

DEPARTMENT OF COMMERCE
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FOURTEENTH CENSUS OF THE UNITED STATES
 MINES AND QUARRIES: 1919

ALABAMA, FLORIDA,
 GEORGIA

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CONTENTS.	ALABAMA.	FLORIDA.	GEORGIA.
	<i>Page.</i>	<i>Page.</i>	<i>Page.</i>
Explanation of terms.....	2	2	2
Comparative summary, producing enterprises: 1919 and 1909.....	4	8	12
Principal industries, producing enterprises, ranked by value of products: 1919....	4	8	12
Character of organization, for selected industries, producing enterprises: 1919.....	4	8	12
Size of producing enterprises, by average number of wage earners, for selected industries: 1919.....	5	9	13
Number of producing enterprises and average number of wage earners, by prevailing hours of labor per week, for selected industries: 1919.....	5	9	13
Wage earners, by months, for selected industries: 1919.....	5	9	13
Detailed statistics for mining industries: 1919.....	6	10	14



EXPLANATION OF TERMS.

Scope of census.—Census statistics of mines and quarries, and petroleum and natural-gas wells are compiled primarily for the purpose of showing the absolute and relative magnitude of the different branches of industry covered and their growth or decline. Incidentally, the effort is made to present data throwing light upon character of ownership, size of enterprises, and similar subjects. When use is made of the statistics for these purposes it is imperative that due attention be given to their limitations, particularly in connection with any attempt to derive from them figures purporting to show average wages, cost of production, or profits. The census does not cover enterprises which were idle, that is, in which neither productive work nor development work was done during the entire year, or the products of which were valued at less than \$500; or in the case of the bituminous coal mining industry, producing less than 1,000 tons; or, if not productive, in which development work amounting to less than \$5,000 was done.

Period covered.—The returns relate to the calendar year 1919, or the business year which corresponded most nearly to that calendar year, and cover a year's operations, except for enterprises which began or discontinued business during the year.

The enterprise.—As used in the text and tables the term enterprise represents one or more mines and quarries, wells or groups of wells, or natural-gas gasoline plants all within the same State operated under a common ownership or unified control, or for which only one set of books of account was kept, and for which a single report was secured. It may cover plants at several localities within the same State. If plants under unified control were not all located within the same State, separate reports were secured in order that statistics for the several enterprises thus defined might be included in statistics for the States in which they were located. The enterprise is further defined as being limited to a single industry. Separate reports were secured with very few exceptions for each industry conducted by an operator, and only where combined reports on two or more industries could not be separated does a single enterprise cover more than one industry. (See "Classification of industries.") The number of enterprises shown in the tables is equivalent to the number of individual reports tabulated.

Number of mines, quarries, wells, and plants.—Under these designations is given the count of the number of mines, quarries, wells, and gasoline plants shown by the returns received. The unit of enumeration for mines and quarries was difficult to define. As a rule each group of workings at a given locality in which operations were conducted as a unit or were unified by common management or joint handling of some part of the mining process, has been considered as a single mine or quarry. Many individual openings, therefore, are not counted as individual mines. The total number reported comprises those in operation or in the course of development during the year 1919. For petroleum and natural-gas wells the individual wells were counted and the total number productive December 31, 1919, is reported. The number of natural-gas gasoline plants is the total number reported in operation during the year.

Classification by industries.—The enterprises reported have been grouped by industries according to the kind of products. Only a few enterprises made consolidated reports covering more than one kind of product. In such cases classification was determined by the product of chief value.

Selected industries.—The general tables at the end of this bulletin give the principal facts separately for the industries of the State. A selection has been made of the leading industries of the State for more detailed consideration. Industries of greater importance than some of those selected are omitted when they comprise so few enterprises that detailed presentation would reveal the operations of individual concerns.

Influence of increased prices.—In comparing figures for cost of supplies and materials, and value of products, with the corresponding figures for earlier censuses, account should be taken of the general increase in the prices of commodities during recent years. To the extent to which this factor has been influential the figures fail to afford an exact measure of the increase in the volume of business.

Persons engaged in the industry.—The following general classes of persons engaged in the mines and quarries and petroleum and natural-gas industries were distinguished: (1) Proprietors and firm members, (2) salaried officers of corporations, (3) superintendents and managers, (4) technical employees, (5) clerks (including other subordinate salaried employees), and (6) wage earners. In the reports for the census of 1909 the fourth class, technical employees, was not distinguished and was probably included with other salaried employees.

