.....	8	10	134	141,639	44,235	8,137	28,630	380,045	398,297	174,608	131,440	205,637	266,857	-----	653	2,732	
Texas.....	4	4	173	144,332	130,027	15,850	13,051	640,453	385,858	640,453	385,588	-----	-----	-----	50	856	
Maine.....	3	3	75	121,004	24,105	728	12,873	221,819	281,912	151,727	107,917	70,092	83,995	-----	-----	1,160	
Massachusetts.....	6	6	90	125,532	23,610	16,175	5,737	207,675	249,623	199,804	226,010	7,871	23,618	-----	250	624	
New York.....	4	4	84	108,326	44,637	8,216	11,823	241,073	220,065	73,302	69,386	167,771	150,019	-----	306	336	
California.....	3	3	79	91,312	18,110	24,961	8,976	102,148	182,122	55,148	58,096	47,000	97,037	6,940	240	987	
Other States <sup>1</sup> .....	28	29	955	956,206	432,704	121,235	62,148	3,368,283	2,280,369	1,344,729	1,100,269	2,023,594	1,173,319	8,787	5,675	4,925	

<sup>1</sup> Alabama, 5 enterprises; Arizona, 2; Arkansas, 3; Colorado, 1; Connecticut, 3; Florida, 1; Georgia, 1; Indiana, 1; Maryland, 1; Michigan, 1; Minnesota, 1; Montana, 1; Nevada, 1; Tennessee, 1; Utah, 1; Vermont, 2; Washington, 2.



## CRUSHED STONE

Crushed stone comprised the major product, measured in tonnage and value, of the stone-quarrying industries, as reported at the census for 1929. Accordingly, the salient statistics for the production of crushed stone are given in Tables 28 to 34, covering the operations of those enterprises engaged wholly or principally in its production. These tables do not include data for production by manufacturers of cement (see Table 26), or of lime (see Table 27), for noncommercial production (State, county, municipal, public utility, and railroad), for production incidental to other quarry production, and that for certain other enterprises (see Table 4). The statistics given for the production of crushed stone are included in the figures shown in other tables of this report for the several stone industries, and are presented separately in the tables that follow for the purpose of showing the importance of these enterprises as producers of material for construction, road-building, etc. A con-

siderable portion of crushed limestone reported in these tables was used as fluxing material in the metallurgical industries.

Statistics for crushed-stone enterprises, by industries (Table 28).—This table presents general statistics for crushed-stone enterprises, classified according to kind of stone. Of the total quantity produced by enterprises covered by this table, the limestone industry accounted for 73.5 per cent, a large portion of which was consumed by the metallurgical industries as flux. The basalt, granite, sandstone, and miscellaneous-stone products are consumed in the main as "aggregate material" for construction and road-building purposes. Crushed slate and marble products are used primarily as roofing granules, and other special purposes, which accounts for the high average value per ton for these products. For limitations of these statistics for crushed stone, see Table 4, and explanations at beginning of this section.

TABLE 28.—SUMMARY FOR THE PRODUCTION OF CRUSHED STONE, BY INDUSTRIES: 1929

[This table does not include data for the production of crushed stone by the following classes of enterprises: (1) Noncommercial (State, county, municipal, public utility, and railroad); (2) manufacturers of lime and cement (see Tables 26 and 27); (3) enterprises in which crushed stone was a product of secondary importance. However, this table includes data for the crushing of boulders and stone derived from miscellaneous sources, in addition to quarried stone]

INDUSTRY	Number of enterprises	Number of quarries	Wage earners (average for the year)	Wages	Cost of supplies	Cost of fuel	Cost of purchased electric energy	Crushed stone, tons (2,000 pounds)	Value of products	HORSEPOWER RATING OF POWER EQUIPMENT		AVERAGE PER TON			Tons per wage earner
										Prime movers	Electric motors driven by purchased energy	Wages	Supplies, fuel, and purchased electric energy	Value of products	
Crushed stone, total.....	1,199	1,270	24,151	\$20,209,558	\$18,104,855	\$3,220,344	\$4,019,647	102,960,312	\$99,627,502	141,844	280,428	\$0.28	\$0.25	\$0.97	4,263
Limestone.....	742	785	16,443	19,437,416	12,603,097	2,308,699	2,592,437	75,633,654	66,908,230	102,933	173,104	.26	.23	.88	4,600
Basalt.....	124	131	2,877	4,246,731	2,104,493	372,267	617,604	11,948,577	14,799,318	18,273	42,703	.36	.20	1.24	4,152
Stone, miscellaneous.....	174	200	1,507	1,940,885	1,422,566	144,600	219,273	6,670,030	6,959,782	7,064	17,682	.29	.27	1.04	4,423
Granite.....	86	89	2,066	2,162,427	1,273,423	208,840	358,708	6,951,020	6,750,956	7,036	31,130	.36	.31	1.13	2,850
Sandstone.....	56	56	921	1,051,121	1,472,536	70,346	144,122	2,401,138	2,718,249	4,680	9,766	.42	.28	1.09	2,705
Slate.....	6	6	214	209,315	110,802	21,134	56,479	178,544	1,025,924	475	4,276	1.19	1.12	5.81	825
Marble.....	11	12	123	161,663	18,948	4,668	30,724	91,349	471,034	483	1,817	1.77	.59	6.16	743

Crushed slag (Table 29).—In addition to the production of crushed stone, a considerable quantity of crushed slag was produced in 1929. The principal uses of crushed slag are among those for which crushed stone is used, namely—"aggregate material," ballast, roofing material granules, etc. Summary figures for the production of crushed slag are shown, therefore, supplementing those for the crushed-stone industry. Figures for individual States can not be shown on account of disclosure of data for individual operations. However, the principal States in the production of

crushed slag in 1929 were Ohio, Alabama, Pennsylvania, and New York, which together accounted for 89.4 per cent of the total tonnage produced.

The statistics given in this table are not included in figures shown in any other table of this report, nor in any of the summaries, for industries or for States, given in the various reports for the census of mines and quarries. Figures for slag production were obtained from returns filed for the census of manufactures.

TABLE 29.—SUMMARY FOR THE PRODUCTION OF CRUSHED SLAG: 1929

Number of enterprises <sup>1</sup> .....	49	Principal expenses:		Crushed slag:	
Number of plants.....	49	Salaries.....	\$313,382	Approximate quantity, tons (2,000 pounds).....	8,193,285
Salaried employees (number).....	122	Wages.....	\$1,643,620	Value.....	\$7,168,981
Wage earners (average for the year).....	999	Supplies.....	\$1,235,920		
Power equipment, total horsepower.....	19,293	Fuel.....	\$192,128		
		Purchased electric energy.....	\$162,539		

<sup>1</sup> Alabama, 5 enterprises; Illinois, 1; Kentucky, 1; Maryland, 1; Michigan, 1; New York, 3; Ohio, 19; Pennsylvania, 17; West Virginia, 1.

Enterprises classified according to quantity of product (Table 30).—Of the total number of enterprises (1,199) covered by this report on crushed stone, 832, or 69.4 per cent, produced less than 50,000 tons each, accounting for only 12.7 per cent of the total tonnage. Conversely, 118 enterprises, which operated 154 quarries and produced 200,000 tons or more each, contributed 62.8 per cent of the total tonnage of crushed stone.

TABLE 30.—SUMMARY FOR CRUSHED-STONE ENTERPRISES CLASSIFIED ACCORDING TO QUANTITY OF PRODUCT: 1929

QUANTITY OF PRODUCT PER ENTERPRISE (TONS, 2,000 POUNDS)	Number of enterprises	Number of quarries	WAGE EARNERS (AVERAGE FOR THE YEAR)		Wages	Cost of supplies	Cost of fuel	Cost of purchased electric energy	Crushed stone, tons (2,000 pounds)	Value of products	HORSEPOWER RATING OF POWER EQUIPMENT		AVERAGE PER TON			Tons per wage earner
			Number	Per quarry							Prime movers	Electric motors driven by purchased energy	Wages	Supplies, fuel, and purchased electric energy	Value of products	
Crushed stone, total.....	1,199	1,270	24,151	19	\$20,209,558	\$18,104,855	\$3,220,344	\$4,019,647	102,900,312	\$99,627,502	141,844	280,428	\$0.28	\$0.25	\$0.07	4,268
Less than 5,000.....	190	105	595	3	532,350	157,003	19,344	47,096	568,307	1,257,300	4,868	6,833	1.03	.40	2.23	947
5,000 to 9,999.....	178	182	875	5	930,309	311,331	30,841	49,358	1,278,137	2,188,236	6,230	7,093	.73	.31	1.70	1,461
10,000 to 24,999.....	286	201	2,713	9	2,647,446	973,465	178,471	302,413	4,530,233	6,748,823	11,423	23,839	.58	.32	1.49	1,670
25,000 to 49,999.....	178	191	3,177	17	3,338,930	1,344,474	321,126	425,452	6,658,489	9,402,542	13,690	30,454	.50	.31	1.41	2,066
50,000 to 99,999.....	135	141	3,574	25	3,792,728	1,493,712	333,392	558,450	9,774,683	11,549,634	13,310	35,600	.39	.24	1.18	2,735
100,000 to 199,999.....	114	125	4,339	35	4,983,020	2,502,923	447,804	739,262	15,520,434	15,871,560	24,280	49,280	.32	.24	1.02	3,577
200,000 to 499,999.....	84	93	4,451	48	5,957,973	4,022,574	716,778	980,010	24,869,811	22,711,695	30,574	65,002	.24	.23	.91	5,587
500,000 to 999,999.....	19	25	1,760	70	2,676,153	1,727,726	295,753	463,711	13,095,360	10,621,070	10,910	30,787	.20	.19	.81	7,483
1,000,000 to 1,999,999.....	14	35														
2,000,000 and over.....	1	1	2,077	74	4,299,749	5,571,042	867,836	453,886	26,669,798	19,296,642	26,559	31,030	.16	.26	.72	9,903

<sup>1</sup> Combined to avoid disclosing, exactly or approximately, the data reported by an individual enterprise.

Detailed statistics for crushed-stone enterprises, by States (Tables 31, 32, and 33).—These tables present statistics for enterprises engaged primarily in the production of crushed stone, for the United States as a whole, and for each State for which separate figures can be given without disclosing, exactly or approximately, the data reported by individual enterprises.

TABLE 31.—WAGE EARNERS, BY MONTHS, FOR CRUSHED-STONE ENTERPRISES, BY STATES: 1929

[The month of maximum employment is indicated by bold-faced figures and that of minimum employment by *italic* figures]

STATE	Average number employed during year	NUMBER EMPLOYED ON 15TH DAY OF MONTH OR NEAREST REPRESENTATIVE DAY												Per cent minimum is of maximum
		January	February	March	April	May	June	July	August	September	October	November	December	
United States, total.....	24,151	<b>16,315</b>	17,562	20,839	24,678	27,046	28,101	28,501	28,550	27,509	26,985	23,981	19,244	58.9
Alabama.....	302	296	304	312	330	319	319	330	301	280	<i>274</i>	277	280	83.0
Arkansas.....	261	253	<i>212</i>	279	281	276	261	204	233	243	204	258	245	74.9
California.....	930	865	857	911	892	941	1,035	961	952	914	1,018	968	843	81.4
Colorado.....	185	175	177	172	165	101	202	185	178	200	177	199	197	81.7
Connecticut.....	389	<i>291</i>	<i>291</i>	299	409	454	447	460	468	442	422	374	316	62.4
Florida.....	275	269	276	268	280	248	295	332	299	284	312	<i>227</i>	229	68.4
Georgia.....	374	<i>295</i>	330	332	330	444	424	458	<i>416</i>	399	371	<i>357</i>	307	66.0
Illinois.....	986	671	674	723	1,043	1,170	1,195	1,180	1,156	1,136	1,063	1,018	808	56.2
Indiana.....	691	<i>291</i>	313	463	631	833	919	922	989	989	868	585	443	29.4
Iowa.....	339	193	176	261	362	388	443	460	463	448	404	288	220	38.0
Kansas.....	418	<i>227</i>	296	419	499	495	468	475	605	442	435	437	314	45.0
Kentucky.....	926	532	<i>546</i>	787	1,062	1,083	1,164	1,189	1,066	1,002	998	922	706	49.0
Maryland.....	417	<i>207</i>	220	374	435	471	485	494	616	513	503	678	324	40.1
Massachusetts.....	623	231	<i>269</i>	400	665	740	770	831	803	758	678	459	459	31.2
Michigan.....	993	605	792	883	1,036	1,000	1,145	1,185	1,180	1,161	1,142	1,003	625	53.0
Minnesota.....	134	79	80	91	127	171	178	177	166	151	137	136	126	44.4
Missouri.....	1,083	700	<i>657</i>	945	1,018	1,169	1,261	1,305	1,361	1,383	1,273	1,100	828	47.5
New Jersey.....	700	585	<i>538</i>	645	738	748	749	753	763	756	736	728	684	70.3
New Mexico.....	79	22	<i>24</i>	34	83	100	107	107	110	118	98	89	8	6.9
New York.....	1,809	<i>730</i>	1,305	1,596	1,954	2,153	2,297	2,333	2,360	2,287	2,161	1,806	1,470	30.6
North Carolina.....	672	658	646	676	700	816	818	646	699	623	701	546	511	62.5
Ohio.....	1,263	848	<i>771</i>	922	1,200	1,379	1,462	1,514	1,678	1,647	1,479	1,313	1,023	48.9
Oklahoma.....	453	417	<i>395</i>	448	432	431	421	503	493	479	490	447	462	78.1
Oregon.....	158	126	<i>100</i>	146	178	207	201	138	184	197	170	152	104	48.3
Pennsylvania.....	5,289	<i>4,039</i>	4,120	4,720	5,354	5,946	6,048	6,137	6,192	5,832	5,955	5,095	4,043	65.1
South Carolina.....	485	483	478	489	491	469	423	440	<i>416</i>	454	571	560	543	72.9
South Dakota.....	56	<i>13</i>	13	16	32	71	87	94	98	104	88	32	19	12.5
Tennessee.....	468	<i>391</i>	419	452	500	522	511	501	493	480	476	459	411	74.9
Texas.....	796	<i>699</i>	655	733	836	797	864	911	879	816	831	845	758	70.1
Utah.....	62	43	58	91	68	65	75	108	75	46	39	40	36	33.3
Virginia.....	995	<i>702</i>	716	934	1,051	1,162	1,164	1,183	1,132	1,116	1,094	923	760	59.3
Washington.....	158	66	<i>63</i>	98	115	128	151	223	252	221	208	208	121	25.0
West Virginia.....	218	104	<i>99</i>	154	219	265	300	311	298	298	233	213	109	31.8
Wisconsin.....	677	<i>443</i>	293	350	541	685	758	772	763	703	683	664	464	31.5
Other States.....	526	<i>357</i>	367	396	526	624	674	675	662	613	526	458	423	52.9

MINES AND QUARRIES

TABLE 32.—SUMMARY FOR THE PRODUCTION OF CRUSHED STONE, BY STATES: 1929

[See headnote, Table 28]

STATE	Number of enterprises	Number of quarries	Wage earners (average for the year)	Wages	COST OF SUPPLIES, FUEL, AND PURCHASED ELECTRIC ENERGY			Crushed stone produced, tons (2,000 pounds)	Value of products
					Supplies	Fuel	Purchased electric energy		
United States, total.....	1,199	1,279	24,161	\$29,209,658	\$18,104,855	\$3,220,344	\$4,019,647	102,960,000	\$99,627,502
Alabama.....	8	9	302	238,959	120,316	6,752	45,841	508,000	510,064
Arkansas.....	8	11	261	257,529	156,895	17,125	36,084	632,000	994,298
California.....	78	102	930	1,446,397	1,258,599	120,833	07,253	6,400,000	5,680,492
Colorado.....	11	11	185	240,114	56,264	3,090	5,498	393,000	399,345
Connecticut.....	17	17	389	674,542	117,087	79,508	88,682	2,330,000	2,674,751
Florida.....	28	28	275	217,889	136,145	27,270	35,100	1,311,000	1,031,779
Georgia.....	11	12	374	271,502	149,035	38,964	45,780	657,000	907,654
Illinois.....	39	41	980	1,227,854	651,061	170,224	211,891	7,571,000	5,831,717
Indiana.....	69	79	691	982,436	276,389	61,821	76,492	2,236,000	2,253,537
Iowa.....	21	21	339	413,090	212,497	53,771	66,310	1,357,000	1,312,498
Kansas.....	23	25	418	440,107	185,447	25,935	59,663	1,142,000	1,062,627
Kentucky.....	56	56	926	718,061	290,227	61,890	58,336	2,077,000	2,002,772
Maryland.....	22	24	417	428,320	157,769	25,147	43,207	760,000	1,087,879
Massachusetts.....	29	32	623	1,063,824	566,391	49,037	172,756	2,844,000	3,651,396
Michigan.....	10	11	998	1,540,180	1,083,247	618,276	77,102	13,353,000	8,827,005
Minnesota.....	10	10	134	177,844	80,858	10,330	50,512	278,000	635,371
Missouri.....	65	56	1,083	1,095,353	464,008	72,466	101,704	2,177,000	2,063,646
New Jersey.....	30	32	706	1,152,700	500,144	161,144	170,440	2,631,000	3,932,782
New Mexico.....	3	3	79	75,850	46,627	25,462	555,000	555,000	255,314
New York.....	74	78	1,809	2,970,362	2,042,909	311,355	511,896	11,150,000	12,253,860
North Carolina.....	22	22	872	564,513	317,097	80,393	75,494	1,093,000	1,445,895
Ohio.....	82	84	1,253	1,640,782	933,676	205,168	386,048	8,724,000	7,340,089
Oklahoma.....	18	21	453	440,069	202,670	36,058	108,664	2,217,000	1,594,658
Oregon.....	17	17	158	226,273	102,870	30,385	9,857	613,000	662,764
Pennsylvania.....	216	227	5,289	6,529,584	2,946,634	472,704	773,662	16,535,000	16,818,376
South Carolina.....	9	9	485	375,535	173,691	41,080	92,229	927,000	1,160,483
South Dakota.....	8	8	56	70,889	30,812	377	14,168	170,000	216,764
Tennessee.....	24	27	468	390,737	177,793	15,566	57,014	1,231,000	1,308,167
Texas.....	21	22	796	755,393	380,637	80,543	98,159	2,627,000	2,173,267
Utah.....	5	5	62	78,827	33,787	614	8,447	184,000	167,244
Virginia.....	58	59	995	893,368	499,373	73,334	156,168	2,789,000	3,043,247
Washington.....	20	21	158	188,471	103,978	30,161	1,208	555,000	536,276
West Virginia.....	10	10	218	267,851	111,942	23,833	27,842	746,000	663,082
Wisconsin.....	43	44	577	858,007	434,812	75,369	111,484	3,140,000	2,780,958
Other States <sup>2</sup> .....	44	45	526	593,616	138,318	73,780	38,244	978,000	1,341,070

PRIME MOVERS AND ELECTRIC MOTORS DRIVEN BY PURCHASED ENERGY

STATE	Aggregate horsepower	Total horsepower of prime movers	Prime movers								Electric motors driven by purchased energy		Electric motors driven by energy generated by enterprises reporting		Electric generators	
			Steam engines		Steam turbines		Internal-combustion engines		Water wheels and water turbines		Number	Horsepower	Number	Horsepower	Number	Kilowatts
			Number	Horsepower	Number	Horsepower	Number	Horsepower	Number	Horsepower						
United States, total.....	422,272	141,844	1,212	90,659	13	14,179	739	36,051	8	955	8,847	280,428	304	17,214	35	13,513
Alabama.....	2,722	330	11	330							52	2,392				
Arkansas.....	2,195	250	4	205			2	45			47	1,945				
California.....	23,345	3,844	35	1,916			40	1,028			571	19,501				
Colorado.....	1,276	331	1	90			7	241			30	945				
Connecticut.....	7,384	1,333	8	1,030			5	303			80	6,051	5	50	1	75
Florida.....	7,364	5,218	53	3,979	2	90	29	1,147			48	2,148	3	47	3	35
Georgia.....	5,778	1,690	11	990			6	450	1	250	94	4,058	18	630	3	537
Illinois.....	26,793	10,701	80	9,091			26	1,610			361	16,092				
Indiana.....	11,169	6,175	65	3,230			28	1,945			163	5,994	4	100	1	75
Iowa.....	5,995	1,925	18	1,424			20	501			134	4,070				
Kansas.....	5,476	2,011	21	978			21	1,033			33	3,405				
Kentucky.....	7,992	5,029	67	4,030			24	999			77	2,873				
Maryland.....	4,983	1,647	18	1,007			9	500	1	40	94	3,436				
Massachusetts.....	13,913	3,120	21	1,240			27	1,880			237	10,793	3	300		
Michigan.....	21,810	17,193	30	3,646	3	13,000	10	547			74	4,617	175	13,220	6	10,508
Minnesota.....	4,705	435	6	225			6	210			94	4,270				
Missouri.....	8,958	2,910	17	1,180			25	1,724			173	6,948	3	10	1	7
New Jersey.....	16,632	5,439	31	3,432			32	2,007			192	10,613	6	350	1	325
New Mexico.....	1,065	10	10	1,065												
New York.....	44,669	11,228	134	6,505	3	54	48	1,949	1	20	786	33,741	26	950	2	782
North Carolina.....	8,517	2,735	17	1,785			13	950			92	5,782	17	800	6	572
Ohio.....	36,120	15,002	133	12,708			38	2,234			613	21,118	7	180	4	305
Oklahoma.....	6,929	1,097	14	735			14	362			108	5,832				
Oregon.....	2,713	1,325	20	885			6	440			35	1,388				
Pennsylvania.....	77,306	21,766	192	15,579	1	100	143	5,972	3	115	1,541	55,540				
South Carolina.....	11,140	1,380	16	465			16	925			174	9,766			1	3
South Dakota.....	1,838	20	1	20							43	1,618				
Tennessee.....	4,315	430	14	350			2	80			80	3,885				
Texas.....	9,333	3,733	32	1,730	4	935	17	1,118			128	5,550	6	113	1	75
Utah.....	390	65	2	15			2	50			6	295				
Virginia.....	13,722	4,452	61	3,274			18	678	1	500	208	9,270	28	410	1	100
Washington.....	2,535	2,335	8	675			28	1,660			7	200			1	2
West Virginia.....	3,486	1,748	16	1,063			2	85			38	1,738				
Wisconsin.....	13,577	2,115	13	840			35	1,275			277	11,462				
Other States <sup>2</sup> .....	6,491	2,789	26	1,250			34	1,503	1	30	107	3,702	3	45	3	112

<sup>1</sup> The return filed by one of the enterprises in Michigan reported an abnormally large amount for this item, which probably represents the inclusion of a considerable amount for capital and other expenditures not called for by this inquiry.

<sup>2</sup> Arizona, 5 enterprises; Delaware, 2; Idaho, 4; Louisiana, 1; Maine, 6; Montana, 4; Nebraska, 3; Nevada, 1; New Hampshire, 2; Rhode Island, 7; Vermont, 5; Wyoming, 4.

TABLE 33.—CONSUMPTION OF FUEL AND ELECTRIC ENERGY, FOR CRUSHED-STONE ENTERPRISES, BY STATES: 1929

STATE	FUEL AND ELECTRIC ENERGY CONSUMED							
	Fuel						Electric energy	
	Coal		Coke, tons (2,000 pounds)	Fuel oils, gallons	Gasoline and kerosene, gallons	Natural gas, M cubic feet	Purchased, kilo- watt-hours	Generated by enterprises re- porting, kilo- watt-hours
	Anthracite, tons (2,240 pounds)	Bituminous, tons (2,000 pounds)						
United States, total.....	44,212	620,360	1,894	5,420,422	3,896,397	184,042	221,597,245	30,572,149
Alabama.....		1,916			6,040		4,038,951	
Arkansas.....	500	2,302		1,500	20,990	59,100	1,523,400	
California.....		2,159		2,717,189	265,379	8,100	14,955,186	
Colorado.....		428		15	2,130		497,978	
Connecticut.....	3	12,891	73	8,289	45,909		4,312,957	
Florida.....		5,630		13,651	72,681		1,127,402	
Georgia.....		13,832		7,631	37,924		3,175,238	1,440,000
Illinois.....		40,231		60,779	126,252		12,266,493	
Indiana.....		10,100		35,989	70,059		3,580,520	150,000
Iowa.....		12,238		100	106,663		3,748,474	
Kansas.....		3,538		103,850	92,644		2,588,248	
Kentucky.....		22,232		5,350	69,700		1,915,761	
Maryland.....		5,560	61	29,840	14,450		1,974,080	
Massachusetts.....	5	5,197		48,588	142,559		6,680,020	
Michigan.....	10	159,623		4,000	99,200		5,931,000	21,822,260
Minnesota.....		669	3		26,021		2,772,587	
Missouri.....	7	14,985	10	142,798	50,395		4,736,866	18,000
New Jersey.....	1,006	13,990		185,744	174,865		6,282,633	1,860,800
New Mexico.....		3,902			1,057			
New York.....	35	47,284	40	21,065	518,452		30,049,787	1,452,500
North Carolina.....		12,597		37,851	108,440		4,431,143	593,200
Ohio.....	85	81,726	10	174,294	375,533	12,300	16,500,271	110,000
Oklahoma.....		5,659		37,155	39,400		5,218,744	
Oregon.....		127		106,202	18,799		561,268	
Pennsylvania.....	40,963	87,588	1,539	213,906	780,005	6,182	46,338,178	
South Carolina.....	1,500	3,714	150	12,182	60,160		5,554,863	
South Dakota.....		8			625		420,609	
Tennessee.....		4,437			7,902		4,609,642	
Texas.....		8,438		827,063	124,911	99,200	5,291,075	
Utah.....		62	8		725		275,072	
Virginia.....		14,886		103,782	63,709		7,496,604	3,192,984
Washington.....		1,260		117,652	56,639		72,125	
West Virginia.....		6,692			15,422		3,082,965	
Wisconsin.....		7,861		57,640	133,247		6,979,116	
Other States.....	8	6,184		354,317	104,390		1,698,572	13,405

## MINES AND QUARRIES

TABLE 34.—DISTRIBUTION OF SALES, BY MARKETING CHANNELS THROUGH WHICH CRUSHED STONE WAS SOLD BY PRODUCERS, BY STATES: 1929

MARKETING CHANNELS		United States	Pennsylvania	Michigan	New York	Ohio	Illinois	California	Virginia	Wisconsin	Other States
Total	Tons <sup>1</sup> ..... Value.....	108,905,919 \$106,136,528	16,401,288 \$17,141,929	13,580,677 \$8,888,104	11,199,597 \$12,422,305	10,370,177 \$8,567,023	7,955,836 \$6,094,070	6,549,782 \$5,773,928	3,597,800 \$3,823,003	3,326,247 \$3,028,470	35,984,516 \$40,396,546
Sales direct to nonaffiliated concentration, treatment, and quarry-products plants, and manufacturers	Tons..... Value.....	15,151,851 \$13,139,511	6,851,436 \$6,777,993	5,808,788 \$3,713,703	134,720 \$163,415	192,667 \$138,189	707,160 \$568,094	49,439 \$269,521	41,515 \$340,318	285,381 \$182,218	1,680,686 \$1,986,070
Transfers to owned or affiliated processing and manufacturing plants operated as separate units	Tons..... Value.....	11,405,296 \$8,093,528	2,484,322 \$1,625,686	4,943,174 \$3,039,483	18,180 \$11,041	251,876 \$199,998	1,691,176 \$1,128,334	50,774 \$73,101	409,968 \$429,157	10,484 \$7,049	1,545,333 \$1,629,779
Sales through subsidiary sales organizations conducted as distinct merchandising establishments	Tons..... Value.....	2,440,303 \$1,797,493	20,000 \$26,000	1,801,116 \$1,253,403	15,000 \$20,452	-----	-----	64,312 \$48,513	-----	21,048 \$14,340	428,227 \$436,785
Sales to wholesalers and jobbers	Tons..... Value.....	2,144,366 \$3,031,545	276,800 \$771,617	985 \$9,982	140,704 \$178,070	66,768 \$101,250	877,406 \$707,631	181,358 \$179,634	2,531 \$2,804	59,445 \$55,500	538,384 \$1,025,068
Sales through agents, brokers, and other dealers on a commission basis	Tons..... Value.....	3,309,592 \$3,165,235	200,091 \$373,749	332 \$1,660	102,771 \$176,019	300,833 \$311,767	213,148 \$190,096	448,753 \$340,719	48,000 \$36,600	1,054,690 \$804,200	850,944 \$924,495
Sales direct:											
Government agencies (Federal, State, and local)	Tons..... Value.....	6,959,811 \$7,459,307	1,327,663 \$1,539,018	334,331 \$238,162	326,897 \$388,172	1,267,671 \$1,149,117	339,569 \$332,737	183,216 \$161,572	142,829 \$194,099	427,066 \$466,350	2,610,589 \$2,089,180
Contractors for Government construction	Tons..... Value.....	7,681,496 \$7,830,433	661,375 \$766,833	324,233 \$280,920	301,484 \$340,553	2,150,405 \$1,903,536	592,514 \$426,274	518,802 \$415,872	90,216 \$74,161	156,968 \$162,826	2,885,008 \$3,466,458
Contractors for private construction	Tons..... Value.....	16,020,220 \$17,558,316	1,160,372 \$1,807,303	56,446 \$48,939	3,043,788 \$3,894,338	1,098,725 \$1,315,434	634,280 \$637,136	974,180 \$653,222	148,964 \$152,937	443,582 \$628,421	7,259,922 \$8,720,535
Railroads	Tons..... Value.....	11,115,003 \$9,154,133	660,844 \$794,067	106,916 \$93,011	479,022 \$445,504	1,807,044 \$1,445,895	382,658 \$319,128	345,387 \$200,454	1,097,110 \$1,492,962	5,554 \$4,951	5,630,468 \$4,352,161
Public utilities, other than railroads	Tons..... Value.....	1,182,233 \$1,300,600	157,786 \$256,307	17,369 \$23,045	93,084 \$98,700	99,152 \$85,113	-----	44,350 \$30,050	141,782 \$118,848	981 \$1,009	627,730 \$686,028
Other direct sales	Tons..... Value.....	6,505,601 \$6,306,480	1,317,064 \$1,327,532	46,947 \$63,876	130,364 \$153,688	1,915,291 \$1,394,011	460,204 \$470,783	74,509 \$94,092	283,717 \$302,939	124,504 \$134,036	2,152,081 \$2,454,532
SALES NOT SEGREGATED BY INDIVIDUAL CHANNELS											
Sales direct:											
Government agencies (Federal, State, and local)	Tons..... Value.....	350,490 \$431,677	45,956 \$77,341	-----	-----	-----	-----	177,158 \$172,431	6,814 \$7,133	-----	120,562 \$174,772
Contractors for Government construction	Tons..... Value.....	7,504,563 \$7,500,308	99,270 \$87,804	50,000 \$68,000	2,994,473 \$3,363,434	-----	-----	1,888,600 \$1,180,262	310,144 \$357,707	391,221 \$297,056	1,330,855 \$2,200,045
Contractors for private construction	Tons..... Value.....	13,999,553 \$14,592,683	1,307,119 \$1,670,339	-----	2,472,808 \$2,028,769	310,001 \$268,059	2,031,009 \$1,276,570	1,146,945 \$1,420,600	89,543 \$79,006	329,499 \$254,929	6,306,031 \$6,994,311
Railroads											
Public utilities, other than railroads											
Other direct sales											
Sales for which "distribution of sales" was not reported	Tons..... Value.....	3,135,503 \$4,379,803	330,610 \$508,356	-----	256,296 \$600,240	303,259 \$254,655	26,712 \$33,297	401,999 \$600,661	184,667 \$232,412	15,174 \$14,035	1,616,786 \$2,276,147
Sales of miscellaneous products	Value.....	\$245,408	\$38,584	-----	-----	-----	-----	\$31,324	\$420	-----	\$175,140

<sup>1</sup> Tons, 2,000 pounds.