The number of persons engaged in each industry, segregated by occupation, sex, and, in the case of wage earners, also by age (whether under 16 or 16 and over), was reported for a single representative day. The 15th of December was selected as representing for most industries normal conditions of employment, but where this date was not a representative day report for another date was requested.

The number of employees other than wage earners thus reported for the representative date has been treated as equivalent to the average for the year, since the number of employees of this class does not ordinarily vary much from month to month. The average of wage earners has been obtained in the manner explained in the next paragraph.

In addition to the more detailed report by occupation, sex, and age of the number of wage earners on the representative date, a report was obtained of the number employed on the 15th of each month, without distinction of sex or age. From these figures the average number of wage earners for the year has been calculated by dividing the sum of the numbers reported for the several months by 12. The importance of the industry as an employer of labor is believed to be more accurately measured by this average than by the number employed at any one time or on a given day.

The number of wage earners reported for the representative day is given in the table of detailed statistics for the industries, in connection with the classification of wage earners by occupation which was made for the representative day. This number is not used in any other way because, in view of the unavoidable variations of date, such a total is believed to be less significant than the average number. It would involve more or less duplication of persons working in different industries at different times, would not represent the total number employed in all industries at any one time, and would give undue weight to seasonal industries as compared with industries in continuous operation.

Salaries and wages.—Under these heads are given the total payments during the year for salaries and wages, respectively. The Census Bureau has not undertaken to calculate the average annual earnings of either salaried employees or wage earners. Such averages would possess little real value, because they would be based on the earnings of employees of both sexes, of all ages, in different occupations, and of widely varying degrees of skill. Furthermore, so far as wage earners

are concerned, it would be impossible to calculate accurately even so simple an average as this, since the number of wage earners fluctuates rapidly and irregularly in every industry, and in some to a very great extent from day to day. The Census Bureau's figures for wage earners, as already explained, are averages based on the number employed on the 15th of each month and while representing the number according to the pay rolls to whom wages were paid on that date, no doubt represent a larger number than would be required to perform the work in any industry if all were continuously employed during the year.

Prevailing hours of labor.—No attempt was made to ascertain the number of wage earners working a given number of hours per week. The inquiry called merely for the prevailing practice followed in each enterprise. Occasional variations in hours in an establishment from one part of the year to another were disregarded, and no attention was paid to the fact that a few wage earners might have hours differing from those of the majority. All the wage earners of each enterprise are therefore counted in the class within which the enterprise itself falls. In most enterprises, however, practically all the wage earners work the same number of hours, so that the figures give a substantially correct representation of the hours of labor.

Capital.—The instructions on the schedule for securing data relating to capital were as follows: "The answer should show the total amount of capital, owned and borrowed, invested by the operator in the enterprise on the last day of the business year reported. Do not include securities and loans representing investments in other enterprises." These instructions were identical with those employed at the Census of 1909. The reports received in respect to capital, however, at both censuses, have in so many cases been defective that the data compiled are of value only as indicating very general conditions. While there are some enterprises maintaining accounting systems such that an accurate return for capital could be made, this is not true of the great majority, and the figures therefore do not show the actual amount of capital invested.

Expenses.—The expenses reported in the Census of 1919 include salaries and wages; the cost of supplies, materials, and fuels, including the freight on these; cost of power purchased; the cost of contract work; royalties and rents paid; and taxes paid or assessed. The Census of 1909 reported in addition to the items of expenses covered by the present census all other items of expense incident to that year's business except interest on indebtedness, dividends, and allowances for depreciation.

Supplies and materials, fuel, and power.—Statistics as to supplies and materials, fuel, and power, relate to the cost of these used during the year which may be more or less than the amount purchased during the year. The term "supplies and materials" covers mine, mill, quarry, and well supplies, and mineral purchased for treatment, resale, or distribution.

Royalties and rents.—The amounts given under this head represent the payment to fee holders or the value of share of product credited to fee holders for mineral output from leased land and also rents paid for plants, equipment, and privileges or easements.

Taxes.—The taxes include Federal capital stock; corporation income, and excess profits tax; and also State, county, and local taxes. The data compiled in respect to Federal taxes are very defective largely for the reason that many mining corporations are engaged in other business and have sources of income other than from mining and do not pay taxes on mining separately. For many of these corporations no data have been obtained; for others satisfactory segregation of mining could not be made.

Expenditures for development work.—The expenses reported as defined above include costs of both productive operation and development work. In the statistics on producing enterprises that part of the expenses for salaries, wages, contract work, supplies and materials, fuel, and power which was credited by the mine operators to development work is shown as expenditures for development work. In the statistics for nonproducing enterprises the total of all these expenses is given as expenditure for development work.

Quantity of products.—In so far as the statistics on quantities of mineral products in 1919 are available for the States, they will be found in the reports of the United States Geological Survey, which has tabulated the statistics on quantities of products collected by the Bureau of the Census in cooperation with the Geological Survey, and will also be presented in the special reports of the Census on the several mining industries.

Value of products.—The amounts given under this heading represent the selling value at point of production or f. o. b. at point of shipment, or such other value as may represent the net value or amount received for the product made in 1919 under the terms by which it was disposed of, and also includes the value at point of production of products used by the operating company.

Cost of mining and profits.—The census data do not show the entire cost of mining and well operations, and consequently can not be used for the calculation of profits. No account has been taken of depreciation or interest; rent of offices and buildings other than mines, quarries, and wells; insurance, selling, and other sundry expenses.

Land controlled.—The inquiry on land tenure was confined to land pertaining to the mining or well operations covered by the report. In many of these, however, land held in reserve for future development and for speculative or other purposes not pertaining to mining was included in the returns, and also a large number of more or less unsatisfactory estimates were included. Nevertheless, it is believed that the data presented reflect fairly the conditions as to land tenure in the mining industries, and correctly show the order of magnitude of land holdings pertaining to mining enterprises.

Power used.—The item, aggregate horsepower, represents the horsepower of prime movers used by the enterprises for generating power plus horsepower of motors, principally electric, and other equipment operated by power purchased from other concerns. It does not cover the power of electric motors taking their current from primary power generators operated by the same enterprise (such equipment is reported separately), because its inclusion would obviously result in duplication. The figures on power represent the rated capacity of the engines, motors, etc., and not the amount of power in actual daily use.

Fuel.—Statistics of the quantity of fuel used are shown only for anthracite and bituminous coal, coke, wood, oil, and gas. They relate to the quantity used during the year, which may be more or less than the quantity purchased. As only the principal varieties of fuel are shown, no comparison can be made with the total cost of all fuel.

ALABAMA

Alabama, which ranks twenty-eighth among the states in size (land area 51,279 square miles) and eighteenth in population (2,348,174 in 1920), ranked thirteenth in value of mineral products for the year 1919. The state ranked seventh in the total number of persons engaged in mining industries and in the average number of wage earners employed.

The total value of products of all mines and quarries in Alabama in 1919 was \$59,866,040, an increase of 145.8 per cent over the gross value reported at the census of 1909. The increases in wages, cost of supplies and materials, fuel and power, and in the value of products, as shown in Table 1, are largely due to general price increases and are not a measure of the growth of mining in Alabama during the census period 1909-1919. The progress of the industry is better indicated by the increases in the number of enterprises and mines and quarries and in the average number of wage earners employed.

The industries reported for 1919, ranked according to value of products, were the mining or quarrying of bituminous coal, iron ore, limestone, marble, graphite, pyrite, clay, sandstone, bauxite, barytes, mica, and mineral pigments. In addition to producing the materials indicated by the industry designation, three coal enterprises produced clay as a by-product and one clay mine produced coal. The mining industries which can be shown without disclosure of individual operations are ranked by value of products in Table 2.

The leading mining industry, coal, reported products valued at \$45,359,441, which was 75.8 per cent of the total value of the mineral products of the state. This amount gave Alabama seventh rank as a coal-producing state. The coal-mining district, which centers around Birmingham and extends over parts of 14 counties (11 of which were producing in 1919), is part of the Southern Appalachian Coal Field and produces a number of kinds of bituminous coal suitable for all industrial and domestic uses.

The iron-mining industry, second in importance, is also centered in the Birmingham district, 8 counties reporting products to the value of \$12,291,760. In 1919 Alabama was third in the production of iron ore, Minnesota ranking first and Michigan second.

Graphite to the value of \$337,425 was produced in Clay and Coosa Counties. Alabama was exceeded only by New York in the production of graphite.

The quarrying industries in the state produced stone valued in excess of one and one-half million dollars, which was used chiefly for metallurgical flux.