STATISTICS FOR UNDERGROUND-LIMESTONE MINES

Crushed-limestone enterprises classified according to type of operation and quantity of product (Table 35).—This table is presented to show principal statistics for underground mining of limestone and to permit comparisons with the results for open-quarry operations. Practically all of the product contributed by underground mines was crushed stone, and was produced by commercial crushed-stone enterprises and by mines operated by cement manufacturers, with a relatively small portion by mines operated by lime manufacturers. Therefore, for comparative purposes, the summary results for these underground mines are con-

trasted with those for open quarries operated by commercial crushed-stone enterprises and those operated by cement manufacturers. The low averages for principal expense items per ton for the cement-producer class are accounted for largely by the fact that expenses after mining (crushing, etc.) are charged to cement manufacturing operations, and the value attributed to the mine product represents nominal transfer value from mine to cement plant, usually representing the total cost of mining. The figures for underground mines do not include data for those enterprises in which underground mining was of less importance than open-quarrying operations.

TABLE 35.—SUMMARY FOR CRUSHED-LIMESTONE ENTERPRISES CLASSIFIED AS TO TYPE OF OPERATION, AND FOR UNDERGROUND MINES, BY STATES AND BY QUANTITY OF PRODUCT: 1929

[Enterprises whose value of product was less than \$20,000 were permitted to report on an abbreviated schedule, which did not call for information as to type of operations. Accordingly, the data for underground mines in this size class are included in the figures for open quarries]

STATE, TYPE OF OPERATION, AND QUANTITY OF PRODUCT PER ENTERPRISE (tons, 2,000 pounds)	Number of enterprises		WAGE EARNERS (average for the year)		Wages	Cost of supplies	Cost of fuel	Cost of purchased electric energy	Limestone produced, tons (2,000 pounds)	Value of products	HORSEPOWER RATING OF POWER EQUIPMENT		AVERAGE PER TON			TONS PER WAGE EARNER	
	Number of mines and quarries	Total	Underground	Prime movers							Electric motors driven by purchased energy	Wages	Supplies, fuel, and purchased electric energy	Value of products	Total number employed	Total number employed underground	
Limestone produced by crushed-limestone enterprises, and by quarries operated by cement manufacturers, total	871	922	21,857		\$26,874,880	\$16,823,727	\$2,865,428	\$3,310,082	115,908,253	\$84,093,213	171,951	238,434	\$0.23	\$0.20	\$0.78	5,303	
Limestone produced by crushed-limestone enterprises	742	785	16,443		19,437,416	12,603,097	2,308,599	2,592,487	75,033,054	66,908,239	102,933	173,104	.26	.23	.88	4,600	
Limestone produced by quarries operated by cement manufacturers	129	137	5,414		7,437,464	4,130,630	466,829	723,595	40,274,599	17,784,974	69,018	65,330	.18	.13	.44	7,439	
Crushed-limestone enterprises classified according to nature of operations:																	
Open quarries	822	867	18,504		22,920,486	15,028,366	2,755,222	2,804,778	104,799,930	75,295,402	158,037	205,965	.22	.20	.72	5,664	
Underground mines, total <sup>1</sup>	40	55	3,353	2,644	3,945,394	1,797,361	110,206	511,254	11,108,317	9,397,751	13,914	29,439	.36	.22	.85	3,313	4,201
Pennsylvania	11	11	1,000	902	1,471,640	756,756	35,872	166,588	4,254,424	3,313,770	11,763	11,474	.35	.23	.78	3,882	4,717
Missouri	10	14	810	702	751,872	371,601	7,009	90,106	1,714,468	2,003,295	215	4,422	.44	.27	1.17	2,117	2,442
Illinois	5	5	412	312	480,506	114,797	2,890	77,530	1,823,697	1,061,130		2,726	.27	.11	.58	4,426	5,845
West Virginia	4	4	407	228	529,163	242,646	9,001	97,925	1,547,003	1,508,026	375	6,555	.34	.23	.98	3,801	6,785
Other States <sup>2</sup>	19	21	628	500	703,213	311,651	53,934	79,105	1,768,756	1,510,921	1,561	4,292	.40	.25	.85	2,810	3,538
Underground mines classified by size based on tonnage produced, total <sup>1</sup>	40	55	3,353	2,644	3,945,394	1,797,361	110,206	511,254	11,108,317	9,397,751	13,914	29,439	.36	.22	.85	3,313	4,201
10,000 to 24,000	4	4	55	49	41,280	21,633	2,788	2,167	72,615	94,007	90	80	.57	.37	1.29	1,320	1,482
25,000 to 49,999	7	7	156	123	162,956	42,910	12,476	5,013	269,370	344,461	815	443	.60	.28	1.28	1,727	2,100
50,000 to 99,999	12	14	451	360	395,013	105,038	43,037	40,174	886,863	1,111,782	1,230	3,537	.46	.29	1.25	1,966	2,464
100,000 to 199,999	13	15	821	656	825,304	353,624	11,238	101,411	1,801,447	1,734,309	320	5,585	.46	.26	.96	2,194	2,746
200,000 to 499,999	7	9	504	459	668,045	406,559	3,385	109,105	2,066,697	1,726,450	10,000	6,251	.32	.25	.84	4,101	4,503
500,000 to 999,999	3	3	491	413	681,501	378,133	24,501	88,405	2,291,117	1,818,456	943	4,087	.30	.21	.79	4,666	5,547
1,000,000 to 1,999,999	3	3	875	684	1,171,279	429,464	12,781	165,376	3,720,202	2,873,286	610	9,456	.31	.16	.69	4,252	6,370

<sup>1</sup> See explanations preceding this table.

<sup>2</sup> Arkansas, 1 enterprise; California, 3; Georgia, 2; Iowa, 1; Kansas, 1; Kentucky, 2; Montana, 1; Nebraska, 3; Ohio, 2; Tennessee, 1; Washington, 1; Wyoming, 1.

Days per year in operation (Table 36).—Only 9.8 per cent of the tonnage produced by underground-limestone enterprises was accounted for by enterprises which operated less than 250 days, indicating a high degree of continuity of operation for underground-limestone mines.

TABLE 36.—CONDENSED SUMMARY FOR UNDERGROUND-LIMESTONE ENTERPRISES CLASSIFIED ACCORDING TO NUMBER OF DAYS IN OPERATION IN 1929, FOR THE UNITED STATES

DAYS IN OPERATION	Number of enterprises	Number of underground mines	Wage earners (average for the year)	Wages	Limestone produced, tons (2,000 pounds)	Value of products
Underground limestone, total.....	149	55	3,353	\$3,945,394	11,108,317	\$9,397,751
100 to 149.....	3	3	79	89,194	167,266	166,710
150 to 199.....	4	4	125	150,293	313,870	310,346
200 to 249.....	6	7	192	246,744	603,467	427,328
250 to 299.....	14	14	1,316	1,637,722	5,093,239	4,084,497
300 and over.....	22	27	1,641	1,800,526	4,925,475	4,408,870

<sup>1</sup> See explanations preceding Table 35, p. 369.

Prevailing hours of labor (Table 37).—Approximately three-tenths of the wage earners employed in underground-limestone mines were reported by enterprises in which the prevailing hours per week were 48, and most of the remainder were reported by enterprises whose working hours were 54 or more.

TABLE 37.—CONDENSED SUMMARY FOR UNDERGROUND-LIMESTONE ENTERPRISES CLASSIFIED ACCORDING TO PREVAILING HOURS OF LABOR PER WEEK, FOR THE UNITED STATES: 1929

PREVAILING HOURS OF LABOR PER WEEK	Number of enterprises	Number of underground mines	Wage earners (average for the year)	Wages	Limestone produced, tons (2,000 pounds)	Value of products
Underground limestone, total.....	149	55	3,353	\$3,945,394	11,108,317	\$9,397,751
48.....	10	11	1,020	1,402,218	4,115,223	3,215,473
Over 48 but under 54.....	2	2	160	163,859	537,786	545,303
63 and over.....	2	2	2,173	2,379,317	6,405,308	5,636,975
54 and over but under 63.....	35	40				

<sup>1</sup> See explanations preceding Table 35, p. 369.

<sup>2</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

Days per week in operation (Table 38).—The 6-day week prevailed in enterprises which produced 81.2 per cent of the tonnage covered by this table. Enterprises which operated on the 7-day basis were reported from California, Illinois, Montana, and Pennsylvania.

TABLE 38.—CONDENSED SUMMARY FOR UNDERGROUND-LIMESTONE ENTERPRISES CLASSIFIED ACCORDING TO NUMBER OF DAYS IN OPERATION PER WEEK: 1929

DAYS PER WEEK	Number of enterprises	Number of underground mines	Wage earners (average for the year)	Wages	Limestone produced, tons (2,000 pounds)	Value of products
Underground limestone, total.....	149	55	3,353	\$3,945,394	11,108,317	\$9,397,751
Five.....	1	1	5	243	251,108	490,181
Five and one-half.....	5	5	243	251,108	490,181	497,003
Six.....	39	45	2,728	3,227,772	9,025,206	8,175,095
Seven.....	4	4	382	466,514	1,592,030	724,663

<sup>1</sup> See explanations preceding Table 35, p. 369.

<sup>2</sup> Combined to avoid disclosing, exactly or approximately, the data reported by an individual enterprise.

# MINES AND QUARRIES—SAND AND GRAVEL

## INTRODUCTION

**Scope of the report.**—This report presents the results of the Census Bureau's first canvass of the sand and gravel industry, made as a part of the census of mines and quarries for 1929. It includes statistics showing: Geographic distribution of the industry by States; kind and quantity of products; channels of distribution through which products left the producing enterprises; production by types of equipment and by source of products; type of ownership and size of operating enterprises; power equipment, by kind, number and capacity; time in operation for enterprises and length of working week for wage earners; number of persons engaged in the industry; and fuel consumption, by kind.

This industry is defined for census purposes as embracing those enterprises engaged principally in the production of prepared (washed and/or screened) sand and gravel of all kinds with the exception of glass sand and molding sand. The scope of the census was limited to exclude the following: (1) Enterprises whose output was less than 25,000 tons, many of which are purely temporary or are intermittent or transient in their operations; (2) producers of unprepared materials, most of which do not meet the requirements of "aggregate" material or of those special uses to which sand and gravel are put, but are used mainly for "fill" purposes; (3) noncommercial operations (i. e., plants operated by States, counties, municipalities, railroads, and public utilities), as the material produced by these is ordinarily used directly in construction of roads, bridges, dams, etc., and does not enter the commercial market; and (4) the production of glass sand and the production of molding sand, which are treated as separate industries in the census reports.

**Differences between the statistics published by the Bureau of the Census and by the United States Bureau of Mines.**—The Bureau of Mines statistics include data for all producers of sand and gravel. Limitations of the scope of its canvass with reference to size of operations, preparation of product, and production by noncommercial enterprises were not imposed by the Bureau of Mines, as was done in the canvass by the Census Bureau. Moreover, data for the production of glass sand and molding sand are included in the Bureau of Mines statistics but not in the census statistics for the sand and gravel industry except when a secondary product. The quantities and values of the production reported by the two bureaus, therefore, are not comparable.

## PRINCIPAL STATISTICS

**Summary for the United States (Table 1).**—The sand and gravel industry ranked sixth among the mineral-producing industries both in value of products and in number of wage earners employed. The value of products reported by the industry (\$102,311,914) amounted to 4.3 per cent of the total value of products (\$2,392,831,178) of all mining and quarrying industries in 1929; and the number of wage earners employed in sand and gravel enterprises (15,994) constituted 2 per cent of the total number of wage earners (806,418) in producing, mining, and quarrying enterprises in the United States. In terms of quantity of output (168,885,667 short tons), the industry produced more than twice the tonnage of the iron-ore industry (73,963,485 long tons) or of the anthracite industry (66,558,839 long tons), and approximately one-third of that of the bituminous-coal industry (537,442,495 short tons).



## MINES AND QUARRIES

TABLE 1.—SUMMARY FOR THE UNITED STATES: 1929

Number of enterprises <sup>1</sup> .....	957	Principal expenses, total <sup>3</sup> .....	\$54, 678, 519
Number of plants.....	1, 165	Salaries.....	\$10, 746, 244
Persons engaged, total.....	19, 915	Wages.....	\$22, 779, 984
Proprietors and firm members.....	249	Contract work.....	\$324, 718
Salaried officers and employees.....	3, 672	Supplies.....	\$11, 916, 672
Wage earners (average for the year) <sup>2</sup> .....	15, 994	Fuel.....	\$3, 989, 503
Power equipment, total horsepower.....	516, 745	Purchased electric energy.....	\$4, 921, 398
		Value of products.....	\$102, 311, 914
		Quantity of sand and gravel produced (tons, 2,000 pounds).....	168, 885, 667

<sup>1</sup> See GENERAL EXPLANATIONS—The Enterprise.<sup>2</sup> See GENERAL EXPLANATIONS—Persons Engaged.<sup>3</sup> See GENERAL EXPLANATIONS—Expenses.

Rank of States according to value of products (Table 2).—Enterprises falling within the scope of the census were reported from 47 States. The leading five States contributed 43 per cent of the total value

of products for the industry. Twenty-six States each reported the production of sand and gravel to the value of more than \$1,000,000.

TABLE 2.—LEADING STATES RANKED ACCORDING TO VALUE OF PRODUCTS: 1929

STATE	Number of enterprises <sup>1</sup>	Number of plants	Wage earners (average for the year) <sup>2</sup>	Quantity, tons (2,000 pounds)	Value of products	STATE	Number of enterprises <sup>1</sup>	Number of plants	Wage earners (average for the year) <sup>2</sup>	Quantity, tons (2,000 pounds)	Value of products
United States.....	957	1, 165	15, 994	168, 885, 667	\$102, 311, 914	Tennessee.....	20	22	495	3, 015, 829	\$2, 136, 524
New York.....	62	69	1, 330	16, 021, 674	11, 304, 630	Minnesota.....	25	29	243	2, 949, 880	2, 041, 467
Pennsylvania.....	46	54	1, 208	10, 732, 523	11, 002, 656	Louisiana.....	17	18	439	3, 355, 792	2, 031, 239
California.....	68	96	1, 153	14, 694, 771	7, 800, 188	Massachusetts.....	22	27	212	2, 496, 210	1, 816, 481
Michigan.....	57	68	1, 022	14, 547, 001	7, 080, 380	Kansas.....	27	35	236	3, 014, 377	1, 775, 014
Ohio.....	73	84	1, 103	12, 467, 448	6, 863, 579	Nebraska.....	18	40	142	2, 857, 963	1, 680, 139
Illinois.....	61	62	860	13, 949, 431	5, 576, 819	West Virginia.....	17	21	337	1, 387, 491	1, 613, 869
Texas.....	41	55	1, 354	8, 745, 442	5, 424, 864	Oklahoma.....	21	36	231	2, 581, 070	1, 579, 431
Indiana.....	53	71	738	9, 144, 037	4, 452, 720	Arkansas.....	16	16	286	2, 343, 037	1, 572, 050
Maryland.....	10	11	591	4, 193, 624	3, 780, 937	Kentucky.....	11	12	249	2, 426, 323	1, 347, 598
New Jersey.....	33	41	505	4, 603, 030	3, 696, 535	Alabama.....	10	13	304	2, 257, 166	1, 302, 754
Missouri.....	32	35	566	5, 495, 872	3, 515, 756	Oregon.....	18	21	141	1, 401, 407	1, 192, 687
Wisconsin.....	48	57	390	7, 112, 989	2, 762, 357	Washington.....	21	31	166	2, 439, 701	1, 096, 116
Iowa.....	38	39	394	3, 681, 033	2, 240, 638	Other States.....	87	102	1, 300	9, 599, 577	5, 764, 077

<sup>1</sup> See GENERAL EXPLANATIONS—The Enterprise.<sup>2</sup> See GENERAL EXPLANATIONS—Persons Engaged.

Summary of products, by kinds (Table 3).—This table does not include data for glass sand, 2,186,554 tons, valued at \$3,777,411; molding sand, 4,223,717 tons, valued at \$3,928,373; and other kinds of sand, 1,311,889 tons, valued at \$2,429,389, reported by enterprises engaged principally in the production of molding sand and glass sand. Of the total

quantity of products reported (168,885,667 tons), gravel contributed 52.9 per cent and sand 47.1 per cent. Sand and gravel for paving material constituted 45.7 per cent, for structural uses 41.1 per cent, and for railroad ballast 9.6 per cent of the total of prepared products. Over 90 per cent of the railroad ballast was gravel.

# SAND AND GRAVEL

TABLE 3.—QUANTITY AND VALUE OF SAND AND OF GRAVEL PRODUCED, BY KIND, BY STATES: 1929

STATE	AGGREGATE				SAND, WASHED AND (OR) SCREENED												SAND, NOT WASHED OR SCREENED		
	Tons (2,000 pounds)	Value	Total		Structural		Paving and road making		Engine		Railroad ballast		Cutting and grinding		Other <sup>1</sup>		Tons (2,000 pounds)	Value	
			Tons (2,000 pounds)	Value	Tons (2,000 pounds)	Value	Tons (2,000 pounds)	Value	Tons (2,000 pounds)	Value	Tons (2,000 pounds)	Value	Tons (2,000 pounds)	Value	Tons (2,000 pounds)	Value			
United States.....	168,885,667	\$102,311,914	78,517,372	\$42,271,800	36,965,977	\$20,094,788	35,263,228	\$18,449,139	1,531,254	\$955,024	1,404,131	\$391,138	\$29,442	\$20,887	2,523,340	\$1,560,824	1,043,870	\$330,961	
<i>Individual States</i>																			
Alabama.....	2,257,166	1,302,754	1,054,962	479,858	335,215	131,698	690,738	298,601	5,327	1,798					23,682	17,761			
Arizona.....	2,904,934	3,842,732	1,988,025	1,688,095	1,772,025	1,422,925	24,000	26,000											
Arkansas.....	2,243,637	1,572,056	566,207	340,383	212,342	205,292	350,577	205,292	1,438	862					1,850	1,285			
California.....	14,694,771	7,800,188	5,811,657	2,158,971	3,049,573	1,152,993	2,693,120	966,373	2,610	1,227	39,993	10,969			26,471	23,172	66,000	32,800	
Colorado.....	491,491	326,415	228,094	174,450	114,162	96,188	27,521	14,384	21,311	13,873									
Connecticut.....	451,872	383,201	283,947	238,896	196,709	148,657	84,875	71,041							2,368	9,198	270	80	
Florida.....	769,098	490,881	417,067	191,163	319,071	136,721	97,895	54,442											
Georgia.....	442,800	172,087	6,809,284	149,181	180,611	400,434	212,073	79,462	265	93					10,124	9,212	28,032	3,375	
Illinois.....	13,946,821	3,576,519	9,809,881	2,946,789	3,827,268	1,234,980	2,573,535	922,878	108,427	54,690	63,490	17,928			1,023,867	406,323	452,845	91,639	
Indiana.....	9,144,037	4,452,720	3,911,338	1,371,153	1,334,178	464,358	1,778,173	769,861	9,240	6,223	144,164	24,479			2,290,373	106,214	11,720	2,808	
Iowa.....	3,881,927	2,940,638	1,798,917	821,268	544,244	286,866	1,058,100	490,780	24,344	11,173	18,263	5,463			46,086	47,471			
Kansas.....	3,014,277	1,775,014	1,134,968	1,183,612	1,024,244	500,933	899,244	516,662	31,937	31,937	113,794	50,326			40,073	23,745			
Kentucky.....	2,429,233	1,847,398	850,232	438,423	300,198	238,488	364,073	187,763	55,169	1,064	1,067				12,173	10,998			
Louisiana.....	3,355,732	2,031,239	939,685	408,603	548,480	236,235	303,072	38,289	3,400	1,000	85,236	47,002			1,023	222			
Maryland.....	4,196,624	3,780,937	2,254,790	1,705,601	913,270	691,218	1,286,941	955,697	52,879	74,166					1,800	2,350	90,348	36,139	
Massachusetts.....	2,495,210	1,816,481	1,457,974	792,914	1,171,338	621,410	184,027	96,633	83,559	59,733					18,450	15,138	205	102	
Michigan.....	14,947,061	7,030,380	5,823,967	2,736,289	3,131,108	857,987	1,801,022	1,180,022	309,369	18,725	190,491	19,408			303,790	115,632	84,135	24,114	
Minnesota.....	2,949,880	2,041,467	1,824,246	563,623	743,888	280,985	518,696	262,969	61,522	18,128					1,170	1,009	32,427	10,756	
Missouri.....	5,465,872	3,516,756	2,744,234	1,865,183	1,378,710	903,795	1,024,542	767,238	29,010	18,128	29,217	13,479			68,588	49,942			
Montana.....	801,197	409,198	56,848	43,117	27,775	32,394	2,033	2,394			24,755	2,687			8,145	3,672			
Nebraska.....	2,857,963	1,680,139	711,425	286,844	574,080	226,572	114,415	62,315	7,800	2,940	8,380	3,500			6,800	2,117			
New Jersey.....	4,695,039	3,696,335	3,488,617	2,219,379	1,400,228	819,168	1,859,067	1,086,505	60,612	24,731					162,636	285,689			
New York.....	16,921,674	11,304,630	10,753,105	6,146,085	3,317,287	3,068,850	5,234,615	2,961,486	67,421	38,037	167	142			131,432	35,997	233,186	107,553	
North Carolina.....	482,691	349,923	135,869	64,832	15,000	7,000	39,491	12,423	51,316	37,899	50,062	7,510			4,440	2,490			
Ohio.....	12,457,448	6,862,579	5,046,927	2,903,618	2,211,457	1,406,547	2,573,716	1,393,491	66,864	35,652	190,420	25,493							
Oklahoma.....	2,381,070	1,579,431	1,322,278	890,662	426,316	288,394	788,894	489,854	33,165	19,727	326	165			11,800	4,360			
Oregon.....	1,401,407	1,102,057	903,246	413,514	360,701	307,110	123,098	97,526	1,731	1,731	1,209	558			9,985	6,389			
Pennsylvania.....	10,739,523	11,002,656	9,235,086	5,884,880	2,938,526	2,699,667	4,404,893	2,108,494	192,291	203,927					550,364	636,301			
Tennessee.....	3,015,829	2,136,824	1,154,963	807,396	370,995	254,271	464,509	331,059	45,352	33,502					42,300	31,860			
Texas.....	8,745,442	5,424,864	3,038,650	1,614,943	1,587,497	893,002	1,285,962	681,137	42,746	13,164	85,172	27,686			47,279	28,004	40,813	21,860	
Utah.....	598,045	254,998	159,536	81,766	92,422	47,911	47,036	26,163	20,078	3,692									
Virginia.....	1,079,217	678,562	540,248	228,339	149,298	70,613	312,611	118,706	60,891	22,836	78,139	29,070							
Washington.....	2,439,701	1,096,116	829,437	374,635	517,765	243,401	250,706	107,666	183,046	121,647					75	150	1,289	468	
West Virginia.....	1,837,491	1,613,869	852,759	742,796	266,503	254,271	365,085	355,311	4,018	3,254					3,194	4,313			
Wisconsin.....	7,112,969	2,762,357	3,459,235	1,205,512	1,705,870	578,659	1,456,085	593,594	56,750	13,132	209,243	72,027			31,287	38,100			
<i>Groups of States</i>																			
Idaho, Nevada, New Mexico, and Wyoming.....																			
Maine, New Hampshire, Rhode Island, and Vermont.....																			
Mississippi and South Carolina.....																			
North Dakota and South Dakota.....																			
	310,774	293,554	147,495	107,620	78,424	57,024	57,356	41,886	11,885	8,290					81,282	30,014			
	872,838	560,730	314,293	149,799	120,511	65,217	112,470	54,568											
	2,459,860	1,226,947	800,471	310,937	396,068	145,249	224,790	104,322	47,850	13,504	101,836	19,136			980	384			
	407,565	300,849	88,731	51,664	69,254	37,068	29,073	12,494	1,407	704					997	498			

<sup>1</sup> Molding sand, 269,886 tons, valued at \$293,214; glass sand, 81,304 tons, valued at \$102,094; blast, filter, and fire or furnace sand; and miscellaneous and unspecified products.