The preponderance of corporate organization is clearly brought out by Table 3. Corporations conducted 89.8 per cent of all the mining enterprises in the state in 1919, reported 97.2 per cent of the average number of wage earners, and 97.6 per cent of the total value of products. The importance of corporate organization is shown also for each of the principal industries.

The relatively large number of small enterprises as determined by the number of wage earners employed is shown in Table 4. Of the total number of enterprises in this state, 70.5 per cent had no wage earners or less than 101 and the wage earners employed were 18.3 per cent of the total number of wage earners. Enterprises employing more than 100 wage earners constituted 29.6 per cent of the total number of enterprises and employed 81.8 per cent of the total number of wage earners. This table also shows that in the leading industries a relatively small number of the large enterprises, 31.4 per cent in the coal industry and 38.5 per cent in the iron-ore industry, employed, respectively, 82.5 per cent and 86.7 per cent of the total number of wage earners in these industries.

Table 5 shows that in a majority of the enterprises and for two-thirds of the wage earners in all the mining industries in the state in 1919 the hours of labor were 44 to 53 per week, or that the 8-hour day prevailed. This was the condition in coal mining, which was the preponderant industry. In the other leading industries, however, the prevailing hours of labor were largely from 54 to 62 hours per week or 9 hours per day.

The statistics for wage earners presented in Table 6, showing changes in the number employed month by month, reflect conditions prevailing in the industries during the census year. The extremely low minimum in the coal industry, which affects the figures for all industries combined, was very abnormal and was the result of the great November strike.

Table 7 presents for 1919 statistics in detail for the state as a whole and for each industry that can be shown without the disclosure of individual operations.

MINES AND QUARRIES—ALABAMA.

TABLE 1.—COMPARATIVE SUMMARY, PRODUCING ENTERPRISES: 1919 AND 1909.

	MINING INDUSTRIES.		Per cent of increase. ¹		MINING INDUSTRIES.		Per cent of increase. ¹
	1919	1909			1919	1909	
Number of enterprises	264	177	49.2	Capital.....	\$84,167,016	\$85,081,804	-1.1
Number of mines and quarries	348	302	15.2	Principal expenses:			
Persons engaged	34,632	30,119	15.0	Salaries.....	3,934,834	1,678,353	134.4
Proprietors and firm members, total	41	76		Wages.....	30,229,723	14,257,709	154.1
Number performing manual labor in or about the mines and quarries.....	6	11		Contract work.....	167,070	767,385	-78.2
Salaried employees.....	2,012	1,772	13.5	Supplies and materials.....	7,480,910	2,620,390	185.5
Wage earners (average number).....	32,579	28,271	15.2	Fuel and power.....	3,080,283	1,048,824	193.7
Power used (horsepower).....	145,775	91,924	58.6	Royalties and rents.....	838,101	333,828	151.1
				Taxes.....	1,699,630	185,350	817.0
				Value of products.....	59,866,040	24,350,667	145.8

¹ A minus sign (-) denotes decrease. Percentages are omitted where base is less than 100.

² Includes cost of coal purchased as material.

TABLE 2.—PRINCIPAL INDUSTRIES, PRODUCING ENTERPRISES, RANKED BY VALUE OF PRODUCTS: 1919.

INDUSTRY.	Number of enterprises.	WAGE EARNERS.		VALUE OF PRODUCTS.		INDUSTRY.	Number of enterprises.	WAGE EARNERS.		VALUE OF PRODUCTS.	
		Average number.	Per cent distribution.	Amount.	Per cent distribution.			Average number.	Per cent distribution.	Amount.	Per cent distribution.
All industries.....	264	32,579	100.0	\$59,866,040	100.0	Limestone.....	15	835	2.6	\$1,340,961	2.5
Coal, bituminous.....	188	24,648	75.7	45,359,441	75.8	Graphite.....	9	166	0.5	337,425	0.6
Iron ore.....	39	6,485	19.9	12,291,760	20.5	All other industries ¹	13	445	1.4	536,453	0.9

¹ Includes enterprises in industries as follows: Barytes, 1; bauxite, 1; clay, 4; marble, 2; mica, 1; mineral pigments, 1; pyrite, 1; sandstone, 2.

TABLE 3.—CHARACTER OF ORGANIZATION, FOR SELECTED INDUSTRIES, PRODUCING ENTERPRISES: 1919.

INDUSTRY AND CHARACTER OF ORGANIZATION.	Number of enterprises.	Number of wage earners.	VALUE OF PRODUCTS.		PER CENT DISTRIBUTION.		
			Total.	Per enterprise.	Enterprises.	Wage earners.	Value of products.
ALL INDUSTRIES.....	264	32,579	\$59,866,040	\$226,765	100.0	100.0	100.0
Corporation.....	237	31,679	58,448,772	246,619	89.8	97.2	97.6
Individual ¹	18	324	500,566	27,809	6.8	1.0	0.8
Firm.....	9	576	916,702	101,856	3.4	1.8	1.5
COAL, BITUMINOUS.....	188	24,648	45,359,441	241,274	100.0	100.0	100.0
Corporation.....	168	23,786	43,997,017	261,887	89.4	98.5	97.0
Individual ¹	12	289	448,389	37,866	6.4	1.2	1.0
Firm.....	8	573	914,035	114,254	4.3	2.3	2.0
IRON ORE.....	39	6,485	12,291,760	315,173	100.0	100.0	100.0
Corporation ²	39	6,485	12,291,760	315,173	100.0	100.0	100.0
LIMESTONE.....	15	835	1,340,961	89,397	100.0	100.0	100.0
Corporation.....	12	814	1,316,990	109,749	80.0	97.5	98.2
Individual.....	3	21	23,971	7,990	20.0	2.5	1.8
GRAPHITE.....	9	166	337,425	37,492	100.0	100.0	100.0
Corporation.....	9	166	337,425	37,492	100.0	100.0	100.0

¹ Includes 1 other form of organization.

² Includes 2 individuals.

MINES AND QUARRIES—ALABAMA.

5

TABLE 4.—SIZE OF PRODUCING ENTERPRISES, BY AVERAGE NUMBER OF WAGE EARNERS, FOR SELECTED INDUSTRIES: 1919.

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	ENTERPRISES.		WAGE EARNERS.		INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	ENTERPRISES.		WAGE EARNERS.	
	Number.	Per cent distribution.	Number.	Per cent distribution.		Number.	Per cent distribution.	Number.	Per cent distribution.
ALL INDUSTRIES	264	100.0	32,579	100.0	IRON ORE	39	100.0	6,485	100.0
No wage earners.....	1	0.4			No wage earners.....	1	2.6		
1 to 5.....	30	11.4	99	0.3	1 to 5.....	1	2.6	2	(1)
6 to 20.....	51	19.3	650	2.0	6 to 20.....	7	17.9	76	1.2
21 to 50.....	61	23.1	2,080	6.4	21 to 50.....	9	23.1	325	5.0
51 to 100.....	43	16.3	3,113	9.6	51 to 100.....	6	15.4	462	7.1
101 to 500.....	66	25.0	14,026	44.9	101 to 500.....	12	30.8	1,953	30.1
501 to 1,000.....	7	2.7	4,648	14.3	501 to 1,000.....	2	5.1	1,132	17.5
Over 1,000.....	5	1.9	7,363	22.6	Over 1,000.....	1	2.6	2,535	39.1
COAL, BITUMINOUS	188	100.0	24,648	100.0	LIMESTONE	15	100.0	835	100.0
1 to 5.....	18	9.6	63	0.3	1 to 5.....	3	20.0	8	1.0
6 to 20.....	36	19.1	473	1.9	6 to 20.....	2	13.3	36	4.3
21 to 50.....	42	22.3	1,407	5.7	21 to 50.....	6	40.0	207	24.8
51 to 100.....	33	17.6	2,383	9.7	51 to 100.....	1	6.7	52	6.2
101 to 500.....	50	26.6	11,978	48.6	101 to 500.....	3	20.0	532	63.7
501 to 1,000.....	5	2.7	3,516	14.3	GRAPHITE	9	100.0	166	100.0
Over 1,000.....	4	2.1	4,828	19.6	1 to 5.....	3	33.3	10	6.0
					6 to 20.....	3	33.3	36	21.7
					21 to 50.....	2	22.2	68	41.0
					51 to 100.....	1	11.1	52	31.3

1 Less than one-tenth of 1 per cent.

TABLE 5.—NUMBER OF PRODUCING ENTERPRISES AND AVERAGE NUMBER OF WAGE EARNERS, BY PREVAILING HOURS OF LABOR PER WEEK, FOR SELECTED INDUSTRIES: 1919.