MINES AND QUARRIES

TABLE 3.—QUANTITY AND VALUE OF SAND AND OF GRAVEL PRODUCED, BY KIND, BY STATES, 1929—Continued

STATE	GRAVEL, WASHED AND (OR) SCREENED						GRAVEL, NOT WASHED OR SCREENED					
	Total		Paving and road making		Structural		Railroad ballast		Other <sup>1</sup>			
	Tons (2,000 pounds)	Value	Tons (2,000 pounds)	Value	Tons (2,000 pounds)	Value	Tons (2,000 pounds)	Value	Tons (2,000 pounds)	Value		
United States.....	86,952,181	\$85,958,115	40,325,063	\$29,017,454	31,108,302	\$22,776,186	14,451,904	\$6,461,165	1,096,312	\$708,370	2,342,244	\$751,088
<i>Individual States</i>												
Alabama.....	1,202,204	822,896	969,874	691,940	220,220	124,556	12,000	6,000	400			
Arizona.....	1,196,909	174,707	40,000	40,000	156,909	124,707						
Arkansas.....	1,648,164	1,160,596	833,144	634,226	323,343	258,822	471,677	272,448				
California.....	8,812,261	5,607,613	4,270,904	2,765,184	4,094,613	2,575,439	440,831	262,367	6,213	4,623	4,853	1,004
Colorado.....	212,507	195,641	30,905	28,489	122,002	107,152					63,584	35,324
Connecticut.....	167,656	154,325	42,625	39,050	121,781	112,775	3,250	2,500				
Florida.....	352,031	299,218	54,087	52,143	280,810	236,209	17,124	16,776				
Georgia.....	11,695	7,208	4,337	4,337	6,561	6,561			1,506			
Illinois.....	6,241,676	2,765,716	2,597,168	1,101,966	2,701,605	1,321,353	767,578	277,701	175,335	65,695	445,626	71,678
Indiana.....	5,558,669	3,077,609	2,294,495	1,450,239	977,130	599,042	2,196,730	957,913	120,314	70,415	2,320	1,168
Iowa.....	1,833,016	1,410,380	1,086,464	900,373	420,130	330,364	325,054	136,686	51,338	42,957		
Kansas.....	879,489	591,402	564,509	395,005	224,076	137,897	90,824	58,500				
Kentucky.....	1,576,901	889,173	742,968	493,856	537,659	277,530	259,879	92,282	25,557			
Louisiana.....	2,196,490	1,524,085	893,092	677,131	611,015	455,540	662,383	396,408	30,000	16,000	219,617	103,491
Maryland.....	1,848,486	2,041,197	1,101,432	1,278,110	746,856	767,285			198			
Massachusetts.....	1,033,087	1,020,841	1,061,346	134,014	700,858	818,127	80,883	68,700			4,944	2,624
Michigan.....	8,307,181	4,727,827	4,060,010	2,343,877	2,448,322	1,564,825	1,910,198	813,044	29,591	15,381	241,748	105,755
Minnesota.....	1,474,807	1,450,523	901,321	876,684	422,184	447,571	136,146	110,617	12,756	16,451	117,400	16,580
Missouri.....	2,669,958	1,637,823	1,165,661	878,314	811,588	508,352	644,883	208,073	57,446	43,054	82,590	13,750
Montana.....	667,893	359,713	42,620	35,516	210,390	138,963	408,808	181,149	6,075		76,956	6,368
Nebraska.....	2,146,538	1,883,295	1,620,807	702,180	995,855	595,394	101,201	64,423	28,965	20,298		
New Jersey.....	1,110,679	1,476,371	588,200	771,644	519,494	698,600	1,483	2,345	1,502	3,782	3,743	789
New York.....	5,874,156	5,034,860	2,605,993	2,229,054	3,232,266	2,773,809	33,057	19,780	11,930	12,250	99,227	16,332
North Carolina.....	326,822	285,091	204,430	190,158	45,822	46,389	79,020	47,604	9,083			
Ohio.....	7,304,612	3,973,299	2,936,667	1,749,586	1,786,103	1,159,186	2,666,326	1,061,346	27,516		115,909	20,662
Oklahoma.....	1,058,792	688,769	800,091	535,823	162,738	113,380	17,000	7,000	78,903	32,666		
Oregon.....	882,679	687,160	278,030	232,308	484,788	333,382	133,965	84,119	15,866	11,291	15,482	7,473
Pennsylvania.....	4,406,897	5,167,776	1,752,426	2,274,508	2,744,411	2,893,298						
Tennessee.....	1,860,866	1,329,128	1,175,784	782,169	479,269	407,108	98,813	39,911	106,000	100,000		
Texas.....	5,482,716	3,708,933	2,309,457	1,745,824	1,324,938	1,086,088	1,685,973	787,795	152,348	89,246	163,257	79,108
Utah.....	438,509	173,292	101,694	55,737	98,154	54,012	238,751	63,463				
Virginia.....	538,939	450,173	325,303	250,575	212,916	196,998			750	2,600		
Washington.....	1,563,975	713,605	567,978	280,947	743,181	312,628	147,123	31,695	105,743	88,395	45,000	7,990
West Virginia.....	1,034,732	871,073	746,519	612,684	239,760	207,175	48,453	51,214				
Wisconsin.....	3,292,775	1,459,820	1,855,545	792,066	1,304,749	561,597	251,056	78,828	61,424	27,329	360,979	97,025
<i>Groups of States</i>												
Idaho, Nevada, New Mexico, and Wyoming.....	163,279	155,994	54,734	48,910	105,545	107,024						
Maine, New Hampshire, Rhode Island, and Vermont.....	558,075	416,931	378,939	317,304	94,794	52,355	84,742	47,242				
Mississippi and South Carolina.....	1,486,086	828,759	673,632	401,640	339,665	221,598	472,730	265,561				
North Dakota and South Dakota.....	301,794	243,640	231,050	191,820	44,176	48,948	26,568	7,872			17,040	5,545

<sup>1</sup> Miscellaneous and unspecified products.

SAND AND GRAVEL

TABLE 4.—DISTRIBUTION OF SALES, BY MARKETING CHANNELS THROUGH WHICH SAND AND GRAVEL WERE SOLD BY PRODUCERS, FOR SELECTED STATES: 1929

MARKETING CHANNELS	QUANTITY OF SAND AND GRAVEL SOLD, TONS (2,000 POUNDS)							
	United States	New York	Michigan	California	Illinois	Ohio	Pennsylvania	Indiana
Total.....	108,761,960	16,927,996	14,880,032	14,441,354	13,895,985	12,412,149	11,085,838	9,200,047
Sales direct to nonaffiliated ready-mixed concrete companies, concrete block and tile manufacturers, and manufacturers of other concrete products.....	1,978,686	136,021	125,573	72,680	73,673	124,958	377,639	40,599
Sales and transfers to owned or affiliated ready-mixed concrete companies, concrete block and tile manufacturers, and manufacturers of other concrete products.....	2,124,560	65,825	19,904	328,663	37,431	40,500	489,021	62,185
Sales through subsidiary sales organizations conducted as distinct merchandising establishments.....	5,610,986	72,538	190,228	174,808	270,454	316,277	1,341,752	72,000
Sales to wholesalers and jobbers.....	1,342,224,400	10,434,763	4,172,330	2,669,106	3,794,932	672,167	2,269,857	1,051,000
Sales through agents, brokers, and other dealers on a commission basis.....	3,408,060	470,707	31,566	378,941	5,330	1,164,878	137,492	186,478
Sales direct:								
Government agencies (Federal, State, and local)—								
For general construction (buildings, etc.).....	3,382,057	113,698	514,839	24,251	331,655	56,983	162,457	92,641
For highways, streets, and bridges.....	12,025,809	541,383	1,802,541	603,755	483,933	1,577,506	283,124	954,316
Contractors for Government construction—								
For general construction (buildings, etc.).....	5,119,129	173,260	1,282,525	891,616	274,752	761,731	128,571	392,632
For highways, streets, and bridges.....	22,273,874	1,038,511	1,498,915	1,580,400	1,819,875	1,761,965	1,022,420	1,656,698
Contractors for private construction—								
For general construction (buildings, etc.).....	24,808,251	1,061,099	2,253,390	1,762,298	2,623,832	1,604,324	1,201,318	1,360,507
For railroad general construction, other than ballast.....	1,766,941	8,000	106,669	189,088	146,932	126,948	141,943	111,680
Other direct sales to Government agencies and contractors not segregated as to uses specified above.....	20,194,181	937,111	632,742	5,177,637	1,138,446	491,090	2,443,337	547,483
Railroads, for ballast.....	16,463,327	42,529	1,814,589	451,967	1,467,424	2,018,478	52,625	2,213,655
Public utilities, other than railroads.....	1,223,171	5,038	25,972	90,126	283	19,422	103,698	-----
Other direct sales.....	5,193,380	249,693	333,249	46,217	1,332,033	198,074	402,015	418,071
Tonnage for which "distribution of sales" was not reported.....	8,269,058	977,817	75,000	-----	100,000	281,328	468,513	62,500

MARKETING CHANNELS	QUANTITY OF SAND AND GRAVEL SOLD, TONS (2,000 POUNDS)							
	Texas	Wisconsin	Missouri	New Jersey	Maryland	Iowa	Louisiana	Kansas
Total.....	8,724,997	7,183,460	5,408,659	4,601,041	4,234,194	3,678,023	3,334,194	3,014,462
Sales direct to nonaffiliated ready-mixed concrete companies, concrete block and tile manufacturers, and manufacturers of other concrete products.....	45,003	83,555	76,272	24,402	49,806	35,768	35,475	150,865
Sales and transfers to owned or affiliated ready-mixed concrete companies, concrete block and tile manufacturers, and manufacturers of other concrete products.....	24,935	-----	150,922	2,350	-----	39,439	26,039	-----
Sales through subsidiary sales organizations conducted as distinct merchandising establishments.....	76,043	433,926	-----	361,378	59,200	112,630	-----	55,090
Sales to wholesalers and jobbers.....	890,479	1,339,912	121,753	1,098,194	74,172	312,089	510,532	232,808
Sales through agents, brokers, and other dealers on a commission basis.....	3,050	183,715	11,722	303,129	41,875	149,300	-----	12,155
Sales direct:								
Government agencies (Federal, State, and local)—								
For general construction (buildings, etc.).....	108,382	70,000	39,120	135,134	123,645	163,052	5,915	202,573
For highways, streets, and bridges.....	627,768	475,385	709,863	60,942	203,498	453,021	344,217	248,036
Contractors for Government construction—								
For general construction (buildings, etc.).....	135,400	-----	10,000	13,002	161,965	97,286	17,988	149,500
For highways, streets, and bridges.....	2,006,102	390,182	456,322	548,803	970,413	1,214,098	663,774	393,512
Contractors for private construction—								
For general construction (buildings, etc.).....	2,083,002	1,216,369	172,470	831,636	1,225,078	309,894	326,769	703,580
For railroad general construction, other than ballast.....	56,840	1,043	35,995	32,985	213,530	11,473	-----	-----
Other direct sales to Government agencies and contractors not segregated as to uses specified above.....	207,262	503,392	2,345,072	240,290	1,050,342	160,255	-----	220,598
Railroads, for ballast.....	1,732,043	782,046	740,231	18,673	-----	348,342	644,704	163,618
Public utilities, other than railroads.....	50,229	29,409	33,570	110,974	13,860	4,820	45,393	5,400
Other direct sales.....	30,747	452,076	153,266	81,132	34,820	90,778	498,060	105,990
Tonnage for which "distribution of sales" was not reported.....	678,119	1,222,450	352,081	738,017	-----	160,478	215,338	368,671

<sup>1</sup> Includes a combined total of 928,516 tons sold to wholesalers and jobbers, and through agents, brokers, and other dealers on a commission basis, for which separate figures are not available.

MINES AND QUARRIES

Type of operation (Table 5).—In a considerable number of cases the operations of enterprises embraced two or more types of sources from which sand and gravel were produced. This table gives figures for the principal combinations of types as well as for single types.

TABLE 5.—PRINCIPAL STATISTICS, BY TYPE OF OPERATION, FOR THE UNITED STATES: 1929

TYPE OF OPERATION	Number of enterprises	Number of plants	Wage earners (average for the year)	Wages	Cost of supplies	Cost of fuel	Cost of purchased electric energy	HORSEPOWER RATING OF POWER EQUIPMENT		Quantity tons (2,000 pounds)	Value of products
								Prime movers	Electric motors driven by purchased energy		
Total.....	957	1,165	15,994	\$22,779,984	\$11,916,072	\$3,989,503	\$4,921,398	231,097	285,648	168,885,667	\$102,311,914
Bank only.....	100	123	1,621	2,308,353	1,037,733	267,574	489,953	10,607	31,237	17,461,841	9,102,328
Bank and pit.....	177	234	3,263	5,068,772	2,162,210	754,692	1,046,350	43,278	64,719	38,051,909	21,960,649
Pit:											
Wet.....	203	258	2,696	3,715,109	1,940,477	485,373	1,436,233	27,180	73,363	30,920,020	17,091,832
Dry.....	129	144	1,895	2,640,837	1,202,931	432,439	513,324	20,558	35,082	20,619,691	10,970,319
Dry and wet.....	34	41	685	808,953	381,356	164,764	139,331	6,935	7,289	5,462,507	3,214,082
Pit and marine.....	68	90	1,210	1,642,110	1,578,379	319,068	418,285	19,520	24,499	12,186,899	10,486,274
Marine:											
River.....	104	220	3,407	4,654,782	2,386,965	1,118,200	530,339	65,037	33,971	30,140,191	21,850,747
Lake.....	17	18	363	544,836	214,408	132,472	96,510	9,978	5,372	4,329,171	2,077,070
Ocean.....	5	5	239	326,474	88,594	94,613	74,800	2,590	1,700	3,361,345	1,769,004
River and lake.....	7	8	263	470,288	458,350	175,915	9,553	8,925	1,050	2,365,708	1,497,917
Other.....	14	24	352	602,420	375,269	44,403	166,714	4,539	7,366	3,987,885	2,200,182

Type of excavating equipment (Tables 6 and 7).—Enterprises employing shovels only contributed slightly over one-fourth of the total, and those operating pump dredges only accounted for practically the same proportion. Approximately one-fourth of the total was reported by enterprises operating more than one type of equipment, represented principally by combinations of shovel and dragline, and of shovel and dredge.

TABLE 6.—PRINCIPAL STATISTICS, BY TYPE OF EXCAVATING EQUIPMENT USED, FOR THE UNITED STATES: 1929

TYPE OF EXCAVATING EQUIPMENT	Number of enterprises	Number of plants	Wage earners (average for the year)	Wages	Cost of supplies	Cost of fuel	Cost of purchased electric energy	HORSEPOWER RATING OF POWER EQUIPMENT		Quantity tons (2,000 pounds)	Value of products
								Prime movers	Electric motors driven by purchased energy		
Total.....	957	1,105	15,994	\$22,779,984	\$11,916,072	\$3,989,503	\$4,921,398	231,097	285,048	168,885,667	\$102,311,914
Shovel only.....	227	274	3,900	5,855,398	2,419,509	810,163	1,059,210	54,142	72,712	43,164,891	25,341,279
Shovel and dragline.....	73	91	1,512	2,046,207	1,017,399	415,394	328,847	15,672	18,500	16,090,041	7,687,988
Shovel and dredge.....	36	46	1,930	1,399,351	781,441	170,504	358,933	14,956	18,300	9,995,255	5,520,323
Dragline only.....	234	275	2,489	3,474,053	1,088,896	498,450	319,929	25,611	47,668	25,180,280	14,876,739
Dragline and dredge.....	37	59	672	906,161	565,664	204,948	329,153	9,359	18,365	7,378,911	4,606,471
Dredge:											
Pump.....	266	308	3,671	5,454,484	2,769,177	1,051,463	1,514,771	66,622	77,564	42,505,275	24,007,778
Ladder.....	58	63	1,687	2,446,981	2,179,286	643,412	256,270	33,708	14,972	16,470,548	12,718,440
Other.....	26	49	833	1,141,349	495,300	189,133	268,801	11,127	17,507	8,100,406	7,582,931

TABLE 7.—QUANTITY OF SAND AND GRAVEL EXCAVATED, BY TYPE OF EQUIPMENT USED, FOR SELECTED STATES: 1929<sup>1</sup>

STATE	TONS (2,000 POUNDS)								
	Total	Shovel only	Dredge, pump	Dragline only	Dredge, ladder	Shovel and dragline	Shovel and dredge	Dragline and dredge	Other
United States, total <sup>1</sup> .....	168,885,667	43,164,891	42,505,275	25,180,280	16,470,548	16,090,041	9,995,255	7,378,911	8,100,466
New York.....	16,921,674	9,148,232	4,762,515	760,832	154,856	413,246	1,270,802	( <sup>2</sup> )	397,691
California.....	14,694,771	9,065,246	( <sup>2</sup> )	2,307,697	( <sup>2</sup> )	1,847,793	( <sup>2</sup> )	( <sup>2</sup> )	474,035
Michigan.....	14,547,061	4,338,054	1,112,212	598,577	3,016,437	2,448,362	2,623,068	( <sup>2</sup> )	415,351
Illinois.....	13,049,431	( <sup>2</sup> )	5,371,240	1,800,794	( <sup>2</sup> )	4,962,864	( <sup>2</sup> )	1,164,537	649,996
Ohio.....	12,467,448	2,470,123	3,069,182	2,057,253	220,517	501,133	3,074,208	( <sup>2</sup> )	485,832
Pennsylvania.....	10,782,523	1,740,717	3,454,075	531,731	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	1,078,400
Indiana.....	9,144,037	1,287,780	3,068,647	3,100,772	( <sup>2</sup> )	518,529	( <sup>2</sup> )	( <sup>2</sup> )	1,078,400
Texas.....	8,745,442	526,036	1,939,662	2,052,966	( <sup>2</sup> )	1,599,802	( <sup>2</sup> )	940,799	1,086,177
Wisconsin.....	7,112,989	3,656,862	1,148,739	1,198,734	( <sup>2</sup> )	844,717	263,037	( <sup>2</sup> )	( <sup>2</sup> )
Missouri.....	5,495,872	719,156	3,683,145	807,420	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	280,121	( <sup>2</sup> )

<sup>1</sup> For some States, in order to avoid disclosure of data for individual enterprises, the figures for certain groups have been combined with those for "Other." (See footnote 2.) The total, however, for each group is correct as given.  
<sup>2</sup> Included in "Other" to avoid disclosure of data for individual enterprises.  
<sup>3</sup> Includes data for ladder dredges.  
<sup>4</sup> Included with data for pump dredges.

SAND AND GRAVEL

TABLE 7.—QUANTITY OF SAND AND GRAVEL EXCAVATED, BY TYPE OF EQUIPMENT USED, FOR SELECTED STATES: 1929—Continued

STATE	TONS (2,000 POUNDS)								
	Total	Shovel only	Dredge,pump	Dragline only	Dredge, ladder	Shovel and dragline	Shovel and dredge	Dragline and dredge	Other
New Jersey.....	4,003,039	1,042,621	566,227	(?)	958,645	(?)	1,131,742	(?)	873,804
Maryland.....	4,193,024	158,936	343,436	343,436	3,091,252				
Iowa.....	3,681,933	(?)	1,900,102	1,164,340		180,598	(?)	175,946	260,947
Louisiana.....	8,355,792	(?)	2,114,720		(?)			1,143,207	97,775
Tennessee.....	3,015,829	281,142	1,205,135	(?)	824,147	(?)	280,547		434,858
Kansas.....	3,014,377		2,632,704						381,673
Minnesota.....	2,949,880	1,243,381	(?)	678,303		482,247	(?)	(?)	545,940
Nebraska.....	2,557,963		1,263,963					1,489,000	105,000
Oklahoma.....	2,581,070	(?)	1,679,129	(?)				396,475	505,466
Massachusetts.....	2,496,210	2,009,473		111,936		374,801			
Washington.....	2,439,701	1,049,774	329,923	825,778	(?)		(?)		234,226
Kentucky.....	2,426,823	(?)	360,971	(?)	1,010,498	(?)		(?)	1,048,854
Arkansas.....	2,343,037	365,020	834,343	836,558				(?)	307,116
Alabama.....	2,257,166	(?)	1,189,395	(?)					1,067,771
West Virginia.....	1,887,491	(?)	182,054	(?)	1,555,393				150,044
Oregon.....	1,401,407	(?)	388,011	402,231	308,753	(?)			301,782

<sup>1</sup> Included in "Other" to avoid disclosure of data for individual enterprises.

Type of excavating equipment for 1-plant enterprises.—The statistics given in Table 8 permit comparisons, by four major types of excavating equipment employed, for enterprises classified according to quantity of products. Data for enterprises operating more

than one of the types shown, or for reports covering more than one producing bank, pit, or dredging operation, are not included in the figures given, in order that the results may be of greatest value for comparative and analytical purposes.

TABLE 8.—SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO TYPE OF EXCAVATING EQUIPMENT AND QUANTITY OF PRODUCT, FOR THE UNITED STATES: 1929

[This table covers only those enterprises each of which operated a single plant in which but one type of excavating equipment was used]

TYPE OF EQUIPMENT AND QUANTITY OF PRODUCT IN TONS (2,000 POUNDS)	Number of enterprises	Wage earners (average for the year)	Wages	Cost of supplies	Cost of fuel	Cost of purchased electric energy	HORSEPOWER RATING OF POWER EQUIPMENT		Quantity, tons (2,000 pounds)	Value of products	AVERAGE PER TON			Tons per wage earner
							Prime movers	Electric motors driven by purchased energy			Wages	Cost of supplies, fuel, and purchased electric energy	Value of products	
Shovel, total.....	207	3,225	\$4,861,527	\$1,054,519	\$667,176	\$874,403	47,075	58,010	33,775,867	\$21,044,138	\$0.143	\$0.103	\$0.62	10,473
25,000 to 49,999.....	50	287	396,334	153,116	66,142	70,221	3,857	5,525	1,765,009	1,330,663	.224	.163	.75	5,945
50,000 to 99,999.....	61	588	775,023	304,712	123,796	159,564	7,793	11,535	4,398,271	3,253,276	.176	.148	.74	7,475
100,000 to 199,999.....	56	859	1,270,901	526,052	182,613	212,456	13,165	13,723	7,927,483	4,749,610	.160	.116	.60	9,261
200,000 to 499,999.....	31	767	1,151,948	647,112	133,150	230,151	12,300	10,869	9,601,869	5,078,968	.119	.095	.53	12,519
500,000 to 999,999.....	7	1												
1,000,000 to 1,999,999.....	1	1,717	1,267,316	369,497	156,470	196,031	10,500	10,053	10,085,635	6,631,621	.125	.071	.66	14,066
2,000,000 and over.....	1													
Dragline, total.....	201	1,581	2,630,218	1,227,682	360,080	643,561	10,630	38,303	18,785,021	11,077,461	.140	.120	.59	9,987
25,000 to 49,999.....	63	290	426,963	148,307	59,046	93,481	2,731	6,613	2,240,048	1,724,843	.191	.134	.77	7,495
50,000 to 99,999.....	71	579	827,877	459,202	128,213	188,860	7,256	11,502	5,015,774	3,395,533	.165	.154	.68	8,063
100,000 to 199,999.....	48	711	910,648	391,958	136,016	230,004	6,640	12,793	6,564,399	3,880,048	.138	.115	.59	9,233
200,000 to 499,999.....	19	292	464,730	228,185	65,005	131,207	3,003	7,395	4,064,500	2,077,037	.093	.085	.42	17,002
Pump dredge, total <sup>1</sup> .....	235	3,202	4,435,603	2,038,569	900,623	1,251,200	52,488	64,436	35,641,472	19,994,991	.124	.118	.56	11,131
25,000 to 49,999.....	54	284	331,870	110,246	67,680	96,803	5,211	6,049	2,038,301	1,228,751	.162	.135	.60	7,177
50,000 to 99,999.....	74	604	893,282	383,316	131,296	256,522	8,700	14,027	5,631,328	3,417,260	.159	.139	.62	9,158
100,000 to 199,999.....	54	648	882,954	473,297	139,455	346,298	10,785	18,272	7,558,454	4,113,836	.116	.126	.54	11,604
200,000 to 499,999.....	9	1,015	1,287,769	802,217	311,392	422,571	17,524	20,730	12,121,810	6,468,380	.106	.126	.53	11,943
500,000 to 999,999.....	3	1												
2,000,000 and over.....	1	1,651	1,060,728	269,793	263,697	127,066	10,268	5,368	8,391,679	4,771,764	.127	.078	.57	12,800
Ladder dredge, total <sup>1</sup> .....	43	1,265	1,867,311	1,248,305	540,933	109,250	25,673	12,167	12,031,209	9,514,512	.144	.154	.74	10,222
25,000 to 49,999.....	7	43	47,616	16,093	14,426	764	1,435	465	276,072	163,042	.172	.113	.59	6,420
50,000 to 99,999.....	14	138	170,026	71,638	53,148	10,637	2,670	1,000	958,796	713,703	.187	.141	.74	6,943
100,000 to 199,999.....	10	187	205,306	124,759	62,584	13,071	4,219	796	1,411,403	1,100,846	.209	.142	.82	7,543
200,000 to 499,999.....	11	318	499,385	324,385	190,516	59,340	9,919	3,776	3,631,460	2,084,404	.139	.163	.58	11,262
500,000 to 999,999.....	3	244	383,769	276,006	106,460	15,000	4,105	1,030	2,445,070	2,826,997	.157	.163	1.16	10,021
1,000,000 to 1,999,999.....	2	1												
2,000,000 and over.....	1	1,335	461,809	435,418	104,799	100,448	3,425	5,100	4,258,408	2,565,460	.108	.150	.60	12,712

<sup>1</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

<sup>2</sup> Not including data for 1 single-plant enterprise.

<sup>3</sup> Not including data for 6 single-plant enterprises whose production amounted to 1,550,652 tons.

TYPE OF OWNERSHIP

As shown in Table 9, sand and gravel enterprises under corporate ownership constituted 77.1 per cent of all enterprises, employed 88.5 per cent of the total number of wage earners, and reported 89.6 per cent of the total value of products.

TABLE 9.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO TYPE OF OWNERSHIP, FOR SELECTED STATES: 1929

STATE AND TYPE OF OWNERSHIP	Number of enterprises	Number of plants	Wage earners (average for the year)	Value of products	STATE AND TYPE OF OWNERSHIP	Number of enterprises	Number of plants	Wage earners (average for the year)	Value of products
United States, total.....	957	1,165	15,904	\$102,311,914	Maryland, total.....	10	11	591	\$3,780,937
Corporate.....	738	913	14,147	91,673,784	Corporate <sup>1</sup> .....	10	11	591	3,780,937
Other <sup>1</sup> .....	219	252	1,847	10,638,130	New Jersey, total.....	33	41	505	8,606,535
New York, total.....	62	69	1,330	11,304,630	Corporate.....	26	32	438	3,308,037
Corporate.....	53	58	1,287	10,977,218	Other <sup>1</sup> .....	7	9	67	388,498
Other <sup>1</sup> .....	9	11	43	327,412	Missouri, total.....	32	35	566	3,516,760
Pennsylvania, total.....	46	54	1,208	11,002,656	Corporate.....	26	28	507	3,234,581
Corporate.....	42	50	1,179	10,839,665	Other <sup>1</sup> .....	6	7	59	282,175
Other <sup>1</sup> .....	4	4	29	162,991	Wisconsin, total.....	48	57	390	2,762,357
California, total.....	68	96	1,153	7,800,183	Corporate.....	40	49	345	2,460,562
Corporate.....	44	71	974	6,455,693	Other <sup>1</sup> .....	8	8	45	301,795
Other <sup>1</sup> .....	24	25	179	1,344,495	Iowa, total.....	38	39	394	2,240,638
Michigan, total.....	57	68	1,022	7,030,380	Corporate.....	20	27	330	1,034,842
Corporate.....	41	51	918	6,280,294	Other <sup>1</sup> .....	12	12	64	305,790
Other <sup>1</sup> .....	16	17	104	750,086	Tennessee, total.....	20	22	495	2,136,524
Ohio, total.....	73	84	1,103	6,863,579	Corporate.....	13	13	405	1,656,152
Corporate.....	60	68	1,025	6,296,311	Other <sup>1</sup> .....	7	9	90	480,372
Other <sup>1</sup> .....	13	16	78	566,768	Minnesota, total.....	25	29	243	2,041,467
Illinois, total.....	61	62	800	5,576,319	Corporate <sup>1</sup> .....	25	29	243	2,041,467
Corporate.....	52	53	700	5,302,295	Louisiana, total.....	17	18	439	2,031,239
Other <sup>1</sup> .....	9	9	70	274,524	Corporate.....	14	15	405	1,902,549
Texas, total.....	41	55	1,354	5,424,864	Other <sup>1</sup> .....	3	3	34	128,690
Corporate.....	29	43	1,164	4,793,288					
Other <sup>1</sup> .....	12	12	190	631,576					
Indiana, total.....	53	71	733	4,452,720					
Corporate.....	41	48	621	3,677,074					
Other <sup>1</sup> .....	17	23	117	775,646					

<sup>1</sup> Partnerships, enterprises operated by individuals, etc.  
<sup>2</sup> Includes 2 other types of ownership; combined in order to avoid disclosing data for individual enterprises.

SCALE OF OPERATION

Enterprises classified according to value of products (Table 10).—Comparatively small enterprises pre-

dominated in the sand and gravel industry, more than 93 per cent having been in classes whose output was valued at less than \$250,000.

TABLE 10.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO VALUE OF PRODUCTS, FOR SELECTED STATES: 1929

STATE AND VALUE OF PRODUCTS PER ENTERPRISE	Number of enterprises	Number of plants	Wage earners (average for the year)	Wages	Value of products	STATE AND VALUE OF PRODUCTS PER ENTERPRISE	Number of enterprises	Number of plants	Wage earners (average for the year)	Wages	Value of products
United States, total.....	957	1,165	15,904	\$22,770,984	\$102,311,914	Pennsylvania, total.....	46	54	1,208	\$1,821,815	\$11,002,656
Less than \$20,000.....	71	76	295	346,297	1,093,090	Less than \$20,000.....	2	2			
\$20,000 to \$49,999.....	352	388	2,322	3,165,268	12,026,652	\$20,000 to \$49,999.....	14	14	1104	139,351	523,828
\$50,000 to \$99,999.....	263	311	3,210	4,455,648	18,546,320	\$50,000 to \$99,999.....	15	15	197	206,267	1,066,711
\$100,000 to \$249,999.....	206	264	5,210	7,472,170	30,943,200	\$100,000 to \$249,999.....	10	12	1467	580,249	1,724,010
\$250,000 to \$499,999.....	42	73	2,220	3,041,719	14,263,305	\$250,000 to \$499,999.....	1	1			
\$500,000 to \$999,999.....	15	23	1,514	2,207,209	10,753,091	\$500,000 to \$999,999.....	1	1			
\$1,000,000 to \$2,499,999.....	6	24			14,686,097	\$1,000,000 to \$2,499,999.....	2	4	1440	805,948	7,688,107
\$2,500,000 to \$5,000,000.....	2	6	1,223	2,091,677		\$2,500,000 to \$5,000,000.....	1	5			
New York, total.....	62	69	1,330	2,437,299	11,304,630	California, total.....	68	96	1,153	1,843,622	7,800,183
Less than \$20,000.....	7	8	23	35,467	87,329	Less than \$20,000.....	2	2			
\$20,000 to \$49,999.....	18	19	94	153,410	580,849	\$20,000 to \$49,999.....	23	25	1117	189,454	856,229
\$50,000 to \$99,999.....	17	19	134	220,323	1,133,319	\$50,000 to \$99,999.....	24	25	240	401,806	1,712,576
\$100,000 to \$249,999.....	12	14	190	355,392	1,870,792	\$100,000 to \$249,999.....	15	19	371	569,363	2,395,700
\$250,000 to \$499,999.....	2	2	1333	689,728	2,510,493	\$250,000 to \$499,999.....	3	3			
\$500,000 to \$999,999.....	3	4				\$500,000 to \$999,999.....	1	17	1425	682,999	2,835,593
\$1,000,000 to \$2,499,999.....	2	2				\$1,000,000 to \$2,499,999.....	1				
\$2,500,000 to \$5,000,000.....	1	1	1550	977,979	5,121,848						

<sup>1</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

TABLE 10.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO VALUE OF PRODUCTS, FOR SELECTED STATES: 1929—Continued

STATE AND VALUE OF PRODUCTS PER ENTERPRISE	Number of enterprises	Number of plants	Wage earners (average for the year)	Wages	Value of products	STATE AND VALUE OF PRODUCTS PER ENTERPRISE	Number of enterprises	Number of plants	Wage earners (average for the year)	Wages	Value of products
Michigan, total.....	57	68	1,022	\$1,468,293	\$7,030,330	Illinois, total.....	61	62	860	\$1,899,045	\$5,576,819
Less than \$20,000.....	5	5	21	28,666	89,725	Less than \$20,000.....	5	5	20	25,527	73,194
\$20,000 to \$49,999.....	17	18	115	194,380	569,098	\$20,000 to \$49,999.....	22	22	173	232,684	762,947
\$50,000 to \$99,999.....	18	23	155	241,871	1,188,213	\$50,000 to \$99,999.....	10	10	92	166,530	648,706
\$100,000 to \$249,999.....	10	10	186	294,719	1,484,606	\$100,000 to \$249,999.....	20	21	404	663,248	2,903,619
\$250,000 to \$499,999.....	4	7	1,545	708,651	3,698,738	\$250,000 to \$499,999.....	4	4	171	311,050	1,188,353
\$500,000 to \$999,999.....	3	5				Texas, total.....	41	55	1,354	1,458,700	5,424,864
Ohio, total.....	73	84	1,103	1,787,498	6,863,579	Less than \$20,000.....	2	2	1,158	134,620	415,050
Less than \$20,000.....	6	6	29	33,479	102,064	\$20,000 to \$49,999.....	11	11			
\$20,000 to \$49,999.....	30	33	180	289,336	1,034,629	\$50,000 to \$99,999.....	14	17	290	336,284	1,200,005
\$50,000 to \$99,999.....	15	19	154	278,003	1,008,914	\$100,000 to \$249,999.....	8	12			
\$100,000 to \$249,999.....	16	19	374	604,387	2,206,457	\$250,000 to \$499,999.....	4	6	2	7	
\$250,000 to \$499,999.....	5	6	1,336	577,203	2,451,515	\$500,000 to \$999,999.....	2	7			
\$500,000 to \$999,999.....	1	1									

1 Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

POWER

Power equipment in use (Table 11).—The data for electric motors driven by energy generated in the reporting enterprises are not included in the "aggregate horsepower," as shown in this and other tables, since such inclusion would result in duplication of the figures for the horsepower of the prime movers used in driving the generators. Practically all the prime-mover power was used directly, the generator capacity being equivalent to only 7.4 per cent of the total rating of stationary prime movers reported.

Table 11 gives also a classification of motive power according to the nature of its use, whether stationary or mobile. The latter class embraces the power equipment of shovels, tractors, dredges, and other machinery and equipment moved from place to place in the course of operations, as contrasted with fixed installations, such as central power plants, screening and washing equipment, etc.

The number and horsepower of the several types of prime movers and of the electric motors used by sand and gravel mining enterprises in 1929 are given, by States, in Table 20.

TABLE 11.—POWER EQUIPMENT, STATIONARY AND MOBILE—NUMBER AND RATED CAPACITY OF PRIME MOVERS, MOTORS, AND GENERATORS, FOR THE UNITED STATES: 1929

TYPE	Total	Stationary	Mobile	TYPE	Total	Stationary	Mobile
Prime movers and electric motors driven by purchased energy, aggregate horsepower.....	516,745	321,312	194,933	Prime movers, etc.—Con.			
Prime movers, total horsepower.....	231,097	68,549	162,548	Horsepower rating of inactive prime movers, included above.....	3,965	723	3,242
Steam engines—				Electric motors driven by purchased energy—	7,732	7,231	501
Number.....	1,653	581	1,072	Number.....	285,648	253,263	32,385
Horsepower.....	158,150	39,563	118,587	Electric motors driven by energy generated by enterprises reporting:			
Steam turbines—				Number.....	212	212	
Number.....	10	10		Horsepower.....	6,591	6,591	
Horsepower.....	740	740		Electric generators:			
Internal-combustion engines—				Number.....	42	42	
Number.....	1,125	454	671	Kilowatts.....	3,828	3,828	
Horsepower.....	72,207	28,246	43,961				



MINES AND QUARRIES

TABLE 12.—NUMBER AND RATED CAPACITY OF PRIME MOVERS, MOTORS, AND GENERATORS, FOR ENTERPRISES CLASSIFIED ACCORDING TO TOTAL RATING OF POWER EQUIPMENT: 1929

TYPE	Total, all sizes	RATING OF POWER EQUIPMENT FOR ENTERPRISES INDIVIDUALLY REPORTING TOTAL HORSEPOWER OF—						
		Less than 100	100 to 249	250 to 499	500 to 999	1,000 to 2,499	2,500 to 4,999	5,000 or more
Number of enterprises reporting power equipment.....	957	74	279	293	189	105	12	5
Prime movers and electric motors driven by purchased energy, aggregate horsepower.....	516,745	5,163	48,443	101,714	131,812	151,827	37,127	40,659
Prime movers, total horsepower.....	231,097	2,831	20,738	43,117	60,142	68,861	22,360	13,048
Steam engines—								
Number.....	1,853	41	177	351	412	465	122	85
Horsepower.....	158,150	1,470	9,085	23,639	38,459	53,837	19,690	12,020
Steam turbines—								
Number.....	10			1	5	4		
Horsepower.....	740			5	585	150		
Internal-combustion engines—								
Number.....	1,125	46	255	322	287	164	37	14
Horsepower.....	72,207	1,361	11,703	19,473	21,098	14,874	2,670	1,028
Horsepower rating of inactive prime movers, included above.....	3,965	50	356	819	1,442	698		600
Electric motors driven by purchased energy—								
Number.....	7,732	147	970	1,823	1,924	1,963	332	573
Horsepower.....	285,648	2,332	27,705	58,597	71,670	82,966	14,767	27,611
Electric motors driven by energy generated by enterprises reporting:								
Number.....	212	3	21	52	80	56		
Horsepower.....	6,591	20	440	1,548	2,802	1,781		
Electric generators:								
Number.....	42	1	7	11	15	8		
Kilowatts.....	3,828	40	255	1,047	1,471	1,016		

TIME IN OPERATION

Days per week in operation (Table 13).—The 6-day week prevailed in 85.1 per cent of the enterprises. These reported 85.6 per cent of the total number of wage earners and 88.2 per cent of the total value of products. The number of wage earners given in Tables 13 and 14 is the total of those reported by individual enterprises for employment during normal

operations. As each enterprise reported for a representative or normal date of its own selection, the total does not represent the number employed on any particular date, and it differs considerably from the number of wage earners (average for the year) as given in other tables. (See "GENERAL EXPLANATIONS—Persons engaged," for method of calculating the average number.)

TABLE 13.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO NUMBER OF DAYS IN OPERATION PER WEEK, FOR THE UNITED STATES: 1929

DAYS PER WEEK	Number of enterprises	Number of plants	Wage earners as reported for representative day	Wages	Value of products	DAYS PER WEEK	Number of enterprises	Number of plants	Wage earners as reported for representative day	Wages	Value of products
Total.....	957	1,165	18,885	\$22,770,984	\$102,311,914	Five and one-half.....	80	91	1,015	\$1,246,088	\$4,798,907
Four.....	8	9	151	247,296	831,401	Six.....	814	998	16,171	19,702,610	90,245,773
Five.....	20	22	269	298,180	919,373	Six and one-half.....	1	1	1		
						Seven.....	34	44	1,279	1,285,260	5,516,400

<sup>1</sup> This total differs considerably from that for "Wage earners (average for the year)," 15,094, given in other tables of this report.  
<sup>2</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

Days in operation during year (Table 14).—Only 36.7 per cent of the total value of products was contributed by 269 enterprises (332 plants) which operated continuously throughout the year. Enterprises operating from 200 to 299 days reported 50.3 per cent of the total.

TABLE 14.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO NUMBER OF DAYS IN OPERATION IN 1929, FOR THE UNITED STATES

DAYS IN OPERATION	Number of enterprises	Number of plants	Wage earners as reported for representative day	Wages	Value of products	DAYS IN OPERATION	Number of enterprises	Number of plants	Wage earners as reported for representative day	Wages	Value of products
Total.....	957	1,165	18,885	\$22,779,984	\$102,311,914	100 to 149.....	42	43	675	\$491,390	\$2,330,976
Less than 50.....	1	1	109	35,920	222,481	150 to 199.....	156	179	2,421	2,702,701	10,439,492
50 to 74.....	5	6	174	60,682	325,984	200 to 249.....	308	390	5,527	6,681,257	29,005,809
75 to 99.....	9	10				250 to 299.....	167	204	3,105	4,180,889	22,443,876
						300 and over.....	269	332	6,874	8,618,145	37,543,296

<sup>1</sup> This total differs considerably from that for "Wage earners (average for the year)," 15,994, given in other tables of this report.  
<sup>2</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

PERSONS ENGAGED

Persons engaged, by class and sex (Table 15).—Of the total number of persons employed in sand and

gravel mining enterprises in 1929, only 573, or 2.9 per cent, were females. Salaried officers and employees numbered 3,672, or 18.4 per cent of the total.

TABLE 15.—PERSONS ENGAGED, BY SEX, FOR THE UNITED STATES: 1929

CLASS	Total	Male	Female	CLASS	Total	Male	Female
Total (all classes).....	10,915	10,342	573	Principal salaried officers of corporations.....	968	914	54
Proprietors and firm members.....	249	241	8	Other salaried officers and employees.....	2,704	2,217	487
				Wage earners (average for the year).....	15,994	15,970	24

Size of enterprises according to number of wage earners (Table 16).—This table classifies enterprises according to the numbers of wage earners employed. Only 49 enterprises, or 5.1 per cent, were in classes having more than 50 wage earners, and these employed 30.2 per cent of the total number. More than one-

half of all enterprises were in the class employing from 6 to 20 wage earners. These enterprises employed approximately one-third of the total number of wage earners and contributed over one-third of the total value of products.

TABLE 16.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO NUMBER OF WAGE EARNERS, FOR THE UNITED STATES AND FOR SELECTED STATES: 1929

STATE AND NUMBER OF WAGE EARNERS PER ENTERPRISE	Number of enterprises	Number of plants	Wage earners (average for the year) <sup>2</sup>	Wages	Value of products	STATE AND NUMBER OF WAGE EARNERS PER ENTERPRISE	Number of enterprises	Number of plants	Wage earners (average for the year) <sup>2</sup>	Wages	Value of products
United States, total.....	957	1,165	15,994	\$22,779,984	\$102,311,914	Pennsylvania, total.....	46	54	1,208	\$1,821,815	\$11,002,656
1 to 5.....	263	292	976	1,594,404	8,394,483	1 to 5.....	10	10	42	70,474	345,952
6 to 20.....	485	561	5,216	7,827,143	34,897,587	6 to 20.....	21	21	249	360,300	1,397,429
21 to 50.....	160	214	4,964	6,665,381	28,543,520	21 to 50.....	10	12	324	475,601	2,715,240
51 to 100.....	31	49	2,175	3,021,472	11,283,530	51 to 100.....	1	1	1		
101 to 250.....	17	48	2,863	3,671,584	19,192,814	101 to 250.....	4	10	593	915,440	6,574,085
251 to 500.....	1	1									
Texas, total.....	41	55	1,354	1,458,700	5,424,804	California, total.....	68	96	1,153	1,843,622	7,800,188
1 to 5.....	2	2	200	220,922	939,987	1 to 5.....	20	22	73	119,560	698,005
6 to 20.....	17	18	470	509,101	1,778,505	6 to 20.....	34	35	351	584,207	2,529,289
21 to 50.....	16	22	684	728,677	2,706,392	21 to 50.....	11	15	343	518,955	2,134,963
51 to 100.....	3	5				51 to 100.....	2	7	386	620,900	2,487,931
101 to 250.....	3	8				101 to 250.....	1	17			
New York, total.....	62	69	1,330	2,437,299	11,304,630	Ohio, total.....	73	84	1,103	1,787,498	6,863,579
1 to 5.....	23	25	81	150,223	803,163	1 to 5.....	21	22	86	158,188	654,215
6 to 20.....	27	31	257	427,379	2,206,927	6 to 20.....	36	42	352	581,155	2,375,430
21 to 50.....	6	6	179	298,846	1,208,520	21 to 50.....	13	16	436	687,755	2,697,714
51 to 100.....	4	5				51 to 100.....	2	3	229	360,400	1,136,220
101 to 250.....	1	1	813	1,560,851	7,086,020	101 to 250.....	1	1			

<sup>1</sup> See GENERAL EXPLANATIONS—The Enterprise.  
<sup>2</sup> See GENERAL EXPLANATIONS—Persons Engaged.  
<sup>3</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

MINES AND QUARRIES

TABLE 16.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO NUMBER OF WAGE EARNERS, FOR THE UNITED STATES AND FOR SELECTED STATES: 1929—Continued

STATE AND NUMBER OF WAGE EARNERS PER ENTERPRISE	Number of enterprises	Number of plants	Wage earners (average for the year) <sup>1</sup>	Wages	Value of products	STATE AND NUMBER OF WAGE EARNERS PER ENTERPRISE	Number of enterprises	Number of plants	Wage earners (average for the year) <sup>2</sup>	Wages	Value of products
Michigan, total.....	57	68	1,022	\$1,468,293	\$7,030,380	Maryland, total.....	10	11	591	\$690,352	\$3,780,937
1 to 5.....	16	16	63	101,217	531,840	1 to 5.....	1	1	} 89	102,696	474,338
6 to 20.....	30	36	305	494,766	2,146,303	6 to 20.....	3	3			
21 to 50.....	6	6	184	254,146	1,322,815	21 to 50.....	2	3			
51 to 100.....	2	3	} 470	618,164	3,029,416	101 to 250.....	4	4			
101 to 250.....	3	7									
Illinois, total.....	61	62	800	1,399,045	5,576,819	Missouri, total.....	32	35	566	729,340	3,516,756
1 to 5.....	11	11	41	59,721	227,245	1 to 5.....	6	7	21	27,390	168,147
6 to 20.....	39	40	442	712,733	2,972,724	6 to 20.....	10	17	184	243,892	1,319,745
21 to 50.....	10	10	} 377	626,591	2,376,850	21 to 50.....	9	10	} 361	458,058	2,028,864
51 to 100.....	1	1									
Indiana, total.....	58	71	738	984,331	4,452,720	New Jersey, total.....	33	41	505	793,788	3,696,535
1 to 5.....	17	21	59	85,889	573,224	1 to 5.....	8	8	26	45,765	199,241
6 to 20.....	31	36	325	474,493	2,019,082	6 to 20.....	17	21	157	250,496	2,104,224
21 to 50.....	8	10	} 354	424,039	1,860,434	21 to 50.....	6	7	} 322	497,527	1,393,070
51 to 100.....	2	4									

<sup>1</sup> See GENERAL EXPLANATIONS—The Enterprise.

<sup>2</sup> See GENERAL EXPLANATIONS—Persons Engaged.

<sup>3</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

Prevailing hours of labor (Table 17).—Enterprises in which the prevailing hours per week for wage earners were 54 or more employed 13,555 wage earners, or 84.8 per cent of the total, and contributed 84.9 per cent of the value of products for the industry. The 48-hour week prevailed in enterprises which employed 8 per cent of the wage earners and contributed 8.8 per cent of the total value of products.

TABLE 17.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO PREVAILING HOURS OF LABOR PER WEEK FOR WAGE EARNERS, FOR THE UNITED STATES AND FOR SELECTED STATES: 1929

STATE AND PREVAILING HOURS OF LABOR PER WEEK	Number of enterprises	Number of plants	Wage earners (average for the year)	Wages	Value of products	STATE AND PREVAILING HOURS OF LABOR PER WEEK	Number of enterprises	Number of plants	Wage earners (average for the year)	Wages	Value of products			
United States, total.....	957	1,165	15,994	\$22,779,984	\$102,311,914	Ohio—Continued								
Under 25.....	1	1	} 157	63,009	287,681	Over 48 but under 54.....	8	8	51	\$90,024	\$384,605			
25 and over but under 36.....	7	8							52	61	852	1,358,993	5,297,399	
36 and over but under 40.....	2	2				} 286	445,289	1,365,816	63 and over.....	3	4	52	85,902	324,704
40.....	14	17												
Over 40 but under 44.....	2	2	} 330	567,760	2,096,275	Michigan, total.....	57	68	1,022	1,468,293	7,030,380			
44 and over but under 48.....	26	28												
48.....	123	165	1,273	2,046,528	9,035,111	25 and over but under 36.....	1	1	} 156	87,021	371,636			
Over 48 but under 54.....	53	63	484	613,384	2,647,159	40.....	1	1						
54 and over but under 63.....	658	787	11,366	16,199,898	74,222,741	48.....	4	4						
63 and over.....	71	102	2,189	2,844,176	12,677,231	Over 48 but under 54.....	2	2						
Texas, total.....	41	55	1,354	1,458,700	5,424,864	54 and over but under 63.....	39	49	761	1,118,120	5,300,984			
25 and over but under 36.....	1	1	} 123	22,733	79,870	63 and over.....	10	11	205	282,252	1,357,760			
44 and over but under 48.....	2	2												
48.....	3	3	38	49,200	142,796	Illinois, total.....	61	62	860	1,399,045	5,576,819			
54 and over but under 63.....	31	43	1,094	1,118,740	4,243,452	40.....	1	1	} 136	41,715	251,182			
63 and over.....	4	6	201	268,027	958,746	44 and over but under 48.....	2	2						
New York, total.....	62	69	1,330	2,437,299	11,304,630	48.....	4	4						
44 and over but under 48.....	2	2	} 131	229,603	1,072,429	Over 48 but under 54.....	2	2				} 787	1,202,005	5,040,943
48.....	9	11												
Over 48 but under 54.....	4	5	24	27,727	263,936	Indiana, total.....	58	71	738	984,331	4,452,720			
54 and over but under 63.....	47	51	1,175	2,179,909	9,963,265	40.....	5	6	} 1166	293,423	953,422			
Pennsylvania, total.....	46	54	1,208	1,821,815	11,002,656	44 and over but under 48.....	1	2						
40.....	1	1	} 91	127,837	286,646	Over 48 but under 54.....	1	1						
44 and over but under 48.....	2	2												
48.....	1	1	23	31,590	114,973	54 and over but under 63.....	43	53	460	574,070	2,945,078			
Over 48 but under 54.....	4	4	754	1,220,399	9,154,981	63 and over.....	6	7	112	116,833	554,220			
54 and over but under 63.....	34	40	310	442,019	1,496,056	Maryland, total.....	10	11	591	690,352	3,780,937			
63 and over.....	4	6				25 and over but under 36.....	1	1	} 1591	690,352	3,780,937			
California, total.....	68	96	1,153	1,843,622	7,800,188	54 and over but under 63.....	6	7						
36 and over but under 40.....	1	1	} 439	685,048	3,162,095	63 and over.....	3	3						
44 and over but under 48.....	1	2												
48.....	34	40	23	31,590	114,973	Missouri, total.....	32	35	566	729,340	3,516,756			
Over 48 but under 54.....	1	3	714	1,158,574	4,638,093	48.....	3	4	61	70,875	181,092			
54 and over but under 63.....	29	32				54 and over but under 63.....	27	29	1505	658,405	3,335,664			
63 and over.....	2	18				63 and over.....	2	2						
Ohio, total.....	73	84	1,103	1,787,493	6,863,579	New Jersey, total.....	33	41	505	793,788	3,696,535			
Over 40 but under 44.....	2	2	} 1100	176,401	587,109	40.....	1	1	} 145	77,950	174,791			
44 and over but under 48.....	1	1										44 and over but under 48.....	3	3
48.....	7	8	48	76,178	269,762	48.....	3	3				19	37,950	222,772
						Over 48 but under 54.....	4	6				67	81,440	279,317
						54 and over but under 63.....	22	23	374	596,443	3,019,655			

<sup>1</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

# SAND AND GRAVEL

TABLE 18.—WAGE EARNERS, BY MONTHS, BY STATES: 1929

[The month of maximum employment is indicated by bold-faced figures and that of minimum employment by *italic* figures]

STATE	Average number employed during year	NUMBER EMPLOYED ON 15TH DAY OF MONTH OR NEAREST REPRESENTATIVE DAY												Per cent minimum is of maximum
		January	February	March	April	May	June	July	August	September	October	November	December	
United States.....	15,994	<b>11,847</b>	11,030	13,854	16,716	17,677	18,367	18,676	18,677	18,383	18,013	15,812	12,768	60.8
<i>Individual States</i>														
Alabama.....	304	<i>207</i>	214	287	306	338	343	354	358	332	321	307	282	58.1
Arizona.....	34	<i>36</i>	37	36	33	34	32	33	34	35	43	32	26	60.5
Arkansas.....	286	<i>256</i>	211	231	254	246	239	298	310	365	350	316	310	57.8
California.....	1,153	<b>1,226</b>	<b>1,296</b>	<b>1,284</b>	1,211	1,132	1,104	1,096	1,141	1,116	1,123	<b>1,051</b>	1,053	81.1
Colorado.....	69	<i>51</i>	<i>51</i>	57	84	77	92	83	83	69	68	61	52	55.4
Connecticut.....	55	<i>30</i>	<i>29</i>	48	65	71	82	73	67	68	59	40	31	35.4
Florida.....	112	<i>85</i>	<i>80</i>	106	105	90	91	104	126	124	148	139	139	54.8
Georgia.....	62	<i>54</i>	57	62	61	64	65	70	63	62	57	50	66	77.1
Illinois.....	860	<b>888</b>	412	649	971	1,066	1,119	1,076	1,058	1,093	1,054	878	551	34.7
Indiana.....	738	<b>459</b>	<b>482</b>	631	798	892	936	960	940	917	805	614	411	42.8
Iowa.....	394	<i>155</i>	166	246	403	466	530	557	564	544	516	385	196	27.1
Kansas.....	236	<i>187</i>	155	212	248	268	275	290	290	266	261	234	193	47.2
Kentucky.....	249	<i>165</i>	167	187	271	293	301	300	268	282	274	255	192	54.6
Louisiana.....	439	<b>368</b>	375	415	408	409	435	467	454	448	501	495	498	73.5
Maryland.....	591	<i>536</i>	540	568	594	619	627	627	620	620	600	581	547	85.5
Massachusetts.....	212	<i>187</i>	141	171	221	248	230	249	238	247	245	222	189	55.0
Michigan.....	1,022	<b>382</b>	439	685	1,283	1,378	1,455	1,481	1,417	1,358	1,281	855	326	22.3
Minnesota.....	243	<i>85</i>	92	135	262	329	362	378	339	324	312	208	94	22.5
Missouri.....	566	<b>198</b>	<b>193</b>	451	580	678	670	716	744	717	713	645	475	25.9
Montana.....	52	<i>9</i>	21	69	61	73	96	75	38	67	60	44	13	9.4
Nebraska.....	142	<i>27</i>	42	88	131	148	176	188	200	205	206	176	113	13.1
New Jersey.....	505	408	<i>452</i>	610	546	540	539	526	526	480	504	494	462	82.8
New York.....	1,330	<b>1,031</b>	<b>1,018</b>	1,151	1,413	1,447	1,400	1,552	1,517	1,502	1,450	1,313	1,079	65.2
North Carolina.....	180	126	125	136	138	135	137	133	132	129	128	122	121	87.7
Ohio.....	1,103	<b>761</b>	<b>792</b>	899	1,147	1,200	1,259	1,283	1,334	1,302	1,274	1,119	893	67.0
Oklahoma.....	231	<i>196</i>	201	228	237	235	242	244	244	242	248	230	211	79.0
Oregon.....	141	<i>117</i>	119	184	147	140	150	159	156	162	149	132	122	72.2
Pennsylvania.....	1,298	<b>967</b>	968	1,003	1,123	1,233	1,411	1,406	1,380	1,352	1,370	1,226	1,057	63.5
Tennessee.....	405	<b>386</b>	398	445	526	524	537	544	552	555	557	504	416	69.3
Texas.....	1,354	<b>1,108</b>	1,132	1,320	1,371	1,378	1,333	1,362	1,440	1,458	1,494	1,411	1,393	74.2
Utah.....	27	<i>23</i>	20	24	28	35	39	38	34	27	22	21	17	43.6
Virginia.....	181	<i>170</i>	<i>170</i>	174	158	196	198	181	191	175	174	182	178	86.7
Washington.....	166	129	136	163	158	190	181	205	197	196	176	160	111	54.1
West Virginia.....	337	<b>294</b>	297	317	329	347	345	348	355	360	365	343	340	80.5
Wisconsin.....	390	<i>186</i>	151	245	438	504	525	538	546	532	497	409	164	24.0
<i>Groups of States</i>														
Idaho, 1 enterprise; Nev., 1; N. Mex., 1; Wyo., 1.....	42	<i>22</i>	27	31	45	59	65	56	51	40	36	40	28	33.8
Me., 2 ent.; N. H., 4; R. I., 2; Vt., 1.....	138	<i>67</i>	76	100	141	178	176	193	179	173	153	130	85	34.7
Miss., 12 ent.; S. C., 6.....	353	<b>362</b>	<b>345</b>	349	382	354	356	378	385	358	339	338	309	78.7
N. Dak., 1 ent.; S. Dak., 3.....	45	<i>5</i>	6	17	39	45	58	75	71	72	73	52	31	6.7

## MINES AND QUARRIES

## GENERAL TABLES

Tables 19 and 20 present in detail, for 1929, statistics relating to the sand and gravel industry for the United States as a whole and for each State

for which separate figures can be given without disclosing, exactly or approximately, the data reported by individual enterprises.