INDUSTRY.	TOTAL.		NUMBER WHERE THE PREVAILING HOURS OF LABOR PER WEEK WERE—											
	Enter-prises.	Wage earners.	35 and under.		36 to 43.		44 to 53.		54 to 62.		63 to 71.		72 to 84.	
			Enter-prises.	Wage earners.	Enter-prises.	Wage earners.	Enter-prises.	Wage earners.	Enter-prises.	Wage earners.	Enter-prises.	Wage earners.	Enter-prises.	Wage earners.
All industries	1,263	32,579	11	201	54	3,969	142	21,722	54	6,619	1	23	1	45
Coal, bituminous.....	188	24,648	9	185	52	3,765	122	20,045	5	653				
Iron ore.....	38	6,485			2	204	11	1,274	25	5,007				
Limestone.....	15	835					7	367	8	468				
Graphite.....	9	166	1	14					6	84	1	23	1	45
All other industries.....	13	445	1	2			2	36	10	407				

1 Exclusive of 1 iron ore-mining enterprise employing no wage earners.

TABLE 6.—WAGE EARNERS, BY MONTHS, FOR SELECTED INDUSTRIES: 1919.

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

INDUSTRY.	Average number employed during year.	NUMBER EMPLOYED ON 15TH DAY OF THE MONTH OR NEAREST REPRESENTATIVE DAY.												Per cent minimum is of maximum.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
All industries	32,579	34,594	34,682	34,252	32,719	31,117	31,042	31,751	32,521	32,936	33,747	<i>28,781</i>	32,806	83.0
Coal, bituminous.....	24,648	25,762	25,784	25,805	25,558	24,398	24,442	24,612	24,445	24,548	25,402	<i>20,298</i>	24,722	78.7
Iron ore.....	6,485	7,450	7,423	7,034	5,641	5,261	5,215	5,827	6,625	5,798	6,873	<i>7,028</i>	6,647	70.0
Limestone.....	835	808	893	832	853	798	744	730	845	904	861	<i>874</i>	878	80.8
Graphite.....	166	160	163	150	225	218	206	115	129	193	144	<i>159</i>	130	51.1
All other industries.....	445	474	419	431	442	442	437	467	477	493	467	<i>422</i>	429	84.0

MINES AND QUARRIES—ALABAMA.

TABLE 7.—DETAILED STATISTICS FOR MINING INDUSTRIES: 1919.