TABLE 19.—CONSUMPTION OF FUEL AND ELECTRIC ENERGY, BY STATES: 1929

STATE	FUEL AND ELECTRIC ENERGY CONSUMED								
	Fuel						Electric energy		
	Coal		Coke, tons (2,000 pounds)	Fuel oils, gallons	Gasoline and kerosene, gallons	Gas		Purchased, kilowatt-hours	Generated by enterprises reporting, kflowatt- hours
Anthra- cite, tons (2,240 pounds)	Bituminous, tons (2,000 pounds)	Manufac- tured, M cubic feet				Natural, M cubic feet			
United States.....	3,804	601,588	133	16,911,461	5,811,573	52,560	82,213	237,679,291	7,594,828
<i>Individual States</i>									
Alabama.....		17,544		64,053	6,821			1,205,400	
Arizona.....					11,070			599,472	
Arkansas.....	1,800	5,038		766,200	123,351		132	2,183,785	
California.....				3,061,139	604,531		2,476	23,225,902	138,000
Colorado.....					21,578			1,074,909	
Connecticut.....		1,650		5,110	11,614			774,404	
Florida.....		3,250		52,643	155,114			1,046,550	217,000
Georgia.....	10	2,799			48,452			262,000	1,061,760
Illinois.....	11	67,961		244,720	274,780			15,772,267	
Indiana.....		36,499		60,394	62,907			23,052,671	
Iowa.....	380	14,236	5	21,361	171,715			11,915,091	30,000
Kansas.....		2,305		40,255	110,673			5,950,224	
Kentucky.....		26,832		77,610	99,400			738,200	300,000
Louisiana.....		7,885		1,354,119	41,792			10,819,063	
Maryland.....		31,139		604,800	97,762			3,196,510	
Massachusetts.....	24	2,026		46,251	232,844	4,838		2,369,250	302,258
Michigan.....	635	42,264	46	768,026	373,286			21,000,994	271,920
Minnesota.....	9	8,007		16,248	57,599			4,835,750	55,000
Missouri.....		38,216		49,494	124,900		6,080	3,202,244	
Montana.....		286		6,664	40,974			1,405,151	
Nebraska.....		2,783		2,000	103,122			6,624,681	
New Jersey.....	6	9,213		709,228	390,325			4,677,409	60,000
New York.....	7	53,385	22	940,169	437,427		504	15,722,612	900,000
North Carolina.....		5,024		12,902	50,290			864,875	
Ohio.....	304	52,293		251,520	195,112		2,592	22,606,557	455,000
Oklahoma.....		1,114		406,063	382,365			2,815,850	
Oregon.....		3		630,190	30,801			2,370,790	
Pennsylvania.....	16	65,100		882,068	233,359			16,383,807	2,978,100
Tennessee.....		29,352	10	236,491	84,911			2,941,053	230,000
Texas.....	602	11,701		4,617,530	437,327	34,837	45,304	5,282,242	400,000
Utah.....								490,638	
Virginia.....		12,249		17,400	21,533			1,891,350	
Washington.....		2		619,139	81,007			4,044,675	33,300
West Virginia.....		28,575		61,123	16,943	12,840	24,505	834,410	
Wisconsin.....		7,892	60	28,030	200,936			7,982,962	52,500
<i>Groups of States</i>									
Idaho, 1 enterprise; Nev., 1; N. Mex., 1; Wyo., 1.....					15,737			452,581	
Me., 2 enterprises; N. H., 4; R. I., 2; Vt., 1.....		1,113			51,300			1,265,634	
Miss., 12 enterprises; S. C., 6.....		12,738		269,629	114,320			2,591,107	
N. Dak., 1 enterprise; S. Dak., 3.....		900			141,608			96,171	

# SAND AND GRAVEL

385

**TABLE 20.—DETAILED STATISTICS FOR THE INDUSTRY, BY STATES: 1929**

[This table presents statistics separately for each State for which figures can be given without disclosing data for individual enterprises]

STATE	PERSONS ENGAGED IN INDUSTRY		PRINCIPAL EXPENSES OF OPERATION										Value of products			
	Number of enterprises <sup>1</sup>	Number of plants	Total (all classes)	Proprietors and firm members	Principal salaried officers of corporations	Other salaried officers and employees	Wage earners (average for the year)	Total	Salaries and wages			Contract work		Cost of supplies, fuel, and purchased electric energy		
									Principal officers of corporations	Other salaried officers and employees	Wage earners			Supplies	Fuel	Purchased electric energy
United States.....	957	1,165	19,915	240	968	2,704	15,994	\$54,678,519	\$4,827,487	\$5,918,757	\$22,779,934	\$324,718	\$11,916,672	\$3,989,503	\$4,921,398	\$102,311,914
<i>Individual States</i>																
Alabama.....	10	13	357	3	11	39	304	590,940	53,800	86,584	245,006	-----	100,473	84,337	20,680	1,302,754
Arizona.....	4	4	48	-----	4	10	34	134,025	16,975	22,735	52,672	-----	20,535	3,100	17,969	342,732
Arkansas.....	16	16	350	8	18	33	236	809,256	89,011	76,074	351,846	-----	161,397	76,539	54,389	1,672,059
California.....	68	96	1,500	22	55	330	1,153	4,206,304	256,779	808,021	1,843,022	11,107	731,157	165,567	390,051	7,800,188
Colorado.....	3	10	89	-----	4	16	69	228,277	22,600	32,069	108,161	-----	31,767	2,500	30,280	325,416
Connecticut.....	10	11	81	3	5	18	55	198,055	26,720	27,680	87,038	-----	20,553	12,394	21,670	383,301
Florida.....	9	9	134	-----	5	17	112	273,143	16,180	33,316	105,709	115	43,672	45,277	28,974	490,311
Georgia.....	5	5	32	3	6	11	62	120,765	14,463	14,346	46,056	-----	18,986	20,346	6,568	172,087
Illinois.....	61	62	1,103	9	64	170	860	3,517,512	333,596	378,538	1,399,045	51,875	627,256	356,704	320,498	5,676,319
Indiana.....	58	71	923	16	37	132	738	2,435,108	138,703	330,324	984,331	36,553	406,781	130,605	407,869	4,452,720
Iowa.....	38	39	532	19	38	81	394	1,391,629	151,213	160,817	506,690	2,538	268,876	98,483	208,012	2,240,638
Kansas.....	27	35	334	15	16	67	236	1,205,190	145,214	145,214	361,258	360	452,363	24,861	149,317	1,775,014
Kentucky.....	11	12	306	1	16	40	249	748,052	63,640	76,846	346,963	7,831	143,225	98,767	12,780	1,347,698
Louisiana.....	17	18	512	1	24	48	439	1,338,400	118,800	102,490	442,098	1,000	340,676	116,496	214,840	2,031,289
Maryland.....	10	11	709	3	18	67	591	2,719,973	126,585	206,830	690,352	-----	1,421,625	191,682	83,899	3,780,937
Massachusetts.....	22	27	239	12	11	54	212	774,107	34,315	117,444	389,331	3,228	106,168	59,044	64,677	1,816,481
Michigan.....	57	68	1,222	19	67	124	1,022	3,516,030	276,222	249,462	1,468,293	21,211	774,570	318,199	408,073	7,030,380
Minnesota.....	25	29	335	5	29	58	243	1,006,214	166,263	147,675	413,781	3,815	205,403	60,175	99,702	2,041,467
Missouri.....	32	35	607	4	38	59	566	1,623,349	90,564	100,618	729,340	726	460,133	155,280	77,682	3,616,756
Montana.....	4	4	65	1	3	9	52	208,335	10,744	21,875	89,046	-----	56,132	12,032	16,956	408,168
Nebraska.....	18	40	194	4	9	39	142	729,707	40,900	94,895	299,258	5,400	105,300	29,652	154,212	1,680,139
New Jersey.....	33	41	643	6	38	94	505	1,739,903	127,367	192,184	793,788	54,895	369,769	101,155	150,745	3,696,635
New York.....	62	69	1,506	14	75	177	1,330	5,303,933	800,965	467,852	2,437,299	8,074	862,156	369,939	367,698	11,304,630
North Carolina.....	6	6	151	2	6	13	130	237,706	14,500	21,635	110,338	-----	43,413	28,769	18,551	349,923
Ohio.....	73	84	1,341	13	66	159	1,103	3,840,879	284,066	341,368	1,787,498	19,967	740,168	210,858	447,064	6,863,679
Oklahoma.....	21	36	307	2	17	57	231	850,500	183,032	92,620	298,563	-----	129,543	57,582	95,160	1,879,431
Oregon.....	18	21	191	11	13	26	141	475,776	52,140	54,000	214,590	-----	77,195	40,146	37,765	1,102,087
Pennsylvania.....	46	54	1,479	4	66	201	1,208	4,064,387	337,853	472,528	1,821,815	20,951	822,961	283,507	304,772	11,002,656
Tennessee.....	20	22	611	13	23	30	495	1,426,888	88,053	158,888	532,213	3,200	240,778	119,035	72,131	2,136,624
Texas.....	41	55	1,592	17	63	158	1,354	3,606,493	317,654	312,133	1,458,700	9,106	1,000,163	304,821	203,926	5,424,864
Utah.....	3	4	43	-----	3	13	27	89,558	8,900	10,237	39,115	-----	18,150	-----	13,147	254,998
Virginia.....	8	9	216	-----	13	22	131	455,479	50,380	49,869	212,054	-----	54,822	59,068	29,786	678,662
Washington.....	21	31	216	3	14	33	166	671,738	55,775	76,615	272,640	21,551	124,483	56,806	63,868	1,096,116
West Virginia.....	17	21	405	1	20	47	337	938,902	71,000	93,068	488,501	2,278	170,670	86,436	27,649	1,613,869
Wisconsin.....	48	57	542	9	54	89	300	1,616,030	184,730	170,146	686,280	29,366	268,392	81,534	195,623	2,762,357
<i>Groups of States</i>																
Idaho, 1 enterprise; Nev., 1; N. Mex., 1; Wyo., 1.....	4	5	53	-----	4	7	42	166,792	7,800	15,926	50,081	-----	71,367	3,080	11,638	263,554
Me., 2 ent.; N. H., 4; R. I., 2; Vt., 1.....	9	10	155	5	-----	12	138	331,064	-----	24,065	204,398	1,500	64,565	11,406	25,070	566,730
Miss., 12 ent.; S. C., 6.....	18	21	428	1	20	54	353	806,675	51,072	110,698	295,635	7,901	186,766	87,029	66,674	1,226,347
N. Dak., 1 ent.; S. Dak., 3.....	4	4	55	-----	5	5	45	142,347	22,400	13,272	58,111	-----	8,474	38,167	1,923	300,849

<sup>1</sup> See GENERAL EXPLANATIONS—The Enterprises.

<sup>2</sup> Includes data for major additions and improvements to plants in certain instances. These represent capital expenditures and should not have been reported as operating expenses under "Supplies."

MINES AND QUARRIES

TABLE 20.—DETAILED STATISTICS FOR THE INDUSTRY, BY STATES: 1929—Continued

[See note at head of this table]

STATE	Machinery and other equipment purchased during the year (total cost)	PRIME MOVERS AND ELECTRIC MOTORS DRIVEN BY PURCHASED ENERGY										ELECTRIC MOTORS DRIVEN BY ENERGY GENERATED BY ENTERPRISES REPORTING		ELECTRIC GENERATORS	
		Aggregate horsepower	Prime movers						Electric motors driven by purchased energy		Number	Horsepower	Number	Kilowatts	
			Total horsepower of prime movers	Steam engines		Steam turbines		Internal-combustion engines		Number					Horsepower
				Number	Horsepower	Number	Horsepower	Number	Horsepower						
United States.....	\$7,173,766	516,745	231,097	1,653	158,150	10	740	1,125	72,207	7,732	285,648	212	6,591	42	3,828
<i>Individual States</i>															
Alabama.....	17,020	4,949	3,604	33	2,936			6	758	16	1,255				
Arizona.....	164,644	972	40					1	40	34	932				
Arkansas.....	281,217	7,004	4,681	32	3,418			16	1,263	58	2,323				
California.....	52,000	45,215	10,361	44	5,132			88	5,220	1,153	34,554	7	170	2	115
Colorado.....	44,077	1,738	170					3	170	83	1,568				
Connecticut.....	9,165	2,866	790	10	690			4	100	89	2,076				
Florida.....	7,302	3,907	2,679	8	1,005			28	1,674	41	1,228	30	433	3	242
Georgia.....	324,306	1,129	729	3	375			9	354	8	400	5	355	1	250
Illinois.....	306,656	35,954	16,563	109	13,019	1	10	57	3,534	429	19,391				
Indiana.....	202,736	31,470	10,923	82	10,082			16	841	488	20,547				
Iowa.....	108,110	15,907	4,560	29	2,590			33	1,970	359	11,347			1	40
Kansas.....	56,199	9,223	1,545	7	470			13	1,075	123	7,678				
Kentucky.....	128,066	7,309	6,097	59	4,417	1	50	24	1,000	32	1,242	3	110	1	60
Louisiana.....	206,431	13,808	5,462	18	2,730			31	2,732	102	8,436				
Maryland.....	184,441	10,039	6,021	83	5,521	4	150	5	350	99	4,018				
Massachusetts.....	450,881	6,676	3,483	16	742			43	2,741	124	3,193	23	465	2	360
Michigan.....	282,571	37,633	16,318	78	12,132			72	4,186	522	21,316	19	550	3	400
Minnesota.....	276,599	10,569	3,618	38	2,753			20	865	226	6,941	3	60	1	55
Missouri.....	90,702	16,332	10,685	98	7,462			40	3,223	165	5,647				
Montana.....	110,697	2,350	1,110	11	810			11	300	24	1,240				
Nebraska.....	254,551	0,127	1,997	16	915			16	1,082	116	7,130				
New Jersey.....	718,694	15,017	6,529	60	3,013			53	3,516	280	8,498	6	40	2	52
New York.....	20,984	43,256	22,244	124	17,350	2	125	83	4,769	552	21,012	6	115	2	125
North Carolina.....	455,601	2,000	1,316	12	820			11	495	21	685				
Ohio.....	51,910	40,886	17,739	131	14,582			48	3,157	606	23,147	12	580	4	345
Oklahoma.....	53,383	7,864	3,215	7	1,135			21	2,080	87	4,649				
Oregon.....	871,261	5,458	2,295	18	1,000			25	1,295	113	3,163				
Pennsylvania.....	386,757	43,717	22,205	178	16,313	1	400	56	5,492	588	21,612	46	2,435	10	680
Tennessee.....	434,813	12,485	7,737	70	5,402	1	5	18	2,330	97	4,748	10	250	1	300
Texas.....	27,191	22,520	14,048	93	7,275			132	7,373	272	7,872	20	610	3	325
Utah.....	12,872	846								38	846				
Virginia.....	119,891	3,745	1,975	26	1,885			2	90	34	1,770				
Washington.....	107,763	8,381	2,700	21	1,466			20	1,235	110	5,681	5	40	2	30
West Virginia.....	197,692	6,014	4,370	53	3,447			20	923	59	1,644				
Wisconsin.....	197,692	18,082	5,528	37	2,793			63	2,735	421	12,554	17	378	4	140
<i>Groups of States</i>															
Idaho, 1 enterprise; Nev., 1; N. Mex., 1; Wyo., 1.....	10,226	1,203	155					3	155	31	1,048				
Me., 2ent.; N.H., 4; R.I., 2; Vt., 1.....	56,483	2,749	975	12	780			7	195	67	1,774				
Miss., 12ent.; S.C., 6.....	66,962	7,493	5,301	31	3,451			10	1,850	30	2,197				
N. Dak., 1ent.; S. Dak., 3.....	22,222	767	670	6	240			11	480	5	97				

\* Includes 3,965 horsepower reported for inactive prime movers.

## MINES AND QUARRIES—PHOSPHATE ROCK

Scope of the report.—This report gives the results of the census of mines and quarries for 1929 for the phosphate-rock mining industry. It shows the progress of the industry by comparison of the results of the census for 1929 with those for the last three preceding censuses of mines and quarries; the geographic distribution of the industry by States; the size of operating enterprises; power equipment, by kind, number, and capacity; time in operation for enterprises and length of working week for wage earners; the numbers of persons engaged in the industry, classified as proprietors and firm members, salaried officers and employees, and wage earners; fuel consumption, by kind. It includes

TABLE 1.—PHOSPHATE ROCK MINED, AND SOLD OR USED BY PRODUCERS, BY STATES: 1929<sup>1</sup>

STATE	MINED		SOLD OR USED BY PRODUCERS	
	Quantity (tons, 2,240 pounds)	Quantity (tons, 2,240 pounds)	Value	
United States, total.....	3,821,840	3,760,855	\$13,153,259	
Florida, total.....	3,125,941	3,088,298	9,901,074	
Hard rock.....		72,424	297,218	
Land pebble.....		3,015,874	9,633,856	
Tennessee, total.....	653,265	633,939	3,097,104	
Brown and blue rock.....	653,265	633,939	3,097,104	
Western States <sup>2</sup> .....	42,634	38,618	155,081	

<sup>1</sup> U. S. Bureau of Mines, Mineral Resources of the United States: 1929.

<sup>2</sup> Idaho, Montana, and Wyoming.

a table presenting statistics in detail for the United States as a whole and for those States for which separate figures can be given without disclosing, exactly or approximately, the data reported by individual enterprises.

Differences in the value of products as reported by the Bureau of the Census and the Bureau of Mines.—The Bureau of Mines figures for value of products relate to the value of phosphate rock sold or used by producers and not the total value of phosphate rock mined during the year. The differences in quantities produced are accounted for by differences in the figures reported by individual enterprises to the two bureaus.

TABLE 2.—COMPARISON OF PRODUCTION AS REPORTED BY BUREAU OF THE CENSUS AND BY BUREAU OF MINES, FOR THE UNITED STATES: 1929

STATE	BUREAU OF THE CENSUS		BUREAU OF MINES <sup>1</sup>	
	Phosphate rock mined		Phosphate rock mined, quantity (tons, 2,240 pounds)	Phosphate rock sold or used, <sup>2</sup> value
	Quantity (tons, 2,240 pounds)	Value		
United States.....	3,823,623	\$13,043,769	3,821,840	\$13,153,259
Florida.....	3,130,842	9,714,645	3,125,941	9,901,074
Tennessee.....	646,804	3,128,760	653,265	3,097,104
Other States <sup>3</sup> .....	42,977	200,364	42,634	155,081

<sup>1</sup> Mineral Resources of the United States, 1929.

<sup>2</sup> Number of tons sold or used, 3,760,855.

<sup>3</sup> Idaho and Wyoming, and in addition data for Montana are included in figures of Bureau of Mines.

TABLE 3.—SUMMARY FOR THE UNITED STATES: 1902-1929

	1929	1919	1909	1902	PER CENT OF INCREASE OR DECREASE (—)		
					1919-1929	1909-1919	1902-1909
Number of enterprises <sup>1</sup> .....	26	48	71	87	(?)	(?)	(?)
Number of mines.....	33	69	153	115	(?)	-54.9	33.0
Persons engaged, total.....	3,508	4,761	8,260	.....	-26.3	-42.4	.....
Proprietors and firm members.....	2	14	17	(?)	(?)	(?)	-5.4
Salaried officers and employees <sup>2</sup> .....	305	374	370	391	-18.4	1.1	-5.4
Wage earners (average for the year) <sup>3</sup> .....	3,201	4,373	7,873	5,971	-26.8	-44.5	31.9
Power equipment, total horsepower.....	104,146	49,639	50,526	14,229	109.8	-1.8	255.1
Principal expenses, total <sup>4</sup> .....	\$7,620,242	\$8,806,887	\$6,317,525	\$3,242,113	-13.4	39.4	94.9
Salaries <sup>5</sup> .....	778,057	761,423	500,090	355,204	2.2	28.8	66.4
Wages.....	3,303,940	3,900,066	3,215,661	1,930,093	-15.3	21.3	66.6
Contract work.....	20,936	183,696	251,849	157,402	-87.2	-35.0	60.0
Supplies and materials.....	1,542,887	2,161,501	898,657	.....	-28.6	140.5	.....
Fuel.....	891,858	1,739,833	.....	799,414	-48.8	.....	182.6
Purchased electric energy.....	1,092,064	79,468	1,300,368	.....	1,274.2	33.7	.....
Value of products <sup>7</sup> .....	13,043,769	10,300,198	10,781,192	4,922,943	26.6	-4.5	119.0

<sup>1</sup> See GENERAL EXPLANATIONS—The Enterprise.

<sup>2</sup> Per cent not computed where base is less than 100.

<sup>3</sup> Not reported.

<sup>4</sup> Includes data for salaried officers and employees of "Central Administrative" offices.

<sup>5</sup> See GENERAL EXPLANATIONS—Persons Engaged.

<sup>6</sup> See GENERAL EXPLANATIONS—Expenses.

<sup>7</sup> See GENERAL EXPLANATIONS—Value of Products.



MINES AND QUARRIES

TABLE 4.—SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO QUANTITY OF PRODUCT: 1929

QUANTITY OF PRODUCT PER ENTERPRISE (tons, 2,240 pounds)	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	Cost of supplies	Cost of fuel	Cost of purchased electric energy	Phosphate rock mined, tons (2,240 pounds)	Value of products	HORSEPOWER RATING OF POWER EQUIPMENT		AVERAGE PER TON			Tons per wage earner
										Prime movers	Electric motors driven by purchased energy	Wages	Supplies, fuel, and purchased electric energy	Value of products	
Total.....	26	33	3,201	\$3,303,940	\$1,642,887	\$391,368	\$1,092,064	3,823,623	\$13,043,769	46,518	57,628	\$0.86	\$0.92	\$3.41	1,196
Less than 5,000.....	2	2	140	38,128	6,691	5,575	3,321	20,642	96,275	595	93	1.85	0.70	4.66	516
5,000 to 9,999.....	2	2													
10,000 to 24,999.....	5	5	129	100,525	25,171	12,154	17,849	81,066	365,186	835	1,400	1.24	0.68	4.50	628
25,000 to 49,999.....	3	4	279	262,060	104,789	32,029	31,229	125,778	535,724	625	1,249	2.08	1.34	4.26	451
50,000 to 99,999.....	5	5	661	588,209	122,163	123,113	78,251	381,401	1,934,958	1,954	3,577	1.63	0.90	5.35	547
100,000 to 199,999.....	4	5	631	636,239	214,061	158,007	195,471	630,220	2,807,456	10,075	11,192	1.01	0.90	3.60	999
200,000 to 499,999.....	3	7													
500,000 to 999,999.....	2	3	1,461	1,678,729	1,070,032	560,480	765,943	2,609,518	7,804,220	32,434	40,117	0.64	0.92	2.99	1,786

1 Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

TABLE 5.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO VALUE OF PRODUCTS, FOR SELECTED STATES: 1929

STATE AND VALUE OF PRODUCTS PER ENTERPRISE	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	VALUE OF PRODUCTS		STATE AND VALUE OF PRODUCTS PER ENTERPRISE	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	VALUE OF PRODUCTS	
					Amount	Per cent of total						Amount	Per cent of total
United States, total.....	26	33	3,201	\$3,303,940	\$13,043,769	100.0	Florida—Continued.						
Less than \$20,000.....	2	2	147	42,834	125,264	1.0	\$500,000 to \$999,999.....	1	1				
\$20,000 to \$49,999.....	3	3					\$1,000,000 to \$2,499,999.....	4	9	1,005	\$1,833,760	\$3,546,548	85.0
\$50,000 to \$99,999.....	3	3	77	59,986	200,424	1.6	\$2,500,000 to \$4,999,999.....	1	1				
\$100,000 to \$249,999.....	4	5	325	297,893	665,447	5.1	Tennessee, total.....	12	12	1,189	1,010,322	3,128,760	100.0
\$250,000 to \$499,999.....	7	8	1,292	1,224,498	4,242,414	32.5	\$20,000 to \$49,999.....	2	2				
\$500,000 to \$999,999.....	2	2					\$50,000 to \$99,999.....	2	2	1,206	215,569	514,616	16.4
\$1,000,000 to \$2,499,999.....	4	9	1,460	1,678,729	7,804,220	60.8	\$100,000 to \$249,999.....	2	2				
\$2,500,000 to \$4,999,999.....	1	1					\$250,000 to \$499,999.....	5	5	1,893	794,753	2,614,144	83.6
Florida, total.....	11	18	1,936	2,180,750	9,714,645	100.0	\$500,000 to \$999,999.....	1	1				
\$20,000 to \$49,999.....	1	1											
\$50,000 to \$99,999.....	1	1	331	346,950	1,168,097	12.0							
\$100,000 to \$249,999.....	1	2											
\$250,000 to \$499,999.....	2	3											

1 Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

TABLE 6.—NUMBER AND RATED CAPACITY OF PRIME MOVERS, MOTORS, AND GENERATORS, FOR ENTERPRISES CLASSIFIED ACCORDING TO TOTAL RATING OF POWER EQUIPMENT: 1929

TYPE	Total, all sizes	RATING OF POWER EQUIPMENT FOR ENTERPRISES INDIVIDUALLY REPORTING TOTAL HORSEPOWER OF—					TYPE	Total, all sizes	RATING OF POWER EQUIPMENT FOR ENTERPRISES INDIVIDUALLY REPORTING TOTAL HORSEPOWER OF—				
		Less than 250	250 to 499	500 to 2,499 <sup>1</sup>	2,500 to 9,999 <sup>2</sup>	10,000 to 24,999			Less than 250	250 to 499	500 to 2,499 <sup>1</sup>	2,500 to 9,999 <sup>2</sup>	10,000 to 24,999
Number of enterprises reporting power equipment.....	26	5	3	9	5	4	Prime movers and electric motors, etc.—Continued.						
Prime movers and electric motors driven by purchased energy, aggregate horsepower.....	104,146	618	1,075	8,635	30,784	63,034	Horsepower rating of inactive prime movers, included above. Electric motors driven by purchased energy—	13,368			2,325	11,043	
Prime movers, total horsepower.....	46,518	305	1,075	2,629	10,075	32,434	Number.....	901	12	171	307	411	
Steam engines—							Horsepower.....	57,628	313	6,006	20,709	30,600	
Number.....	68	4	9	32	18	5	Electric motors driven by energy generated by enterprises reporting:						
Horsepower.....	7,370	250	1,075	2,629	2,600	916	Number.....	355			26	326	
Steam turbines—							Horsepower.....	30,966			1,662	20,304	
Number.....	15				5	10	Electric generators:						
Horsepower.....	37,288				5,760	31,518	Number.....	14			10	4	
Internal-combustion engines—							Kilowatts.....	22,722			5,222	17,500	
Number.....	8	2			7								
Horsepower.....	1,880	55			1,825								

<sup>1</sup> Includes the group "1,000 to 2,499."

<sup>2</sup> Includes the group "5,000 to 9,999."

PHOSPHATE ROCK

TABLE 7.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO NUMBER OF DAYS IN OPERATION IN 1929, FOR THE UNITED STATES

DAYS IN OPERATION	Number of enterprises	Number of mines	Wage earners, Dec. 14 or nearest representative day	Wages	Value of products	DAYS IN OPERATION	Number of enterprises	Number of mines	Wage earners, Dec. 14 or nearest representative day	Wages	Value of products
Total.....	26	33	3,204	\$3,303,940	\$13,043,769	250 to 299.....	7	10	724	\$751,922	\$2,838,046
50 to 74.....	1	1	2 386	388,169	914,555	300 and over.....	11	15	2,184	2,163,849	9,291,188
150 to 199.....	3	3									
200 to 249.....	4	4									

<sup>1</sup> This total differs from that for "Wage earners (average for the year)," 3201, given in other tables of this report. See GENERAL EXPLANATIONS—Persons Engaged.  
<sup>2</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

TABLE 8.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO NUMBER OF WAGE EARNERS, FOR THE UNITED STATES AND FOR SELECTED STATES: 1929

STATE AND NUMBER OF WAGE EARNERS PER ENTERPRISE	Number of enterprises	Number of mines	WAGE EARNERS (average for the year)		Wages	Value of products	STATE AND NUMBER OF WAGE EARNERS PER ENTERPRISE	Number of enterprises	Number of mines	WAGE EARNERS (average for the year)		Wages	Value of products
			Number	Per cent of total						Number	Per cent of total		
United States, total.....	26	33	3,201	100.0	\$3,303,940	\$13,043,769	Florida—Continued.						
1 to 5.....	1	1	1 53	1.7	52,168	226,009	101 to 250.....	5	10	826	42.6	\$666,604	\$3,887,896
6 to 20.....	5	5					261 to 500.....	3	4	1,035	53.5	1,141,870	5,544,594
21 to 50.....	3	3											
51 to 100.....	5	6					115	3.6	86,485	235,402			
101 to 250.....	9	14					379	11.8	394,843	1,372,941			
251 to 500.....	9	14	1,019	50.0	1,023,574	5,664,823	Tennessee, total.....	12	12	1,189	100.0	1,010,322	3,128,760
	3	4	1,035	32.3	1,141,870	5,544,594	6 to 20.....	2	2	1 135	11.4	104,594	348,698
Florida, total.....	11	18	1,936	100.0	2,180,750	9,714,645	21 to 50.....	3	3				
6 to 20.....	2	2					51 to 100.....	3	3				
51 to 100.....	1	2	1 75	3.9	72,276	282,155	101 to 250.....	4	4				
										794	66.8	661,970	1,776,927

<sup>1</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

TABLE 9.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO PREVAILING HOURS OF LABOR PER WEEK, FOR THE UNITED STATES AND FOR SELECTED STATES: 1929

STATE AND PREVAILING HOURS OF LABOR PER WEEK	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	Value of products	STATE AND PREVAILING HOURS OF LABOR PER WEEK	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	Value of products
United States, total.....	26	33	3,201	\$3,303,940	\$13,043,769	Tennessee, total.....	12	12	1,189	\$1,010,322	\$3,128,760
44 and over but under 48.....	4	6	434	487,049	1,654,248	44 and over but under 48.....	3	3	1 189	1,010,322	3,128,760
48.....	4	5	1 193	248,409	704,163	54 and over but under 63.....	7	7			
Over 48 but under 54.....	1	1				63 and over.....	2	2			
54 and over but under 63.....	15	19	1 2,574	2,598,482	10,685,368						
63 and over.....	2	2									
Florida, total.....	11	18	1,936	2,180,750	9,714,645						
44 and over but under 48.....	1	3	1 203	374,816	1,596,113						
48.....	1	2									
Over 48 but under 54.....	1	1									
54 and over but under 63.....	8	12				1,643	1,805,934	8,118,532			

<sup>1</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

TABLE 10.—WAGE EARNERS, BY MONTHS, BY STATES: 1929

[The month of maximum employment is indicated by bold-faced figures and that of minimum employment by *italic* figures]

STATE	Average number employed during year	NUMBER EMPLOYED ON 15TH DAY OF MONTH OR NEAREST REPRESENTATIVE DAY												Per cent minimum is of maximum
		January	February	March	April	May	June	July	August	September	October	November	December	
United States.....	3,201	3,142	3,220	3,172	3,202	3,142	3,104	3,211	3,297	3,412	3,075	3,188	3,184	90.1
Florida.....	1,936	1,924	1,979	1,912	1,932	1,877	1,845	1,913	1,889	1,963	1,882	1,983	1,982	92.7
Tennessee.....	1,189	1,136	1,167	1,180	1,192	1,175	1,232	1,216	1,247	1,387	1,076	1,134	1,131	77.6
Idaho and Wyoming.....	78	82	84	80	78	90	89	82	61	62	67	71	71	67.8

TABLE 11.—DETAILED STATISTICS FOR THE INDUSTRY, BY STATES: 1929

	United States	Florida	Tennessee	Idaho and Wyoming <sup>1</sup>		United States	Florida	Tennessee	Idaho and Wyoming <sup>1</sup>
Number of enterprises <sup>2</sup> .....	28	11	12	3	Prime movers and electric motors driven by purchased energy—Continued. Prime movers—Continued.				
Number of mines <sup>3</sup> .....	33	18	12	3		Steam engines—			
Persons engaged, total.....	3,490	2,162	1,236	92	Number.....	68	14	54	
Proprietors and firm members.....	2	1	1		Horsepower.....	7,370	1,481	5,889	
Principal salaried officers of corporations <sup>4</sup> .....	5	4	1		Steam turbines—				
Other salaried officers and employees <sup>5</sup> .....	282	221	45	16	Number.....	15	14	1	
Wage earners (average for the year).....	3,201	1,936	1,189	76	Horsepower.....	37,268	36,518	750	
Principal expenses, total.....	\$7,559,204	\$5,604,008	\$1,724,833	\$229,763	Internal-combustion engines—				
Salaries and wages of—					Number.....	9	8		1
Principal officers of corporations <sup>4</sup> .....	\$52,421	\$46,421	\$6,000		Horsepower.....	1,830	1,855		25
Other salaried officers and employees <sup>5</sup> .....	\$655,598	\$500,650	\$116,276	\$32,672	Electric motors, driven by purchased energy—				
Wage earners.....	\$3,303,940	\$2,150,750	\$1,010,322	\$112,868	Number.....	901	693	155	53
Contract work.....	\$20,936	\$18,728	\$2,208		Horsepower.....	57,628	51,414	5,172	1,042
Supplies.....	\$1,542,887	\$1,231,363	\$248,430	\$63,094	Electric motors driven by energy generated by enterprises reporting:				
Fuel.....	\$891,352	\$664,135	\$222,688	\$4,535	Number.....	355	355		
Purchased electric energy.....	\$1,092,004	\$956,561	\$118,909	\$16,594	Horsepower.....	30,966	30,966		
Expenditures for development (included above in "Principal expenses").....	\$190,000	\$75,000	\$38,000	\$77,000	Electric generators:				
Value of products.....	\$13,043,769	\$9,714,645	\$3,128,760	\$200,364	Number.....	14	13	1	
Quantity of phosphate rock produced (tons, 2,240 pounds).....	3,823,623	3,139,842	645,804	42,977	Kilowatts.....	7,227,722	22,222	500	
Machinery and other equipment purchased during the year, total cost.....	\$805,128	\$680,962	\$111,297	\$12,899	Fuel and electric energy consumed:				
Prime movers and electric motors driven by purchased energy, aggregate horsepower.....	104,146	91,268	11,811	1,067	Fuel—				
Prime movers, total horsepower.....	40,513	39,854	6,639	25	Coal, bituminous.....	71,979	6,091	65,078	810
					..... tons (2,000 pounds).....	2			2
					Coke.....				
					..... tons (2,000 pounds).....	24,153,469	24,153,862		4,597
					Fuel oils.....	102,294	100,267		2,037
					Gasoline and kerosene.....				
					..... gallons.....				
					Electric energy—				
					Purchased.....	109,902,672	99,761,895	0,104,113	1,036,664
					..... kw.-hours.....				
					Generated by enterprises reporting.....	50,792,426	50,792,426		
					..... kw.-hours.....				

<sup>1</sup> Idaho, 2 enterprises; Wyoming, 1.<sup>2</sup> See GENERAL EXPLANATIONS—The Enterprise.<sup>3</sup> Includes 24 enterprises having corporate form of organization, and 2 small unincorporated enterprises.<sup>4</sup> See GENERAL EXPLANATIONS—Milling and Manufacturing.<sup>5</sup> Not including data for salaried officers and employees of "Central Administrative" offices.<sup>6</sup> Includes 13,363 horsepower reported for inactive prime movers.<sup>7</sup> Includes 3,972 kilowatts reported for inactive generators.

## MINES AND QUARRIES—CLAY

**Scope of the report.**—This report gives the results of the census of mines and quarries for 1929 for the clay-mining industry. It shows the progress of the industry by comparison of the results of the census for 1929 with those for the last three preceding censuses of mines and quarries; the geographic distribution of the industry by States; type of ownership; the size of operating enterprises; power equipment, by kind, number, and capacity; time in operation for enterprises and length of working week for wage earners; the numbers of persons engaged in the industry, classified as proprietors and firm members, salaried officers and employees, and wage earners; and fuel consumption, by kind. It includes a table presenting statistics in detail for the United States as a whole and for those States for which separate figures can be given without disclosing, exactly or approximately, the data reported by individual enterprises.

This report gives statistics primarily for those enterprises engaged only in the production of clay (china, paper, ball, slip, fire, and other clay), and whose product was sold as clay, either crude or beneficiated. It does not include data for the production of clay by clay-products manufacturers, whether used in their own manufacture of clay products, or sold as raw clay to others. However, data are included for the production of clay by those cement manufacturers whose clay operations were conducted as distinct units, and for which separate and complete returns were filed. The statistics for the production of clay by these cement manufacturers are also given separately in Table 4.

**Differences between the figures reported by the Bureau of the Census and Bureau of Mines.**—The figures on production and value reported by the two bureaus differ considerably for two reasons: (1) Census figures do not include data for clay produced and sold as such by clay-products manufacturers, while those of the Bureau of Mines include these data; (2) census figures include data for a production of clay by a number of cement manufacturers, while those of the Bureau of Mines exclude these data.

**Production of clay by clay-products manufacturers.**—In order to ascertain the quantity of clay produced by clay-products manufacturers, the following inquiry was incorporated in the schedules of the Census of Manufactures for those branches of the clay-products industries which are important as producers and consumers of clay:

Did you operate a clay pit, mine, or quarry at this location and as a part of this plant in 1929? (Yes or No).....  
 Did you operate a clay pit, mine, or quarry at some other location for the purpose of supplying materials for use in this plant in 1929? (Yes or No).....  
 If yes, give location of pit, mine, or quarry.....  
 If the answer to either question is yes, give in spaces below the quantity and the value of materials mined or quarried during the period covered by this report:

UNIT OF MEASURE	Quantity	Value
Sold in crude form.....		\$.....
Consumed in plant.....		\$.....

Manufacturers of clay products (other than pottery, including porcelain ware, and crucibles) and nonclay refractories, the value of whose products amounted to \$242,896,000 for 1929, reported a production of 30,334,000 short tons of clay. In addition, other manufacturers having an output of these products valued at \$51,593,000 either reported that no clay-mining operations were carried on, or failed to respond to the inquiry. These manufacturers represent largely the consumers of the clay mined and sold as such for which statistics given in this report primarily apply.

Further, no data were collected for the production or consumption of clay by manufacturers of pottery, including porcelain ware, and crucibles, the total value of whose manufactured products was \$113,567,000 for 1929.

Although the production of clay by a number of cement manufacturers is given, no reports were received for a larger number of such enterprises, either because the clay operations were associated with or a part of quarrying activities of such plants, and therefore, separate data were not available, or because the operations were considered of minor importance or were performed by others on contract. For these reasons, data as required by the census were not available.

**TABLE 1.—COMPARISON OF PRODUCTION OF COMMERCIAL CLAY AS REPORTED BY BUREAU OF THE CENSUS AND BY BUREAU OF MINES, FOR THE UNITED STATES: 1929**

STATE	BUREAU OF THE CENSUS			BUREAU OF MINES <sup>1</sup>		STATE	BUREAU OF THE CENSUS			BUREAU OF MINES <sup>1</sup>	
	Total value of all products	Clay mined		Clay mined and sold			Total value of all products	Clay mined		Clay mined and sold	
		Quantity (tons, 2,000 pounds)	Value	Quantity (tons, 2,000 pounds)	Value			Quantity (tons, 2,000 pounds)	Value	Quantity (tons, 2,000 pounds)	Value
United States.....	\$10,763,445	4,310,172	\$10,716,822	4,347,020	\$14,850,744	Missouri.....	\$916,532	384,958	\$916,221	497,699	\$1,797,448
Georgia.....	2,161,812	295,472	2,161,812	288,490	2,098,891	New Jersey.....	801,528	206,186	801,528	244,258	1,023,803
Pennsylvania.....	1,215,882	491,021	1,215,882	1,054,784	2,611,532	Kentucky.....	691,682	134,018	691,682	153,618	793,099
South Carolina.....	950,187	120,243	950,187	103,103	896,472	Florida.....	555,875	41,893	555,875	40,904	544,848
						Other States.....	3,459,947	2,636,381	3,424,635	1,964,164	5,084,651

<sup>1</sup> Mineral Resources of the United States, 1920.

## MINES AND QUARRIES

TABLE 2.—SUMMARY FOR THE UNITED STATES: 1902-1929

[This and all following tables cover producing enterprises only]

	1929	1919	1909	1902	PER CENT OF INCREASE OR DECREASE (-)		
					1919-1929	1909-1919	1902-1909
Number of enterprises <sup>1</sup> .....	199	345	261	203	-42.3	32.2	28.6
Number of mines.....	236	350	336	205	-32.6	4.2	63.9
Persons engaged, total.....	4,574	6,087	3,742	.....	-24.9	62.7	.....
Proprietors and firm members.....	72	187	244	( <sup>2</sup> )	-61.5	-23.4	.....
Salaried officers and employees <sup>4</sup> .....	363	447	236	185	-18.8	89.4	27.6
Wage earners (average for the year) <sup>5</sup> .....	4,139	5,453	3,262	2,433	-24.1	67.2	34.1
Power equipment, total horsepower.....	31,877	21,203	8,808	3,985	50.3	139.1	122.5
Prime movers.....	20,837	16,932	8,809	3,985	23.1	103.8	108.5
Electric motors driven by purchased energy.....	11,040	4,271	559	.....	158.5	604.0	.....
Principal expenses, total <sup>6</sup> .....	\$6,882,303	\$8,205,344	\$2,023,919	\$1,395,461	-16.1	305.4	45.0
Salaries <sup>4</sup> .....	\$841,015	\$842,319	\$224,887	\$150,505	-0.2	274.6	49.4
Wages.....	\$3,757,993	\$5,367,082	\$1,361,022	\$658,892	-30.0	294.2	42.0
Contract work.....	\$20,058	\$125,855	\$48,068	\$13,241	-84.1	162.9	263.0
Supplies and materials.....	\$1,493,802	\$1,416,999	\$280,953	.....	5.4	404.4	.....
Fuel.....	\$524,782	\$397,655	.....	\$272,823	32.0	.....	42.7
Purchased electric energy.....	\$244,548	\$54,934	\$108,389	.....	345.2	317.6	.....
Value of products, total <sup>7</sup> .....	\$10,753,445	\$10,089,298	\$2,045,948	\$2,061,072	6.6	242.4	42.9
Clay—							
Quantity (tons, 2,000 pounds).....	4,310,172	( <sup>8</sup> )	( <sup>8</sup> )	1,416,200			
Value at mine.....	\$10,716,822	\$9,712,641	( <sup>8</sup> )	\$2,025,116			
Other products <sup>9</sup> .....	\$36,623	\$373,657	( <sup>8</sup> )	\$35,956			

<sup>1</sup> See GENERAL EXPLANATIONS—The Enterprise.<sup>2</sup> Operators.<sup>3</sup> Not reported.<sup>4</sup> Includes data for salaried officers and employees of "Central Administrative" offices.<sup>5</sup> See GENERAL EXPLANATIONS—Persons Engaged.<sup>6</sup> See GENERAL EXPLANATIONS—Expenses.<sup>7</sup> See GENERAL EXPLANATIONS—Value of Products.<sup>8</sup> No data.<sup>9</sup> Miscellaneous secondary products, and receipts for services performed for others and for power sold.

TABLE 3.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO TYPE OF OWNERSHIP, FOR SELECTED STATES: 1929

STATE AND TYPE OF OWNERSHIP	Number of enterprises	Number of mines	Wage earners (average for the year)	Value of products	STATE AND TYPE OF OWNERSHIP	Number of enterprises	Number of mines	Wage earners (average for the year)	Value of products
United States, total.....	199	236	4,139	\$10,753,445	New Jersey, total.....	17	19	328	\$801,528
Corporate.....	122	136	3,349	8,392,400	Corporate.....	9	9	224	556,858
Other <sup>1</sup> .....	77	100	790	2,360,985	Other <sup>1</sup> .....	8	10	104	244,670
Georgia, total.....	9	11	797	2,161,812	Kentucky, total.....	9	11	210	691,682
Corporate.....	5	7	647	1,468,706	Corporate <sup>2</sup> .....	9	11	210	691,682
Other <sup>1</sup> .....	4	4	150	693,106	Florida, total.....	4	4	160	555,875
Pennsylvania, total.....	31	34	555	1,215,882	Corporate.....	4	4	160	555,875
Corporate.....	17	18	403	866,633	Ohio, total.....	19	22	176	457,606
Other <sup>1</sup> .....	14	16	152	349,249	Corporate.....	7	8	131	366,084
South Carolina, total.....	9	10	514	950,187	Other <sup>1</sup> .....	12	14	45	91,522
Corporate.....	9	10	514	950,187	California, total.....	12	19	143	431,698
Missouri, total.....	21	29	314	916,532	Corporate.....	6	6	111	336,489
Corporate.....	10	10	180	303,388	Other <sup>1</sup> .....	6	13	32	95,204
Other <sup>1</sup> .....	11	19	134	523,144					

<sup>1</sup> Partnerships, enterprises operated by individuals, etc.<sup>2</sup> Includes 2 other types of ownership; combined in order to avoid disclosing data for individual enterprises.

TABLE 4.—SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO TYPE OF MINE AND QUANTITY OF PRODUCT: 1929

TYPE OF MINE AND QUANTITY OF PRODUCT PER ENTERPRISE (tons, 2,000 pounds)	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	Cost of supplies	Cost of fuel	Cost of purchased electric energy	Clay mined, tons (2,000 pounds)	Value of products	HORSEPOWER RATING OF POWER EQUIPMENT		AVERAGE PER TON			Tons per wage earner
										Prime movers	Electric motors driven by purchased electric energy	Wages	Supplies, fuel, and purchased electric energy	Value of products	
United States, total.....	199	236	4,139	\$3,757,998	\$1,493,992	\$524,782	\$244,548	4,385,172	\$10,753,445	20,837	11,040	\$0.86	\$0.52	\$2.45	1,059
Clay operations, not including those of clay-products and cement manufacturers:															
Open-pit mines, total.....	136	163	2,979	2,489,800	984,420	441,318	194,880	1,786,052	7,743,121	12,986	9,015	1.39	0.91	4.34	600
Less than 25,000.....	117	140	1,567	1,348,580	591,135	224,587	103,260	882,837	3,853,150	9,114	4,434	1.53	0.97	4.36	593
25,000 to 49,999.....	10	12	551	502,875	144,198	105,722	44,067	313,103	1,198,564	2,312	2,211	1.61	0.94	3.23	508
50,000 to 99,999.....	9	11	861	638,345	309,087	111,009	47,553	590,112	2,691,898	1,510	2,370	1.08	0.79	4.56	685
Underground mines, total.....	34	37	614	648,033	186,937	29,248	27,680	724,156	1,493,531	916	1,331	0.89	0.34	2.06	1,179
Less than 25,000.....	23	26	217	220,246	42,240	4,937	10,937	267,043	476,370	416	526	0.80	0.22	1.78	1,231
25,000 to 49,999.....	11	11	397	418,787	144,691	24,311	16,693	467,113	1,017,161	500	805	0.92	0.41	2.28	1,151
Enterprises which reported both open-pit and underground operations.....	11	17	265	278,898	206,224	23,487	7,074	432,866	844,149	1,013	407	0.94	0.55	1.95	1,627
Clay operations reported by cement manufacturers, total.....	18	19	281	341,267	116,411	30,729	14,964	1,442,098	672,644	5,972	287	0.24	0.11	0.47	5,132
Open-pit mines, total.....	15	16	197	228,186	100,169	27,951	11,364	1,379,380	520,631	5,870	247	0.16	0.10	0.38	7,002
25,000 to 49,999.....	3	3	21	27,154	10,505	1,332	-----	119,023	60,037	-----	-----	0.23	0.15	0.50	5,068
50,000 to 99,999.....	7	8	94	97,266	27,522	10,159	9,820	492,736	206,594	5,604	155	0.20	0.10	0.42	5,242
100,000 to 499,999.....	5	6	32	98,766	59,142	16,460	1,544	767,621	254,030	276	92	0.13	0.10	0.33	9,361
Other.....	3	3	84	118,081	16,242	2,778	3,600	62,718	152,013	93	40	1.88	0.36	2.42	747

TABLE 5.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO VALUE OF PRODUCTS, FOR SELECTED STATES: 1929

STATE AND VALUE OF PRODUCTS PER ENTERPRISE	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	VALUE OF PRODUCTS		STATE AND VALUE OF PRODUCTS PER ENTERPRISE	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	VALUE OF PRODUCTS	
					Amount	Per cent of total						Amount	Per cent of total
United States, total.....	199	236	4,139	\$3,757,998	\$10,753,445	100.0	New Jersey, total.....	17	19	328	\$371,311	\$801,528	100.0
Less than \$20,000.....	91	99	463	435,708	854,348	7.9	Less than \$20,000.....	4	4	23	10,999	28,583	3.6
\$20,000 to \$49,999.....	53	67	697	680,973	1,643,745	15.3	\$20,000 to \$49,999.....	6	8	68	62,768	193,268	24.1
\$50,000 to \$99,999.....	29	35	787	777,609	1,993,318	18.5	\$50,000 to \$99,999.....	5	5	2	288,554	579,677	72.3
\$100,000 to \$249,999.....	16	16	836	799,333	2,122,956	19.7	\$100,000 to \$249,999.....	2	2	1	-----	-----	-----
\$250,000 to \$499,999.....	8	16	1,356	1,064,325	4,139,077	38.5	\$250,000 to \$499,999.....	1	1	1	-----	-----	-----
\$500,000 to \$999,999.....	2	3	-----	-----	-----	-----	Kentucky, total.....	9	11	210	163,112	691,682	100.0
Georgia, total.....	9	11	797	589,349	2,161,812	100.0	Less than \$20,000.....	4	5	18	14,163	28,101	4.1
Less than \$20,000.....	2	2	-----	-----	-----	-----	\$20,000 to \$49,999.....	2	3	2	188,949	663,581	95.9
\$20,000 to \$49,999.....	1	1	1	118,562	378,596	17.5	\$50,000 to \$99,999.....	2	2	1	-----	-----	-----
\$50,000 to \$99,999.....	1	1	1	-----	-----	-----	\$250,000 to \$499,999.....	1	1	1	-----	-----	-----
\$100,000 to \$249,999.....	1	1	1	-----	-----	-----	Florida, total.....	4	4	160	122,830	555,875	100.0
\$250,000 to \$499,999.....	3	5	1	470,787	1,733,216	82.5	Less than \$20,000.....	1	1	1	-----	-----	-----
\$500,000 to \$999,999.....	1	1	1	-----	-----	-----	\$20,000 to \$49,999.....	1	1	1	122,830	555,875	100.0
Pennsylvania, total.....	31	34	555	575,992	1,215,882	100.0	\$100,000 to \$249,999.....	1	1	1	-----	-----	-----
Less than \$20,000.....	14	16	86	82,264	148,632	12.2	\$250,000 to \$499,999.....	1	1	1	-----	-----	-----
\$20,000 to \$49,999.....	9	10	128	146,324	231,842	23.2	Ohio, total.....	19	22	176	193,256	457,606	100.0
\$50,000 to \$99,999.....	4	4	105	135,074	277,353	22.8	Less than \$20,000.....	14	17	54	51,763	113,857	24.9
\$100,000 to \$249,999.....	4	4	236	212,330	508,055	41.8	\$20,000 to \$49,999.....	3	3	2	141,493	343,749	75.1
South Carolina, total.....	9	10	514	336,500	950,187	100.0	\$100,000 to \$249,999.....	2	2	1	-----	-----	-----
Less than \$20,000.....	4	4	37	30,204	40,785	4.3	California, total.....	12	19	143	165,425	431,693	100.0
\$20,000 to \$49,999.....	2	2	1	306,296	900,402	95.7	Less than \$20,000.....	6	6	23	23,131	60,807	14.1
\$50,000 to \$99,999.....	2	2	1	-----	-----	-----	\$20,000 to \$49,999.....	2	9	9	-----	-----	-----
\$100,000 to \$249,999.....	1	1	1	-----	-----	-----	\$50,000 to \$99,999.....	3	3	1	139,294	370,886	85.9
\$250,000 to \$499,999.....	1	1	1	-----	-----	-----	\$100,000 to \$249,999.....	1	1	1	-----	-----	-----
Missouri, total.....	21	29	314	320,512	916,532	100.0							
Less than \$20,000.....	6	7	43	39,538	60,278	6.6							
\$20,000 to \$49,999.....	11	14	128	129,259	320,432	35.0							
\$50,000 to \$99,999.....	2	6	1	151,715	535,822	58.5							
\$100,000 to \$249,999.....	1	1	1	-----	-----	-----							
\$250,000 to \$499,999.....	1	1	1	-----	-----	-----							

1 Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

## MINES AND QUARRIES

TABLE 6.—NUMBER AND RATED CAPACITY OF PRIME MOVERS, MOTORS, AND GENERATORS, FOR ENTERPRISES CLASSIFIED ACCORDING TO TOTAL RATING OF POWER EQUIPMENT, FOR THE UNITED STATES: 1929

TYPE	Total, all sizes	RATING OF POWER EQUIPMENT FOR ENTERPRISES INDIVIDUALLY REPORTING TOTAL HORSEPOWER OF—					
		Less than 25	25 to 99	100 to 249	250 to 499	500 to 999	1,000 or more
Number of enterprises reporting power equipment <sup>1</sup> .....	139	19	53	33	18	11	5
Prime movers and electric motors driven by purchased energy, aggregate horsepower.....	31,877	295	3,224	5,330	6,244	7,240	9,535
Prime movers, total horsepower.....	20,837	197	1,908	3,433	3,355	4,350	7,594
Steam engines—							
Number.....	120	3	21	34	17	23	10
Horsepower.....	9,923	55	735	2,060	2,159	2,708	2,200
Steam turbines—							
Number.....	5					4	1
Horsepower.....	4,989					800	4,189
Internal-combustion engines—							
Number.....	178	14	54	43	28	21	18
Horsepower.....	5,745	142	1,173	1,307	1,190	602	1,205
Water wheels—							
Number.....	2					2	
Horsepower.....	180					180	
Horsepower rating of inactive prime movers, included above.....	247		72		75	100	
Electric motors driven by purchased energy—							
Number.....	718	19	90	124	127	277	81
Horsepower.....	11,040	98	1,316	1,897	2,889	2,899	1,941
Electric motors driven by energy generated by enterprises reporting:							
Number.....	85	2		13	9	61	
Horsepower.....	1,011	8		78	400	525	
Electric generators:							
Number.....	0	1		1	2	5	
Kilowatts.....	802	15		30	315	502	

<sup>1</sup> No power equipment was reported by 60 enterprises.

TABLE 7.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO NUMBER OF DAYS IN OPERATION IN 1929, FOR THE UNITED STATES

DAYS IN OPERATION	Number of enterprises	Number of mines	Wage earners, Dec. 14 or nearest representative day	Wages	Value of products	DAYS IN OPERATION	Number of enterprises	Number of mines	Wage earners, Dec. 14 or nearest representative day	Wages	Value of products
Total.....	190	236	4,118	\$3,757,998	\$10,753,445	150 to 199.....	17	21	92	\$64,611	\$208,687
Less than 50.....	1	1	12	6,355	18,693	200 to 249.....	33	37	567	508,775	1,486,401
50 to 74.....	2	2				250 to 299.....	43	50	1,176	1,083,970	3,126,401
100 to 149.....	7	8				300 and over.....	96	117	2,218	2,060,471	5,804,736

<sup>1</sup> This total differs slightly from that for "Wage earners (average for the year)," 4,139, given in other tables of this report. See GENERAL EXPLANATIONS—Persons Engaged.

<sup>2</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

TABLE 8.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO NUMBER OF WAGE EARNERS, FOR THE UNITED STATES AND FOR SELECTED STATES: 1929

STATE AND NUMBER OF WAGE EARNERS PER ENTERPRISE	Number of enterprises	Number of mines	WAGE EARNERS (average for the year)		Wages	Value of products	STATE AND NUMBER OF WAGE EARNERS PER ENTERPRISE	Number of enterprises	Number of mines	WAGE EARNERS (average for the year)		Wages	Value of products
			Number	Per cent of total						Number	Per cent of total		
United States, total.....	199	236	4,139	100.0	\$3,757,998	\$10,733,445	Missouri, total.....	21	29	314	100.0	\$320,512	\$916,532
Not reported.....	2	2					1 to 5.....	3	4	11	3.5	8,000	26,830
1 to 5.....	60	67	1,185	4.5	170,701	477,060	6 to 20.....	13	20	130	41.4	122,386	356,892
6 to 20.....	86	104	960	23.2	961,822	2,535,495	21 to 50.....	5	5	173	55.1	189,526	532,110
21 to 50.....	35	36	1,169	28.0	1,217,051	3,229,654	Kentucky, total.....	9	11	210	100.0	163,112	691,682
51 to 100.....	11	14	829	20.0	670,367	2,218,588	1 to 5.....	3	4	10	4.8	6,963	18,301
101 to 250.....	3	3					6 to 20.....	3	3	40	19.0	30,093	92,618
251 to 500.....	2	3	1,006	24.3	737,967	2,292,648	21 to 50.....	2	3	160	76.2	116,056	580,763
							51 to 100.....	1	1				
Georgia, total.....	9	11	797	100.0	589,349	2,161,812	Ohio, total.....	19	22	176	100.0	193,256	457,606
1 to 5.....	1	1					1 to 5.....	10	11	26	14.8	22,838	50,708
6 to 20.....	2	2	160	7.5	46,687	463,273	6 to 20.....	6	8	57	32.4	57,889	133,846
21 to 50.....	1	1					21 to 50.....	3	3	93	52.8	112,520	273,052
51 to 100.....	2	2					Florida, total.....	4	4	160	100.0	122,830	555,875
101 to 250.....	2	4	1,737	92.5	542,762	1,698,539	1 to 5.....	1	1				
251 to 500.....	1	1					21 to 50.....	2	2	160	100.0	122,830	555,875
Pennsylvania, total.....	31	34	555	100.0	575,992	1,215,882	51 to 100.....	1	1				
1 to 5.....	8	10	23	4.1	21,032	74,160	California, total.....	12	19	143	100.0	165,425	431,693
6 to 20.....	16	17	180	32.4	187,212	521,545	1 to 5.....	4	4	10	7.0	11,543	30,273
21 to 50.....	4	4	184	24.1	172,398	239,577	6 to 20.....	6	13	133	93.0	153,882	401,420
51 to 100.....	3	3	218	39.3	195,350	380,600	21 to 50.....	2	2				
South Carolina, total.....	9	10	514	100.0	336,500	950,187							
1 to 5.....	2	2	174	14.4	53,702	122,427							
6 to 20.....	3	3											
21 to 50.....	1	1											
51 to 100.....	2	2	1,440	85.0	282,798	827,760							
251 to 500.....	1	2											
New Jersey, total.....	17	19	328	100.0	371,311	801,528							
1 to 5.....	4	5	14	4.3	18,395	45,205							
6 to 20.....	6	7	68	20.7	67,456	202,443							
21 to 50.....	7	7	246	75.0	200,460	553,880							

1 Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

TABLE 9.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO PREVAILING HOURS OF LABOR PER WEEK, FOR THE UNITED STATES AND FOR SELECTED STATES: 1929

STATE AND PREVAILING HOURS OF LABOR PER WEEK	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	Value of products	STATE AND PREVAILING HOURS OF LABOR PER WEEK	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	Value of products
Under 25.....	2	2				40.....	1	1	150	171,891	508,158
25 and over but under 36.....	3	3	78	60,969	286,479	44 and over but under 48.....	4	4	76	77,021	166,653
36 and over but under 40.....	1	1				48.....	9	10	82	71,600	241,721
40.....	3	3	98	91,795	214,120	54 and over but under 63.....	7	14			
Over 40 but under 44.....	1	1				Kentucky, total.....	9	11	210	163,112	691,682
44 and over but under 48.....	12	13	281	263,542	872,538	36 and over but under 40.....	1	1	210	163,112	691,682
48.....	78	91	744	786,914	1,554,145	Over 48 but under 54.....	1	2			
Over 48 but under 54.....	20	23	311	289,676	760,957	54 and over but under 63.....	7	8			
54 and over but under 63.....	67	84	1,710	1,680,139	5,177,323	Ohio, total.....	19	22	176	193,256	457,606
63 and over.....	10	13	917	679,903	1,773,133	44 and over but under 48.....	3	4	19	18,010	33,023
Georgia, total.....	9	11	797	589,349	2,161,812	48.....	11	13	90	109,346	235,197
44 and over but under 48.....	1	1	22	15,587	43,273	Over 48 but under 54.....	1	1	67	65,900	189,386
48.....	2	2				54 and over but under 63.....	4	4			
54 and over but under 63.....	3	3	355	236,883	1,335,074	Florida, total.....	4	4	160	122,830	555,875
63 and over.....	3	5	420	336,879	783,465	Under 25.....	1	1	160	122,830	555,875
Pennsylvania, total.....	31	34	555	575,992	1,215,882	Over 40 but under 44.....	1	1			
25 and over but under 36.....	2	2	15	14,559	66,434	44 and over but under 48.....	1	1			
44 and over but under 48.....	1	1				54 and over but under 63.....	1	1			
48.....	16	19	248	250,508	490,781	California, total.....	12	19	143	165,425	431,693
Over 48 but under 54.....	3	3	292	310,925	658,667	Under 25.....	1	1	90	101,494	227,658
54 and over but under 63.....	8	8				48.....	8	15	53	63,931	204,035
63 and over.....	1	1				Over 48 but under 54.....	1	1			
South Carolina, total.....	9	10	514	336,500	950,187	54 and over but under 63.....	2	2			
48.....	1	1	32	25,888	63,297						
Over 48 but under 54.....	2	2									
54 and over but under 63.....	3	3	42	27,814	59,180						
63 and over.....	3	4	440	282,798	827,760						
New Jersey, total.....	17	19	328	371,311	801,528						
48.....	4	4	38	46,450	105,068						
Over 48 but under 54.....	6	7	110	93,282	268,327						
54 and over but under 63.....	7	8	180	231,579	428,133						