	PRODUCING ENTERPRISES.					
	Total.	Coal, bituminous.	Iron ore.	Limestone.	Graphite.	All other. ¹
Number of enterprises.....	264	188	39	15	9	13
Number of mines and quarries.....	348	260	48	15	12	13
Capital.....	\$84,167,016	\$62,728,860	\$17,349,604	\$1,039,505	\$1,808,674	\$1,240,373
Principal expenses:						
Salaries and wages—						
Officers.....	\$573,220	\$776,452	\$43,891	\$18,024	\$17,350	\$15,503
Superintendents and managers.....	\$1,293,620	\$972,740	\$207,390	\$91,156	\$27,296	\$25,038
Technical employees.....	\$421,499	\$293,112	\$111,147	\$3,950	\$9,460	\$3,820
Clerks, etc.....	\$1,346,495	\$918,371	\$371,540	\$31,797	\$7,921	\$13,866
Wage earners.....	\$36,229,723	\$28,327,420	\$6,810,301	\$603,914	\$155,289	\$269,799
Supplies and materials.....	\$7,480,910	\$5,420,177	\$1,596,074	\$300,537	\$91,414	\$66,708
Fuel.....	\$2,431,350	\$1,456,184	\$346,963	\$94,479	\$10,749	\$22,975
Power.....	\$648,933	\$472,190	\$105,629	\$17,532	\$35,534	\$18,048
Royalties and rents.....	\$638,101	\$684,997	\$144,631	\$5,058	\$108	\$3,307
Taxes.....	\$1,699,630	\$1,252,773	\$409,293	\$8,234	\$19,990	\$9,240
Contract work.....	\$167,070	\$88,373	\$74,498	\$2,841	\$1,200	\$158
Expenditures for development (included in the above items).....	\$87,964	\$464,608	\$359,208	\$26,239	\$38,767	\$9,142
Value of products.....	\$59,866,040	\$45,359,441	\$12,291,760	\$1,340,961	\$337,425	\$536,453
Persons engaged in industry.....	34,632	26,162	6,877	901	208	484
Proprietors and firm members (total).....	41	33	2	3		3
Number performing manual labor.....	6	4	1			1
Salaried officers.....	245	219	8	6	4	11
Superintendents and managers.....	482	360	69	27	14	12
Technical employees.....	218	177	31	1	7	2
Clerks, etc.....	1,064	725	282	29	17	11
Wage earners (average number).....	32,579	24,648	6,485	835	166	445
Wage earners by occupation (Dec. 15):						
Above ground (total).....	9,862	6,104	2,320	793	297	348
Below ground (total).....	24,922	20,051	4,641	117		113
Foremen, shift bosses, etc.—						
Above ground.....	387	265	69	24	15	14
Below ground.....	543	400	139	2		2
Enginemen, hoistmen, electricians, mechanics, etc.—						
Above ground.....	2,793	1,912	683	136	21	41
Below ground.....	1,058	909	114	33		2
Miners, quarrymen, and drillmen, including their helpers—						
Above ground.....	887	402	136	166	49	134
Below ground.....	13,853	12,144	1,642	33		39
Timbermen, trackmen, and men engaged in hauling, tramping, etc.—						
Above ground.....	1,332	919	206	171	25	11
Below ground.....	4,712	3,714	952	26		20
Muckers, loaders, laborers, and others not classified—						
Above ground.....	2,905	1,545	950	291	88	31
Below ground.....	4,751	2,884	1,794	23		50
Wage earners employed in mills and beneficiating plants—						
Above ground.....	1,558	1,061	276	5	99	117
Number of females included in wage earners reported above—						
Above ground.....	6	5			1	
Mineral land operated..... acres.....	728,806	653,793	65,208	4,171	3,410	2,224
Land controlled, total..... acres.....	832,198	701,760	117,626	4,668	3,416	4,728
Mineral land owned.....	636,368	563,894	64,631	3,991	3,410	442
Mineral land leased.....	93,278	90,739	577	180		1,782
Timber and other lands owned and leased.....	102,552	47,127	52,418	497	6	2,504
Power used: Aggregate horsepower.....	145,775	97,039	36,890	5,457	4,005	2,384
Prime movers (horsepower, total).....	92,657	59,017	28,720	3,930	210	780
Steam engines—						
Number.....	736	415	251	48	3	19
Horsepower.....	90,097	56,802	28,690	3,630	200	775
Steam turbines—						
Number.....	6	4		2		
Horsepower.....	1,667	1,367		300		
Internal-combustion engines—						
Number.....	34	30	1		1	2
Horsepower.....	819	774	30		10	5
Water wheels, turbines, and motors—						
Number.....	9	9				
Horsepower.....	74	74				
Purchased power (horsepower, total).....	53,118	38,022	8,170	1,527	3,795	1,604
Electric motors operated by purchased current—						
Number.....	1,147	868	105	26	91	57
Horsepower.....	53,118	38,022	8,170	1,527	3,795	1,604
Electric motors run by current generated by enterprise using:						
Number.....	701	671	26	4		
Horsepower.....	30,085	25,311	4,614	160		
Fuel used:						
Coal, bituminous..... tons, 2,000 pounds.....	761,268	509,815	217,263	28,840	1,684	2,886
Coke..... tons, 2,000 pounds.....	31,723	14,254	17,072	397		
Wood..... cords.....	1,965			30	685	1,250
Fuel oils..... barrels.....	410	360	50			
Gasoline and other volatile oils..... barrels.....	1,003	780			146	77

¹ Includes enterprises as follows: Barytes, 1; bauxite, 1; clay, 4; marble, 2; mica, 1; mineral pigments, 1; pyrite, 1; sandstone, 2.

FLORIDA.

Florida, which ranks twenty-first among the states in size (land area 54,861 square miles) and thirty-second in population (968,470 in 1920), ranked thirty-second in value of mineral products for 1919. The state also ranked thirty-second in the total number of persons engaged in the mining industries and in the average number of wage earners employed.

The total value of products of all mines and quarries in Florida in 1919 was \$8,976,413, which was a slight increase, 1.5 per cent, over the value reported at the census of 1909. Increases in salaries and wages, in cost of supplies and materials, and in the value of products, shown in Table 1, are largely due to general price increases; an actual decline in the mining industries is indicated by the decrease in number of mines and quarries operated and in the number of persons engaged in the industries. The addition of Federal income tax since 1909 will account for the large increase in taxes shown.

The industries reported for 1919, ranked according to value of products, were the mining or quarrying of phosphate rock, fuller's earth, clay, limestone, and rare metals (titanium and zirconium). The mining industries which can be shown without disclosure of individual operations are ranked by value of products in Table 2.