1 Exclusive of 2 enterprises which reported no wage earners.  
 2 Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.



MINES AND QUARRIES

TABLE 10.—WAGE EARNERS, BY MONTHS, BY STATES: 1929

[The month of maximum employment is indicated by bold-faced figures and that of minimum employment by *italic* figures]

STATE	Average number employed during year	NUMBER EMPLOYED ON 15TH DAY OF MONTH OR NEAREST REPRESENTATIVE DAY												Per cent minimum of maximum
		January	February	March	April	May	June	July	August	September	October	November	December	
United States.....	4, 139	4, 024	<b>4, 016</b>	4, 181	4, 221	4, 239	4, 201	4, 180	4, 157	4, 126	4, 185	4, 117	4, 020	94. 7
<i>Individual States</i>														
Alabama.....	65	65	65	65	65	65	66	65	65	65	66	65	63	95. 5
California.....	143	132	132	133	139	143	139	145	146	153	161	167	141	82. 0
Colorado.....	46	47	47	50	49	46	50	48	47	46	45	41	43	82. 0
Florida.....	160	179	177	179	179	165	160	168	147	151	146	142	140	78. 2
Georgia.....	797	765	768	829	822	834	833	813	791	757	742	803	823	88. 4
Illinois.....	102	98	100	98	100	103	111	107	103	101	104	107	87	78. 4
Kentucky.....	210	208	<b>205</b>	<b>205</b>	209	213	212	215	213	213	213	207	210	95. 3
Michigan.....	66	49	42	40	55	62	66	65	63	59	62	61	46	60. 6
Missouri.....	314	317	317	315	322	316	312	313	315	309	319	304	311	94. 4
New Jersey.....	328	316	308	320	325	336	335	337	336	331	345	322	302	85. 0
New York.....	26	18	18	18	18	26	29	30	31	33	33	32	27	54. 5
Ohio.....	176	139	155	164	155	174	154	162	171	188	204	209	202	60. 5
Pennsylvania.....	555	576	569	581	570	572	543	536	529	547	554	553	531	91. 0
South Carolina.....	514	515	541	541	547	547	527	524	522	612	605	460	439	78. 8
Wyoming.....	55	59	45	61	66	62	63	54	53	65	64	44	50	50. 1
<i>Groups of States</i>														
Del., Md., N. C., Vt., Va., W. Va.....	279	262	243	282	274	261	238	295	310	295	290	291	288	76. 3
Ind., Kans., Wis.....	126	115	93	141	134	126	128	127	126	126	134	133	132	66. 0
Miss., Okla., Tenn., Tex.....	180	180	180	180	180	180	180	180	180	181	181	181	181	99. 4
NeV., Utah.....	7	4	6	6	8	8	7	6	9	14	12	4	4	28. 6

TABLE 11.—DETAILED STATISTICS FOR THE INDUSTRY, BY STATES: 1929

	United States	Alabama	California	Colorado	Florida	Georgia	Illinois	Kentucky	Michigan	Missouri
Number of enterprises <sup>1</sup> .....	199	5	12	9	4	9	10	9	4	21
Number of mines <sup>2</sup> .....	236	6	19	9	4	11	11	11	4	29
Persons engaged, total.....	4, 560	70	163	62	183	847	118	232	57	357
Proprietors and firm members.....	72	1	2	4	.....	6	7	3	.....	10
Principal salaried officers of corporations <sup>3</sup> .....	85	1	4	3	10	6	7	5	.....	24
Other salaried officers and employees <sup>3</sup> .....	264	3	14	9	13	38	7	14	1	34
Wage earners (average for the year).....	4, 139	65	143	40	160	797	102	210	56	314
Principal expenses, total.....	\$6, 833, 353	\$93, 113	\$281, 716	\$62, 881	\$369, 200	\$1, 274, 569	\$146, 597	\$238, 931	\$110, 288	\$548, 551
Salaries and wages of—										
Principal officers of corporations <sup>3</sup> .....	\$274, 370	\$8, 490	\$33, 600	\$480	\$25, 998	\$23, 820	\$10, 500	\$21, 300	.....	\$17, 695
Other salaried officers and employees <sup>3</sup> .....	\$517, 605	\$8, 303	\$30, 431	\$6, 050	\$23, 497	\$100, 499	\$10, 945	\$26, 462	\$3, 360	\$45, 401
Wage earners.....	\$3, 757, 998	\$58, 278	\$185, 425	\$50, 774	\$122, 830	\$559, 349	\$98, 675	\$153, 112	\$65, 561	\$320, 512
Contract work.....	\$20, 058	\$154	\$5, 528	.....	.....	\$1, 168	.....	.....	.....	\$1, 086
Supplies.....	\$1, 493, 092	\$16, 607	\$33, 244	\$4, 523	\$88, 770	\$315, 793	\$13, 226	\$31, 756	\$27, 957	\$122, 391
Fuel.....	\$524, 732	\$2, 426	\$9, 583	\$754	\$62, 765	\$180, 963	\$5, 341	\$4, 811	\$13, 110	\$20, 990
Purchased electric energy.....	\$244, 548	\$1, 857	\$3, 905	\$300	\$46, 316	\$62, 937	\$7, 910	\$1, 500	.....	\$20, 506
Expenditures for development (included above in "Principal expenses" <sup>1</sup> ).....	\$94, 000	.....	\$32, 000	\$1, 000	.....	\$18, 000	\$2, 000	\$2, 000	\$3, 000	\$10, 000
Value of products.....	\$10, 753, 445	\$134, 686	\$431, 693	\$115, 537	\$555, 875	\$2, 161, 812	\$219, 593	\$691, 682	\$138, 583	\$616, 532
Quantity of clay produced (tons, 2,000 pounds).....	4, 310, 172	159, 171	313, 354	104, 480	41, 893	295, 472	159, 015	134, 018	474, 029	384, 958
Machinery and other equipment purchased during the year, total cost.....	\$458, 753	.....	\$20, 899	\$117	\$17, 020	\$25, 307	\$7, 408	\$8, 005	.....	\$26, 198
Prime movers and electric motors driven by purchased energy, aggregate horsepower.....	31, 877	212	1, 238	90	2, 012	3, 581	603	515	275	1, 168
Prime movers, total horsepower.....	20, 837	93	673	90	925	1, 295	216	369	275	564
Steam engines—										
Number.....	120	.....	1	5	.....	23	3	3	2	.....
Horsepower.....	9, 923	.....	100	30	.....	1, 180	170	105	275	.....
Steam turbines—										
Number.....	5	.....	.....	.....	4	.....	.....	.....	.....	.....
Horsepower.....	4, 989	.....	.....	.....	800	.....	.....	.....	.....	.....
Internal-combustion engines—										
Number.....	178	3	20	2	4	4	1	13	.....	27
Horsepower.....	5, 745	93	578	60	125	115	46	264	.....	564
Water wheels and water turbines—										
Number.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
Horsepower.....	180	.....	.....	.....	.....	.....	.....	.....	.....	.....
Electric motors driven by purchased energy—										
Number.....	718	3	25	.....	124	180	43	11	.....	41
Horsepower.....	11, 040	119	560	.....	1, 087	2, 286	387	146	.....	604
Electric motors driven by energy generated by enterprises reporting:										
Number.....	85	.....	.....	.....	.....	.....	.....	2	.....	.....
Horsepower.....	1, 011	.....	.....	.....	.....	.....	.....	8	.....	.....
Electric generators:										
Number.....	9	.....	.....	.....	.....	.....	.....	1	.....	.....
Kilowatts.....	862	.....	.....	.....	.....	.....	.....	15	.....	.....

See footnotes at end of table.



## MINES AND QUARRIES—GYPSUM

**Scope of the report.**—This report gives the results of the census of mines and quarries for 1929 for the gypsum-mining industry. It shows the progress of the industry by comparison of the results of the census for 1929 with those for the last three preceding censuses of mines and quarries; the geographic distribution of the industry by States; the size of operating enterprises; power equipment, by kind, number, and capacity; time in operation for enterprises and length of working week for wage earners; the numbers of persons engaged in the industry, classified as proprietors and firm members, salaried officers and employees, and wage earners; and fuel consumption, by kind. It includes a table presenting statistics in detail for the United States as a whole and for those States for which separate figures can be given without disclosing, exactly or approximately, the data reported by individual enterprises.

Unlike reports for the censuses for 1919 and earlier years, this report relates only to the mining and bene-

ficiation of crude gypsum, and does not include data for calcining and the manufacture of gypsum products. The statistics for earlier years include data for calcining operations carried on by gypsum-mining enterprises and, in a few instances for which segregated returns were not received, data for the manufacture of gypsum products are also included. Accordingly, the figures for the several years shown are not strictly comparable.

Differences in the value of products as reported by the Bureau of the Census and the Bureau of Mines.—Table 1 gives the value of crude gypsum as reported by the Bureau of the Census, and the value of gypsum (including that calcined by mining enterprises) sold or used by producers during 1929 as reported by the Bureau of Mines. As most of the product was calcined by producers, the two sets of figures are not comparable and should not be confused. In terms of crude gypsum produced, the quantity reported to the Census Bureau was 5,151,876 tons, as compared with 5,016,132 tons, given in the report of the Bureau of Mines.

TABLE 1.—COMPARISON OF VALUE OF PRODUCTS AS REPORTED BY BUREAU OF THE CENSUS AND BY BUREAU OF MINES, FOR THE UNITED STATES: 1929

STATE	BUREAU OF THE CENSUS	BUREAU OF MINES <sup>1</sup>	STATE	BUREAU OF THE CENSUS	BUREAU OF MINES <sup>1</sup>	STATE	BUREAU OF THE CENSUS	BUREAU OF MINES <sup>1</sup>
	Value of crude gypsum produced	Value of gypsum (including calcined) sold or used by producers		Value of crude gypsum produced	Value of gypsum (including calcined) sold or used by producers		Value of crude gypsum produced	Value of gypsum (including calcined) sold or used by producers
United States	\$5,740,188	\$31,292,960	Nevada	\$366,702	\$1,290,854	Oklahoma	\$297,038	\$2,255,374
Michigan	645,399	4,315,334	New York	2,092,711	8,330,852	Texas	498,570	3,440,287
			Ohio	307,863	3,301,440	Other States <sup>2</sup>	1,441,305	8,349,828

<sup>1</sup> Mineral Resources of the United States, 1929.

<sup>2</sup> Arizona, California, Colorado, Iowa, Kansas, Montana, South Dakota, Utah, Virginia, and Wyoming. (In addition, data for New Mexico are included in figures of Bureau of Mines.)

TABLE 2.—SUMMARY FOR THE UNITED STATES: 1902-1929

[This and all following tables cover producing enterprises only]

	1929	1919	1909	1902	PER CENT OF INCREASE OR DECREASE (—)		
					1919-1929	1909-1919	1902-1909
					(%)	(%)	(%)
Number of enterprises <sup>1</sup>	60	47	78	45	(?)	(?)	(?)
Number of mines	63	48	222	62	(?)	-78.4	(?)
Persons engaged, total	2,214	2,477	3,809		-10.6	-36.5	
Proprietors and firm members	2	4	6	(?)	(?)	(?)	
Salaried officers and employees	184	282	431	249	-52.5	-34.6	73.1
Wage earners (average for the year) <sup>2</sup>	2,078	2,191	3,462	1,472	-5.2	-36.7	135.2
Power equipment, total horsepower	26,498	15,032	17,685	7,319	76.3	-15.0	141.6
Principal expenses, total <sup>3</sup>	\$4,157,610	\$5,228,346	\$3,949,441	\$1,401,844	-20.5	32.4	181.7
Salaries	306,659	555,450	551,889	300,420	-44.8	0.6	83.7
Wages	2,627,783	2,478,391	1,820,877	759,258	6.0	36.1	139.8
Contract work	7,094	3,747	16,558	406	86.9	-77.4	3,978.3
Supplies and materials	794,733	1,530,338	986,658		-48.1	55.1	
Fuel	136,504	516,148		341,760	-73.6		356.5
Purchased electric energy	284,977	144,272	573,459		97.5	15.2	
Value of products <sup>4</sup>	5,740,188	6,805,940	5,812,810	2,089,341	-15.7	17.1	178.2

<sup>1</sup> See GENERAL EXPLANATIONS—The Enterprise.

<sup>2</sup> Per cent not computed where base is less than 100.

<sup>3</sup> Not reported.

<sup>4</sup> See GENERAL EXPLANATIONS—Persons Engaged.

<sup>5</sup> See GENERAL EXPLANATIONS—Expenses.

<sup>6</sup> See GENERAL EXPLANATIONS—Value of Products.

TABLE 3.—SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO QUANTITY OF PRODUCT: 1929

QUANTITY OF PRODUCT PER ENTERPRISE (tons, 2,000 pounds)	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	Cost of supplies	Cost of fuel	Cost of purchased electric energy	Gypsum produced, tons (2,000 pounds)	Value of products	HORSEPOWER RATING OF POWER EQUIPMENT		AVERAGE PER TON			Tons per wage earner
										Prime movers	Electric motors driven by purchased energy	Wages	Supplies, fuel, and purchased electric energy	Value of products	
Total.....	60	63	2,078	\$2,627,733	\$704,733	\$136,604	\$284,977	5,161,876	\$5,740,188	5,348	21,150	\$0.51	\$0.24	\$1.11	2.479
Less than 5,000.....	3	3	11	10,800	1,805	1,220	100	6,999	18,261	62	90	1.54	.40	2.01	0.636
5,000 to 9,999.....	7	7	45	46,931	9,119	2,398	9,012	47,805	112,196	1,348	1,348	.98	.43	2.35	1.032
10,000 to 24,999.....	11	11	94	111,328	43,885	3,027	8,204	178,981	230,230	70	581	.62	.31	1.20	1.904
25,000 to 49,999.....	8	8	197	223,778	45,725	12,627	23,291	314,179	498,859	710	2,077	.71	.26	1.69	1.595
50,000 to 99,999.....	16	18	611	745,609	245,888	58,768	76,329	1,180,824	1,738,701	1,746	5,571	.63	.32	1.47	1.933
100,000 to 199,999.....	10	11	1,120	1,439,292	448,251	58,464	168,041	3,423,088	3,141,842	2,760	11,483	.44	.20	.02	3.056
200,000 to 499,999.....	5	5													

<sup>1</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

TABLE 4.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO VALUE OF PRODUCTS, FOR SELECTED STATES: 1929

STATE AND VALUE OF PRODUCTS PER ENTERPRISE	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	VALUE OF PRODUCTS		STATE AND VALUE OF PRODUCTS PER ENTERPRISE	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	VALUE OF PRODUCTS		
					Amount	Per cent of total						Amount	Per cent of total	
United States, total.....	60	63	2,078	\$2,627,733	\$5,740,188	100.0	Michigan, total.....	6	7	244	\$312,464	\$645,399	100.0	
Less than \$20,000.....	14	14	62	65,033	128,694	2.2	\$20,000 to \$49,999.....	2	2	1	312,464	645,399	100.0	
\$20,000 to \$49,999.....	10	10	117	135,600	309,266	5.4	\$100,000 to \$249,999.....	4	5	1				
\$50,000 to \$99,999.....	11	12	297	352,213	828,970	14.4	Texas, total.....	5	6	111	124,015	408,570	100.0	
\$100,000 to \$249,999.....	21	23	1,165	1,438,716	3,042,725	53.0	Less than \$20,000.....	1	1	1	124,015	408,570	100.0	
\$250,000 to \$499,999.....	3	3	1,437	641,181	1,432,533	25.0	\$50,000 to \$99,999.....	2	3	1				
\$500,000 to \$999,999.....	1	1					\$100,000 to \$249,999.....	2	2					
New York, total.....	11	11	737	1,001,115	2,092,711	100.0	Iowa and Kansas, total.....	10	10	314	371,014	875,930	100.0	
\$20,000 to \$49,999.....	1	1	1	84	102,218	195,860	9.3	Less than \$20,000.....	3	3	20	18,943	32,912	3.8
\$50,000 to \$99,999.....	2	2			323,214	716,808	34.3	\$20,000 to \$49,999.....	1	1	1	63,132	166,811	19.0
\$100,000 to \$249,999.....	5	5	1,397	572,633	1,180,537	56.4	\$50,000 to \$99,999.....	2	2	1	288,939	670,207	77.2	
\$250,000 to \$499,999.....	2	2					\$100,000 to \$249,999.....	3	3					
\$500,000 to \$999,999.....	1	1					\$250,000 to \$499,999.....	1	1					

<sup>1</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

TABLE 5.—NUMBER AND RATED CAPACITY OF PRIME MOVERS, MOTORS, AND GENERATORS, FOR ENTERPRISES CLASSIFIED ACCORDING TO TOTAL RATING OF POWER EQUIPMENT: 1929

TYPE	Total, all sizes	RATING OF POWER EQUIPMENT FOR ENTERPRISES INDIVIDUALLY REPORTING TOTAL HORSEPOWER OF—					
		Less than 25	25 to 99	100 to 249	250 to 499	500 to 999	1,000 or more
Number of enterprises reporting power equipment <sup>1</sup> .....	55	6	11	12	4	10	6
Prime movers and electric motors driven by purchased energy, aggregate horsepower.....	20,498	84	716	2,363	1,176	10,801	11,358
Prime movers, total horsepower.....	5,348		291	640	848	2,300	1,369
Steam engines—							
Number.....	10			1	1		3
Horsepower.....	1,599			210	20		1,369
Internal-combustion engines—							
Number.....	43		10	4	12	17	
Horsepower.....	3,719		261	330	828	2,300	
Water wheels and water turbines—							
Number.....	1		1				
Horsepower.....	30		30				
Horsepower rating of inactive prime movers, included above.....	284				150		134
Electric motors driven by purchased energy—							
Number.....	792	15	29	104	7	320	317
Horsepower.....	21,150	84	425	1,823	328	8,501	9,989
Electric motors driven by energy generated by enterprises reporting:							
Number.....	107			38	5	47	17
Horsepower.....	1,939			687	139	1,000	122
Electric generators:							
Number.....	12		1	3	1	5	2
Kilowatts.....	1,233		75	348	150	410	250

<sup>1</sup> No power equipment was reported by 5 enterprises.

MINES AND QUARRIES

TABLE 6.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO NUMBER OF DAYS IN OPERATION IN 1929, FOR THE UNITED STATES

DAYS IN OPERATION	Number of enterprises	Number of mines	Wage earners, Dec. 14 or nearest representative day	Wages	Value of products	DAYS IN OPERATION	Number of enterprises	Number of mines	Wage earners, Dec. 14 or nearest representative day	Wages	Value of products
Total.....	60	63	1,912	\$2,627,733	\$5,740,188	200 to 249.....	14	14	352	\$452,650	\$1,168,543
100 to 149.....	2	2	184	236,793	428,930	250 to 299.....	20	22	1,000	1,475,554	2,932,355
150 to 199.....	6	6				300 and over.....	18	10	307	462,736	1,210,360

<sup>1</sup> This total differs from that for "Wage earners (average for the year)," 2,078, given in other tables of this report. See GENERAL EXPLANATIONS—Persons Engaged.  
<sup>2</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

TABLE 7.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO NUMBER OF WAGE EARNERS, FOR THE UNITED STATES AND FOR SELECTED STATES: 1929

STATE AND NUMBER OF WAGE EARNERS PER ENTERPRISE	Number of enterprises	Number of mines	WAGE EARNERS (average for the year)		Wages	Value of products	STATE AND NUMBER OF WAGE EARNERS PER ENTERPRISE	Number of enterprises	Number of mines	WAGE EARNERS (average for the year)		Wages	Value of products
			Number	Per cent of total						Number	Per cent of total		
United States, total.....	60	63	2,078	100.0	\$2,627,733	\$5,740,188	Oklahoma, total.....	4	4	119	100.0	\$151,610	\$297,638
1 to 5.....	10	10	32	1.5	39,307	114,720	6 to 20.....	2	2	119	100.0	151,610	297,638
6 to 20.....	18	19	216	10.4	257,475	735,805	21 to 50.....	1	1				
21 to 50.....	16	17	545	26.2	694,461	1,780,602	51 to 100.....	1	1				
51 to 100.....	14	15	1,285	61.8	1,636,490	3,100,060	Texas, total.....	5	6	111	100.0	124,015	498,570
101 to 250.....	2	2					1 to 5.....	1	1	111	100.0	124,015	498,570
New York, total.....	11	11	737	100.0	1,001,115	2,092,711	6 to 20.....	2	3				
6 to 20.....	1	1	1,167	22.7	223,707	460,644	21 to 50.....	1	2				
21 to 50.....	4	4					51 to 100.....	5	6	99	100.0	128,045	366,702
51 to 100.....	5	5	1,570	77.3	777,408	1,632,067	Nevada, total.....	5	6				
101 to 250.....	1	1					1 to 5.....	1	1	99	100.0	128,045	366,702
Michigan, total.....	6	7	244	100.0	312,464	645,399	6 to 20.....	1	2				
1 to 5.....	1	1	1,50	20.5	75,202	181,670	21 to 50.....	2	3				
6 to 20.....	1	1					51 to 100.....	3	4	314	100.0	371,014	875,930
21 to 50.....	1	1	194	79.5	237,262	463,729	Iowa and Kansas.....	10	10				
51 to 100.....	3	4					1 to 5.....	1	1	20	9.2	27,043	54,001
Ohio, total.....	3	3	182	100.0	249,367	397,863	6 to 20.....	4	4				
6 to 20.....	1	1	1,182	100.0	249,367	397,863	21 to 50.....	4	4				
51 to 100.....	2	2					6 to 20.....	1	1	1,285	90.8	343,971	821,929

<sup>1</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

TABLE 8.—CONDENSED SUMMARY FOR ENTERPRISES CLASSIFIED ACCORDING TO PREVAILING HOURS OF LABOR PER WEEK, FOR THE UNITED STATES AND FOR SELECTED STATES: 1929

STATE AND PREVAILING HOURS OF LABOR PER WEEK	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	Value of products	STATE AND PREVAILING HOURS OF LABOR PER WEEK	Number of enterprises	Number of mines	Wage earners (average for the year)	Wages	Value of products			
United States, total.....	60	63	2,078	\$2,627,733	\$5,740,188	Ohio, total.....	3	3	182	\$249,367	\$397,863			
Under 25.....	1	1	189	112,487	276,481	40.....	1	1	182	249,367	397,863			
25 and over but under 30.....	2	2				44 and over but under 48.....	1	1						
40.....	3	3	44 and over but under 48.....	1	1									
44 and over but under 48.....	1	1	650	861,937	1,721,566	Oklahoma, total.....	4	4	119	151,610	297,638			
48.....	20	20				Over 48 but under 54.....	3	3	119	100.0	151,610	297,638		
Over 48 but under 54.....	3	3	54 and over but under 63.....	28	31	5	6	111					124,015	498,570
54 and over but under 63.....	28	31	1,055	1,330,242	3,103,827				Texas, total.....	5	6	111		
63 and over.....	2	2				New York, total.....	11	11	737	1,001,115	2,092,711	54 and over but under 63.....	4	5
									63 and over.....	1	1			
									Nevada, total.....	5	6	99	128,045	366,702
									48.....	2	2	99	128,045	366,702
									54 and over but under 63.....	3	4			
									Iowa and Kansas, total.....	10	10	314	371,014	875,930
									25 and over but under 36.....	1	1	148	166,272	387,614
									40.....	1	1			
									48.....	5	5			
									54 and over but under 63.....	3	3			

<sup>1</sup> Combined to avoid disclosing, exactly or approximately, the data reported by individual enterprises.

GYPSUM

TABLE 9.—WAGE EARNERS, BY MONTHS, BY STATES: 1929

[The month of maximum employment is indicated by bold-faced figures and that of minimum employment by *italic* figures]

STATE	Average number employed during year	NUMBER EMPLOYED ON 15TH DAY OF MONTH OR NEAREST REPRESENTATIVE DAY												Per cent minimum of maximum
		January	February	March	April	May	June	July	August	September	October	November	December	
United States.....	2,078	2,070	1,952	2,035	2,211	2,230	2,184	2,184	2,239	2,118	2,113	1,913	<i>1,692</i>	75.6
New York.....	737	748	734	724	747	762	762	781	783	781	754	695	<i>679</i>	73.9
Michigan.....	244	104	<i>161</i>	184	238	272	281	283	312	291	284	290	187	51.6
Ohio.....	182	180	185	182	187	182	180	187	187	186	180	172	<i>170</i>	88.5
Oklahoma.....	119	145	134	136	130	138	105	107	113	108	109	101	<i>99</i>	68.3
Texas.....	111	101	113	121	122	116	109	113	109	106	114	108	<i>99</i>	81.1
Nevada.....	99	90	83	118	128	116	111	108	106	102	90	64	<i>59</i>	46.1
Utah.....	21	<i>19</i>	<i>19</i>	<i>19</i>	<i>19</i>	<i>19</i>	22	22	23	23	23	21	21	82.6
Colorado.....	12	9	15	16	16	16	13	13	14	13	6	6	6	37.5
Iowa and Kansas.....	314	358	302	290	335	334	339	337	330	284	317	273	<i>258</i>	72.1
Other States.....	239	217	<i>208</i>	245	282	265	262	233	255	224	236	237	214	73.0

TABLE 10.—DETAILED STATISTICS FOR THE INDUSTRY, BY STATES: 1929

[This table presents statistics for each State for which it is possible to give separate figures without disclosing data for individual enterprises. However, California, Montana, and Virginia were of greater importance in the industry than two of the States shown separately]

	United States	New York	Michigan	Texas	Ohio	Nevada	Oklahoma	Utah	Colorado	Iowa and Kansas	Other States
Number of enterprises <sup>1</sup> .....	460	11	6	5	3	5	4	3	3	10	10
Number of mines <sup>2</sup> .....	63	11	7	6	3	6	4	3	3	10	10
Persons engaged, total.....	2,214	779	295	122	190	110	126	25	13	329	255
Proprietors and firm members.....	2					2					
Principal salaried officers of corporations.....	10	4	1	2				3			
Other salaried officers and employees.....	124	38	20	9	8	9	7	1	1	15	16
Wage earners (average for the year).....	2,078	737	244	111	182	99	119	21	12	314	239
Principal expenses, total.....	\$4,157,610	\$1,536,471	\$511,601	\$248,000	\$359,212	\$240,957	\$232,316	\$41,299	\$21,423	\$549,410	\$410,921
Salaries and wages of—											
Principal officers of corporations.....	\$31,367	\$12,700	\$6,000	\$2,000				\$10,667			
Other salaried officers and employees.....	\$276,292	\$99,490	\$38,888	\$19,690	\$15,407	\$18,490	\$14,350	\$1,500	\$1,800	\$36,572	\$29,175
Wage earners.....	\$2,027,733	\$1,001,115	\$312,464	\$124,015	\$249,807	\$128,045	\$151,010	\$24,709	\$18,972	\$371,014	\$251,422
Contract work.....	\$7,004	\$5,504				\$3,500					
Supplies.....	\$74,733	\$285,375	\$49,241	\$60,552	\$70,499	\$63,176	\$53,481	\$2,298	\$3,883	\$106,747	\$99,501
Fuel.....	\$136,604	\$1,287	\$53,420	\$19,522	\$19,412	\$11,836	\$12,598	\$1,665	\$668	\$9,850	\$9,296
Purchased electric energy.....	\$284,977	\$133,110	\$51,588	\$22,241	\$4,627	\$15,020	\$277	\$460	\$1,100	\$28,227	\$27,527
Expenditures for development (included above in "Principal expenses").....	\$127,000	\$20,000	\$62,000	\$23,000	\$6,000	\$3,000		\$1,000			\$12,000
Value of products.....	\$5,740,188	\$2,092,711	\$645,399	\$498,570	\$397,863	\$366,702	\$297,638	\$44,586	\$27,867	\$375,930	\$492,922
Quantity of crude gypsum produced (tons, 2,000 pounds).....	5,151,876	1,334,815	903,135	570,453	393,476	229,513	369,466	34,852	28,221	804,270	410,175
Machinery and other equipment purchased during the year, total cost.....	\$577,540	\$21,707	\$32,633	\$141,334	\$9,380		\$3,050	\$417	\$6,500	\$69,125	\$6,400
Prime movers and electric motors driven by purchased energy, aggregate horsepower.....	20,498	7,689	6,284	1,765	934	1,752	658	95	72	2,071	4,578
Prime movers, total horsepower.....	65,348	310	1,614	410	810	1,220	644	70		210	60
Steam engines—											
Number.....	10	1	7	1	1						
Horsepower.....	1,699	250	1,119	20	210						
Internal-combustion engines—											
Number.....	43	1	5	5	4	18	10	1		2	2
Horsepower.....	3,719	60	495	390	600	1,220	644	40		210	60
Water wheels and water turbines—											
Number.....	1							1			
Horsepower.....	30							80			
Electric motors driven by purchased energy—											
Number.....	792	334	145	54	15	20	2	2	4	97	119
Horsepower.....	21,150	7,379	4,670	1,355	124	532	14	25	72	2,461	4,518
Electric motors driven by energy generated by enterprises reporting:											
Number.....	107	12	5	5	41	20	12			12	
Horsepower.....	1,699	61	61	130	1,104	380	40			163	
Electric generators:											
Number.....	12	1	1	1	5		1	1		2	
Kilowatts.....	71,233	200	50	150	510		50	75		198	
Fuel and electric energy consumed:											
Fuel—											
Coal—											
Anthracite..... tons (2,240 pounds).....	623	18								605	
Bituminous..... tons (2,000 pounds).....	13,085	198	9,056		3,264			213		346	8
Coke..... tons (2,000 pounds).....	646		391		255						
Fuel oils..... gallons.....	771,752			163,874	82,000	387,075	4,000			24,000	210,803
Gasoline and kerosene..... gallons.....	266,641	690	48,726	55,576	49,608	9,745	78,748	2,800	4,898	11,194	4,657
Gas, natural..... M cubic feet.....	5,033	33		5,000							
Electric energy—											
Purchased..... kw.-hours.....	10,264,882	11,280,383	2,462,429	1,345,378	238,793	490,322	9,249	52,353	41,351	1,328,887	2,035,737
Generated by enterprises reporting..... kw.-hours.....	5,251,706	74,880		450,000	3,787,850	534,968	68,000			336,008	

<sup>1</sup> Iowa, 3 enterprises; Kansas, 2.  
<sup>2</sup> Arizona, 1 enterprise; California, 2; Montana, 3; South Dakota, 1; Virginia, 2; Wyoming, 2.  
<sup>3</sup> See GENERAL EXPLANATIONS—The Enterprise.  
<sup>4</sup> Includes 58 enterprises having corporate form of organization and 2 small unincorporated enterprises.  
<sup>5</sup> See GENERAL EXPLANATIONS—Milling and Manufacturing.  
<sup>6</sup> Includes 284 horsepower reported for inactive prime movers.  
<sup>7</sup> Includes 510 kilowatts reported for inactive generators.

## **MINES AND QUARRIES—SUMMARY FOR INDUSTRIES NOT COVERED BY SPECIAL INDUSTRY REPORTS**

The results of the census of mines and quarries are presented under a series of 39 industry designations. Although the number of distinct mineral products is considerably larger, it is not practicable to present statistics for each and every product, however desirable. Furthermore, to do so would result in disclosure of data for individual enterprises in many instances, and therefore, would not be in accordance with the practice of the Census Bureau of treating each operator's report as confidential. Accordingly, the classifications used in some instances are more or less arbitrary, although these embrace as a rule related mineral products.

Special industry reports are presented for 20 industries, as follows: Anthracite, bituminous coal, gold (lode), gold (placer), silver, copper, lead, zinc, iron ore, limestone, granite, basalt, slate, marble, sandstone, stone (miscellaneous), sand and gravel, phosphate rock, gypsum, and clay.

For the other 19 industries, detailed statistics are given in the table which follows; also for those States or groups of States, in each industry, for which figures may be presented without disclosing, exactly or approximately, the data for individual enterprises.

## MINES AND QUARRIES

## DETAILED STATISTICS FOR THOSE INDUSTRIES NOT

INDUSTRY AND STATE	Number of enterprises <sup>(1)</sup>	Number of mines	PERSONS ENGAGED IN INDUSTRY					PRINCIPAL EXPENSES OF OPERATION AND DEVELOPMENT							
			Total (all classes)	Proprietors and firm members	Principal salaried officers of corporations	Other salaried officers and employees	Wage earners (average for the year)	Salaries and wages			Contract work	Cost of supplies, fuel, and purchased electric energy			
								Principal officers of corporations	Other salaried officers and employees	Wage earners		Supplies	Fuel	Purchased electric energy	
1 Abrasive materials <sup>1</sup> .....	30	30	533	8	12	51	462	\$904,904	\$88,664	\$98,704	\$401,484	\$37,358	\$144,554	\$56,797	\$7,343
2 Asbestos, total.....	11	11	211	-----	-----	16	105	348,586	-----	34,280	236,789	2,000	36,201	26,756	12,560
3 Arizona.....	7	7	163	-----	-----	9	154	259,659	-----	19,466	194,482	-----	21,846	23,865	-----
4 Other States (Ga., Md., N. C., and Vt.).....	4	4	48	-----	-----	7	41	88,927	-----	14,814	42,307	2,000	14,355	2,891	12,560
5 Asphalt and bituminous rock, total.....	21	25	1,307	1	39	144	1,123	2,019,660	286,305	299,258	1,254,835	84,273	517,712	138,500	38,783
6 Kentucky.....	5	6	787	-----	18	81	688	1,318,745	150,260	133,304	680,628	710	244,905	84,830	15,018
7 Utah.....	8	11	206	-----	6	25	175	487,793	30,445	68,451	268,010	50,134	55,198	16,552	
8 Texas.....	3	3	215	1	6	30	178	377,969	35,200	86,663	218,058	25,082	182,876	30,090	
9 Other States (Ala., Calif., Mo., and Okla.).....	5	5	99	-----	9	8	82	235,150	70,400	10,750	89,139	8,347	34,733	7,028	14,762
10 Barite, total.....	42	44	898	9	4	41	844	1,062,721	24,800	76,915	648,488	24,434	154,822	57,576	76,686
11 Missouri.....	30	31	574	8	1	20	545	509,146	4,800	24,970	375,217	12,959	56,451	20,769	13,980
12 Georgia.....	5	6	219	-----	3	11	205	368,174	20,000	28,593	200,345	-----	75,426	28,714	45,126
13 Other States (Calif., S. C., Tenn., Va., and Wis.).....	7	7	105	1	-----	10	94	155,401	-----	-----	72,926	11,475	22,945	8,093	16,580
14 Feldspar, total.....	51	58	695	10	17	70	598	1,047,663	55,376	128,547	526,806	14,240	239,297	21,398	61,999
15 North Carolina.....	14	17	341	2	5	29	305	390,467	14,650	60,193	193,513	678	77,845	8,445	35,143
16 Maine.....	11	14	111	7	5	17	82	245,935	10,500	31,109	79,410	-----	97,773	3,297	14,846
17 New Hampshire.....	6	7	77	-----	1	4	72	135,079	8,600	4,657	84,002	4,258	30,679	2,724	4,559
18 New York.....	3	3	63	-----	5	8	40	107,130	16,300	14,752	56,823	-----	11,780	2,200	5,275
19 Other States (Calif., Conn., Md., Minn., S. Dak., and Va.).....	17	17	113	1	1	12	99	169,052	1,326	17,836	112,548	9,304	21,220	4,732	2,086
20 Fluorspar, total.....	28	36	1,184	13	13	105	1,053	2,222,333	62,983	226,934	1,112,322	16,540	626,500	163,448	23,606
21 Illinois.....	6	7	537	5	7	51	474	1,035,227	25,500	112,021	593,024	9,925	244,682	70,758	9,317
22 Kentucky.....	16	23	590	4	5	52	520	1,069,978	35,633	111,563	487,680	-----	374,649	77,032	13,521
23 Colorado, Nevada, and New Mexico.....	6	6	57	4	1	2	50	87,128	1,850	3,350	61,718	6,615	7,109	5,658	768
24 Fuller's and filtering earths, <sup>2</sup> total.....	22	24	1,096	-----	21	84	991	2,379,008	98,537	204,380	853,228	350,979	425,011	385,356	61,577
25 Florida and Georgia.....	5	6	765	-----	11	49	705	1,560,734	44,240	110,106	518,180	333,859	233,964	288,942	31,443
26 Nevada and Utah.....	3	3	116	-----	5	11	100	243,018	41,820	33,626	116,814	629	33,714	6,042	9,773
27 Texas.....	4	5	61	-----	1	9	51	181,780	2,280	19,387	59,468	1,016	37,112	12,517	-----
28 California.....	4	4	59	-----	4	5	55	174,736	-----	9,433	65,047	13,304	26,532	60,420	-----
29 Other States (Ariz., Colo., Ill., and Mass.).....	5	6	95	-----	4	11	80	268,800	10,197	31,828	93,710	2,171	93,689	16,335	20,361
30 Magnesite.....	5	5	378	-----	6	21	351	1,150,652	25,000	62,301	465,936	55,970	252,178	231,375	56,992
31 Manganese.....	19	21	393	4	11	24	354	606,744	45,954	42,141	392,362	5,824	139,516	32,208	38,739
32 Mercury, total.....	40	40	1,127	10	16	72	1,029	2,381,345	60,000	159,708	1,383,603	15,292	464,047	229,844	68,851
33 California.....	18	18	481	7	4	24	446	1,156,444	19,500	53,134	657,495	9,919	288,026	86,142	42,228
34 Nevada.....	10	10	227	3	3	14	207	440,034	12,200	23,128	203,104	5,373	37,188	48,307	20,734
35 Oregon and Washington.....	6	6	205	-----	4	11	190	450,380	16,500	24,080	259,178	-----	73,250	71,658	5,714
36 Arizona and Texas.....	6	6	214	-----	5	23	186	334,487	11,800	59,366	173,826	-----	65,583	23,737	175
37 Mica, total.....	24	32	250	1	8	15	226	354,225	31,325	26,868	195,142	-----	65,474	17,605	17,811
38 North Carolina.....	10	15	116	-----	7	7	102	142,630	30,075	10,260	70,202	-----	11,561	6,610	13,922
39 New Hampshire.....	6	6	90	1	-----	7	82	155,754	-----	15,608	83,420	-----	43,981	8,856	3,880
40 Colorado, New Mexico, and Texas.....	4	7	29	-----	1	1	27	35,175	1,250	1,000	27,700	-----	3,686	1,539	-----
41 Other States (Conn., Me., S. Dak., and Va.).....	4	4	15	-----	-----	-----	15	20,666	-----	-----	13,820	-----	6,246	600	-----
42 Millstones and pulpstones, total.....	14	14	194	3	9	18	164	384,817	30,800	66,466	221,318	-----	42,841	3,700	19,692
43 West Virginia.....	9	9	148	3	9	15	121	298,358	30,800	51,766	164,805	-----	33,090	3,125	14,772
44 New York, North Carolina, and Ohio.....	5	5	46	-----	-----	3	43	86,459	-----	14,700	56,513	-----	9,751	675	4,920

<sup>1</sup> See GENERAL EXPLANATIONS—The Enterprise.

<sup>2</sup> Emery; garnet and industrial sapphires and diamonds; grinding pebbles and tube-mill lining; grindstones, oilstones, whetstones, scythestones, and rubbing stones; pumice and volcanic ash (pumicite).

<sup>3</sup> Includes data for the production of those plants which chemically treat their mined clay to prepare it for use for filtering purposes, especially for oils. The data for these clay producers are not included, however, in the statistics of the clay industry.



COVERED BY SPECIAL INDUSTRY REPORTS: 1929

Expenditures for development (included in principal expenses; thousands)	Production, tons (2,000 pounds)	Value of products <sup>4</sup>	Machinery and other equipment purchased during the year (total cost)	PRIME MOVERS AND ELECTRIC MOTORS DRIVEN BY PURCHASED ENERGY												Electric motors driven by energy generated by enterprises reporting		Electric generators		
				Aggregate horsepower	Prime movers								Electric motors driven by purchased energy							
					Total horsepower of prime movers	Steam engines		Steam turbines		Internal-combustion engines		Water wheels and water turbines		Number	Horsepower					
						Number	Horsepower	Number	Horsepower	Number	Horsepower	Number	Horsepower							
\$67	89,933	\$1,411,284	\$23,692	3,828	2,927	36	1,341	-----	-----	38	1,436	2	150	38	901	13	205	3	160	1
93	3,440	397,482	89,257	2,114	695	3	257	-----	-----	16	438	-----	-----	30	1,419	4	40	1	25	2
55	1,209	320,225	49,387	470	470	1	37	-----	-----	14	433	-----	-----	30	1,419	4	40	1	25	3
38	2,171	77,257	39,870	1,644	225	2	220	-----	-----	2	5	-----	-----	-----	-----	-----	-----	-----	-----	4
39	819,433	5,123,836	182,214	13,109	10,177	68	5,102	-----	-----	74	5,015	-----	-----	67	2,932	59	3,136	13	1,785	5
2	333,483	2,293,577	50,245	6,147	4,747	54	3,797	-----	-----	24	950	-----	-----	18	1,400	17	556	5	345	6
34	63,720	1,611,233	116,978	1,143	865	29	695	-----	-----	29	695	-----	-----	31	478	42	2,550	8	1,440	7
-----	343,833	955,968	6,085	4,390	4,390	11	1,200	-----	-----	17	3,190	-----	-----	-----	-----	-----	-----	-----	-----	8
3	78,402	263,008	8,906	1,420	375	3	165	-----	-----	4	210	-----	-----	18	1,054	-----	-----	-----	-----	9
12	271,503	1,801,314	154,065	6,066	2,698	18	598	-----	-----	36	1,950	1	150	96	3,368	8	113	4	185	10
1	111,484	835,778	110,511	2,469	1,978	6	218	-----	-----	31	1,760	-----	-----	20	401	8	113	4	186	11
-----	98,701	626,401	26,547	2,440	460	10	310	-----	-----	-----	-----	-----	-----	56	2,187	-----	-----	-----	-----	12
11	61,318	330,135	23,007	950	260	2	70	-----	-----	5	190	-----	-----	20	690	-----	-----	-----	-----	13
82	\$ 204,865	1,035,335	28,100	6,543	2,531	10	1,170	-----	-----	47	986	1	375	150	4,012	26	331	2	350	14
10	108,973	952,122	14,800	2,048	1,205	6	670	-----	-----	10	250	1	375	66	1,653	2	40	1	160	15
4	21,420	338,496	3,409	1,099	157	9	157	-----	-----	9	157	-----	-----	22	942	-----	-----	-----	-----	16
1	32,694	246,139	2,492	319	130	1	25	-----	-----	6	114	-----	-----	5	180	-----	-----	-----	-----	17
3	13,101	132,427	3,000	810	150	1	150	-----	-----	-----	-----	-----	-----	27	690	-----	-----	-----	-----	18
14	25,677	206,151	4,399	1,367	700	2	325	-----	-----	22	465	-----	-----	30	577	24	841	1	200	19
157	156,005	2,858,344	139,604	6,513	6,132	46	5,477	-----	-----	50	705	-----	-----	23	331	120	2,830	14	2,003	20
83	76,280	1,434,122	60,811	2,870	2,703	19	2,670	-----	-----	5	93	-----	-----	15	116	91	2,103	7	1,543	21
70	71,750	1,328,238	75,613	3,108	2,918	22	2,460	-----	-----	42	458	-----	-----	6	190	29	727	7	460	22
4	8,065	95,489	3,240	526	501	5	347	-----	-----	9	154	-----	-----	2	25	-----	-----	-----	-----	23
90	369,933	4,811,629	98,012	8,221	6,775	22	2,725	3	1,400	31	2,650	-----	-----	94	1,446	171	2,000	8	1,376	24
76	210,034	3,266,960	58,914	5,036	4,396	16	2,150	3	1,400	9	846	-----	-----	33	640	170	1,990	6	1,359	25
10	58,141	569,814	10,216	372	690	4	660	-----	-----	4	660	-----	-----	15	212	-----	-----	-----	-----	26
4	32,780	200,006	4,583	809	809	4	445	-----	-----	16	364	-----	-----	-----	-----	1	10	2	17	27
-----	25,319	226,010	780	780	780	2	780	-----	-----	2	780	-----	-----	-----	-----	46	594	-----	-----	28
-----	44,659	488,833	24,269	724	130	2	130	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	29
24	98,361	2,043,905	44,236	3,197	220	3	170	-----	-----	3	50	-----	-----	143	2,977	-----	-----	-----	-----	30
40	45,653	1,184,561	12,441	2,342	177	16	177	-----	-----	16	177	-----	-----	102	2,165	-----	-----	-----	-----	31
460	\$ 23,769	2,820,166	618,185	5,625	3,119	39	3,119	-----	-----	39	3,119	-----	-----	100	2,506	77	758	18	808	32
201	10,036	1,178,387	410,291	2,566	704	-----	-----	-----	-----	24	704	-----	-----	116	1,862	10	104	5	156	33
128	4,713	588,453	108,715	1,012	745	16	745	-----	-----	16	745	-----	-----	14	267	31	130	3	125	34
74	5,069	594,376	34,137	693	399	16	399	-----	-----	16	399	-----	-----	20	294	19	132	3	126	35
57	3,951	458,450	59,042	1,354	1,271	33	1,271	-----	-----	33	1,271	-----	-----	10	83	17	336	7	401	36
14	12,130	516,305	6,406	1,721	732	4	165	-----	-----	14	482	3	85	54	989	6	113	1	125	37
5	7,534	223,804	6,406	1,023	285	3	140	-----	-----	5	130	1	15	44	738	-----	-----	-----	-----	38
-----	2,866	222,723	-----	468	207	-----	-----	-----	-----	6	137	2	70	10	251	-----	-----	-----	-----	39
9	1,100	38,849	-----	215	215	-----	-----	-----	-----	3	215	-----	-----	-----	-----	6	113	1	125	40
-----	630	30,024	-----	25	25	1	25	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	41
8	-----	620,335	11,136	2,517	614	11	364	-----	-----	5	250	-----	-----	64	1,903	-----	-----	-----	-----	42
8	-----	479,523	11,042	2,152	590	9	340	-----	-----	5	250	-----	-----	50	1,562	-----	-----	-----	-----	43
-----	-----	141,312	94	365	24	2	24	-----	-----	-----	-----	-----	-----	14	341	-----	-----	-----	-----	44

<sup>4</sup> Includes value of products other than that indicated by the industry designation as follows: For the glass-sand industry, \$1,581,805, value of other sands; for the molding-sand industry, \$847,584, value of other sands, and gravel. However, the quantities reported in this table for these industries are correct as given. For other industries in this table, only very small values of products other than that of the industry designation are included, while quantities reported are correct as given.

<sup>5</sup> Tons, 2,240 pounds.

<sup>6</sup> Flasks, 76 pounds.

## MINES AND QUARRIES

## DETAILED STATISTICS FOR THOSE INDUSTRIES NOT

INDUSTRY AND STATE	Number of enterprises	Number of mines	PERSONS ENGAGED IN INDUSTRY					PRINCIPAL EXPENSES OF OPERATION AND DEVELOPMENT							
			Total (all classes)	Proprietors and firm members	Principal salaried officers of corporations	Other salaried officers and employees	Wage earners (average for the year)	Total	Salaries and wages			Contract work	Cost of supplies, fuel, and purchased electric energy		
									Principal officers of corporations	Other salaried officers and employees	Wage earners		Supplies	Fuel	Purchased electric energy
1 Minor metals, total.....	28	30	1,419	4	16	155	1,244	\$4,015,174	\$226,397	\$371,018	\$1,596,851	\$86,490	\$1,416,575	\$198,872	\$208,971
2 Molybdenum, vanadium, and titanium.....	5	6	520		6	58	456	2,274,067	150,018	167,887	697,270		1,073,143	67,368	118,381
3 Bauxite.....	9	11	679	1	7	69	602	1,189,405	66,879	151,865	512,606	82,243	216,234	121,793	37,845
4 Tungsten.....	12	13	220	3	3	28	186	551,702	9,500	51,326	296,975	4,247	127,198	9,711	52,745
5 Sand, glass, total.....	25	32	1,125		25	70	1,030	2,868,504	117,110	160,560	1,313,503	15,000	675,263	282,405	304,063
6 New Jersey.....	3	3	66		4	5	57	212,242	9,100	11,040	85,720		41,711	33,203	31,462
7 Virginia.....	3	3	73		3	4	66	136,886	6,850	8,400	71,063		28,886	11,641	10,046
8 Pennsylvania and West Virginia.....	5	10	485		2	17	466	1,167,283	4,900	49,440	560,095		364,881	70,923	117,044
9 Illinois, Michigan, and Missouri.....	5	7	357		11	28	318	1,013,122	76,700	64,690	454,707		162,933	138,034	116,058
10 Other States (Ark., Calif., Md., Nev., Ohio, and Okla.).....	9	9	144		5	16	123	338,971	19,500	26,990	141,912	15,000	76,852	28,604	30,053
11 Sand, molding, total.....	90	128	1,256	19	60	140	1,037	2,679,458	306,303	300,116	1,290,854	121,448	353,738	180,356	126,643
12 Ohio.....	22	34	436	3	28	32	373	813,884	134,926	70,475	408,997	12,200	117,831	45,871	28,584
13 Illinois.....	6	10	137	2	7	11	117	403,365	36,199	32,712	193,358	1,500	44,027	68,818	26,751
14 New Jersey.....	16	23	199	6	11	20	162	455,058	38,460	32,263	211,280	35,728	88,940	27,749	20,048
15 New York.....	10	23	101	1	6	13	81	244,208	40,040	25,740	112,692	66,621	3,186	5,374	655
16 Pennsylvania.....	12	13	160	4	1	18	146	232,919	1,688	27,499	148,244	154	31,841	7,888	16,105
17 Michigan.....	5	6	87	1	2	22	62	278,066	34,000	60,613	108,635		38,665	12,554	23,690
18 Indiana.....	6	6	55	1	5	13	36	107,175	21,000	21,660	42,650	2,142	11,112	6,887	1,724
19 California.....	5	5	43	1		6	36	95,317		18,904	44,553	9,903	12,290	3,489	6,178
20 Other States (Iowa, Ky., Mo., and Wis.).....	8	8	29			5	24	49,400		10,250	25,645	3,200	5,846	2,226	2,299
21 Silica, total.....	70	73	1,657	8	22	194	1,433	3,099,537	70,230	451,617	1,677,407	3,566	614,183	142,818	139,716
22 Pennsylvania.....	18	19	347	2	4	14	327	506,406	14,800	30,162	359,178		81,991	11,677	8,595
23 New Jersey.....	5	5	79		5	12	62	199,511	17,300	27,467	84,046		17,658	11,753	41,287
24 Wisconsin.....	4	4	105			4	101	180,829		10,620	126,893		41,530	1,030	750
25 Missouri.....	3	4	65	1	1	3	60	103,966	2,100	4,862	55,718		33,348	3,171	4,797
26 Illinois.....	5	5	54			12	42	111,841		19,204	47,464		23,581	16,838	4,754
27 Other States (Ala., Ariz., Ark., Calif., Colo., Kans., Md., Mass., Mont., Nev., N. Y., N. C., Ohio, Okla., Oreg., Tenn., Tex., Va., and Wash.).....	35	36	1,007	5	12	140	841	1,996,984	36,030	359,302	1,004,108	3,566	416,069	98,349	79,560
28 Sulphur and pyrites <sup>a</sup> .....	9	10	2,505	1	8	297	2,199	12,261,745	90,300	884,698	3,482,006	10,269	3,339,859	4,433,427	40,586
29 Talc and soapstone.....	25	28	632		23	59	550	1,508,062	88,546	128,371	615,355	16,795	530,717	28,939	99,330
30 New York and Vermont.....	7	8	258		10	37	211	999,552	53,450	81,192	311,541	9,282	455,140	10,391	73,576
31 Maryland, Virginia, and North Carolina.....	8	8	219		7	12	200	270,740	20,662	30,971	170,813	227	22,059	8,894	17,114
32 Other States (Calif., Ga., Pa., and Wis.).....	10	12	155		6	10	139	237,770	14,434	16,208	133,001	7,306	53,518	9,654	3,649
33 Miscellaneous minerals <sup>b</sup> .....	19	19	343		10	28	305	637,953	18,515	62,924	301,197		167,630	37,000	50,657

<sup>1</sup> Diatomaceous earth, ganister, quartz, quartzite, silica rock, silica sand, siliceous mica schist, tripoli.

<sup>a</sup> Production of pyrites was of minor importance, representing less than 2 per cent of the combined value of products shown for sulphur and pyrites.

SUMMARY

COVERED BY SPECIAL INDUSTRY REPORTS: 1929—Continued

Expenditures for development (included in principal expenses; thousands)	Production, tons (2,000 pounds)	Value of products	Machinery and other equipment purchased during the year (total cost)	PRIME MOVERS AND ELECTRIC MOTORS DRIVEN BY PURCHASED ENERGY												Electric motors driven by energy generated by enterprises reporting		Electric generators		
				Aggregate horsepower	Prime movers								Electric motors driven by purchased energy							
					Total horsepower of prime movers	Steam engines		Steam turbines		Internal-combustion engines		Water wheels and water turbines								
						Number	Horsepower	Number	Horsepower	Number	Horsepower	Number			Horsepower					Number
\$379	368, 907	\$6, 649, 976	\$239, 253	13, 469	3, 874	5	600			21	2, 422	7	852	430	9, 695	16	648	8	1, 452	1
274	3, 416	3, 677, 114	129, 789	4, 360	660	2	250			5	320	3	90	214	3, 700			2	27	2
13	364, 670	2, 238, 892	95, 550	5, 711	2, 124	3	350			8	1, 762	2	12	125	3, 587			5	1, 075	3
92	821	733, 970	13, 914	3, 398	1, 090					8	340	2	750	91	2, 308	16	648	1	350	4
50	2, 180, 554	5, 359, 216	433, 067	13, 215	2, 193	14	805	3	270	24	1, 118			448	11, 022	24	716	3	360	5
	120, 282	318, 435	24, 812	1, 071	435					4	435			40	636	17	342			6
	52, 702	156, 139	9, 210	860	460	2	210	1	250					20	400	5	308	2	325	7
	1, 118, 134	2, 244, 111	312, 419	4, 213	170	4	60			2	110			128	4, 043					8
21	689, 135	2, 138, 971	65, 220	5, 267	463	1	35	2	20	9	408			210	4, 804	2	6	1	35	9
29	206, 301	501, 560	21, 406	1, 804	665	7	500			9	165			50	1, 139					10
12	4, 223, 717	4, 775, 957	355, 514	14, 792	7, 603	75	4, 638	2	90	78	2, 875			305	7, 189	2	40	1	25	11
1	730, 800	1, 333, 554	116, 083	5, 042	3, 233	29	2, 565	2	90	21	578			92	1, 809					12
	622, 402	873, 053	20, 500	1, 505	817	19	685			8	132			25	688					13
9	686, 169	674, 278	73, 481	2, 325	883	7	259			12	624			58	1, 442					14
	236, 524	408, 397	11, 440	350	310	5	310							2	40					15
1	242, 083	441, 648	6, 272	1, 673	476	3	169			11	307			35	1, 197					16
	1, 071, 695	412, 349	112, 599	2, 193	875	1	100			11	775			43	1, 318					17
	424, 553	242, 800	11, 194	620	510	4	350			5	160			8	110	2	40	1	25	18
1	65, 303	207, 083	2, 538	645	234					7	234			33	411					19
	144, 288	122, 795	1, 457	430	265	7	200			3	65			9	174					20
81	1, 333, 789	4, 645, 142	266, 868	11, 771	4, 515	32	2, 312			49	2, 203			476	7, 256	4	9	1	10	21
17	502, 793	689, 888	14, 985	1, 784	1, 075	12	650			11	425			23	709	4	9	1	10	22
	129, 012	321, 310	5, 164	1, 389	295						295			37	1, 094					23
	175, 427	216, 673	1, 032	445	355	3	316			1	40			2	90					24
10	26, 933	143, 300	1, 907	328	25					1	25			17	303					25
	10, 311	128, 641	8, 494	794	670	10	630			2	40			7	124					26
54	420, 313	3, 145, 332	237, 286	7, 031	2, 095	7	717			30	1, 378			385	4, 936					27
325	2, 607, 873	37, 126, 148	1, 633, 726	83, 932	31, 043	291	14, 324	49	15, 424	36	1, 895			106	2, 289	426	13, 523	18	8, 202	28
57	243, 075	2, 687, 953	35, 399	10, 530	3, 937	11	535	5	20	17	407	9	2, 975	192	6, 593	4	750	1	250	29
12	150, 559	1, 762, 022	17, 502	8, 127	3, 240	2	65	5	20	8	180	9	2, 975	107	4, 887	4	750	1	260	30
33	56, 263	589, 100	12, 697	1, 578	265	6	265							64	1, 313					31
12	36, 253	335, 841	5, 200	825	432	3	205			9	227			21	393					32
45	132, 362	3, 502, 876	66, 719	3, 978	610	6	540			3	70			189	3, 308					33

\* Borates, cyanite, graphite, lithium minerals (amblygonite, lepidolite, and spodumene), mineral pigments, tantalum, vermiculite.