Phosphate rock mining which is localized in nine central Gulf Coast and adjoining counties is the leading mineral industry in Florida. In this industry Florida outranks all other states. The value of products reported for the phosphate-rock industry in Florida in 1919 was \$6,678,888, which was 74.4 per cent of the value of all mineral products of the state and 64.8 per cent of the value of products of the phosphate-rock industry in the United States in 1919 (\$10,300,198).

The mining industry second in importance was fuller's earth produced in Gadsden and Manatee Counties. In this industry also Florida led all other states in 1919, with a production valued at \$1,779,550, which was

19.8 per cent of the total value of mineral products for the state and 88.1 per cent of the value of all fuller's earth produced in the United States in 1919 (\$2,019,226).

The other mining industries, clay, limestone, and the recovery of rare metals from beach sands, were unimportant.

A small amount of development work on nonproductive mining property was reported by one operator in Florida in 1919.

The preponderance of the corporate form of organization among the operating enterprises is brought out in Table 3. Corporations controlled 86.1 per cent of all the mining enterprises in the state in 1919, employed 94.6 per cent of the average number of wage earners, and reported 92.7 per cent of the total value of products.

The relatively large number of small enterprises as determined by the average number of wage earners employed is shown in Table 4. Of the total number of mining enterprises in 1919 in Florida, 72.3 per cent were in classes having less than 101 wage earners and such enterprises employed only 33.6 per cent of the total number of wage earners. On the other hand, enterprises employing more than 100 wage earners constituted 27.8 per cent of the total number of enterprises and employed 66.4 per cent of the total number of wage earners. These larger enterprises were all in the phosphate rock and fuller's earth industries.

Table 5 shows that in the majority of enterprises and for about 80 per cent of the wage earners the hours of labor were 54 to 62 per week. In most of the Florida mines the 10-hour day prevailed.

The statistics for wage earners given in Table 6, showing the changes in the number employed month by month, reflect conditions prevailing in the industries during the census year.

Table 7 presents for 1919 statistics in detail for the state as a whole and for each industry that can be shown without the disclosure of individual operations.

MINES AND QUARRIES—FLORIDA.

TABLE 1.—COMPARATIVE SUMMARY, PRODUCING ENTERPRISES: 1919 AND 1909.

	MINING INDUSTRIES.		Per cent of increase. ¹		MINING INDUSTRIES.		Per cent of increase. ¹
	1919	1909			1919	1909	
Number of enterprises.....	36	36		Capital.....	\$58,067,662	\$20,794,901	179.2
Number of mines and quarries.....	55	96		Principal expenses:			
Persons engaged.....	3,604	5,761	-35.9	Salaries.....	666,202	495,750	34.4
Proprietors and firm members, total.....	8	9		Wages.....	3,107,813	2,350,854	32.2
Number performing manual labor in or about the mines and quarries.....	2			Contract work.....	121,202	217,601	-44.3
Salaried employees.....	314	304	3.3	Supplies and materials.....	1,836,229	738,946	148.5
Wage earners (average number).....	3,372	5,448	-38.1	Fuel and power.....	1,687,696	1,223,035	38.0
Power used (horsepower).....	44,969	42,366	6.1	Royalties and rents.....	140,815	197,792	-28.8
				Taxes.....	408,529	70,493	479.5
				Value of products.....	8,976,413	8,846,665	1.5

¹ A minus sign (-) denotes decrease. Percentages are omitted where base is less than 100.

TABLE 2.—PRINCIPAL INDUSTRIES, PRODUCING ENTERPRISES, RANKED BY VALUE OF PRODUCTS: 1919.

INDUSTRY.	Number of enterprises.	WAGE EARNERS.		VALUE OF PRODUCTS.		INDUSTRY.	Number of enterprises.	WAGE EARNERS.		VALUE OF PRODUCTS.	
		Average number.	Per cent distribution.	Amount.	Per cent distribution.			Average number.	Per cent distribution.	Amount.	Per cent distribution.
All industries.....	36	3,372	100.0	\$3,976,413	100.0	Fuller's earth.....	5	717	21.3	\$1,779,550	19.8
Phosphate rock.....	23	2,330	69.1	6,678,888	74.4	Limestone.....	4	111	3.3	177,201	2.0
						All other industries ¹	4	214	6.3	340,774	3.8

¹ Includes enterprises in industries as follows: Clay, 3; rare metals (titanium and zirconium), 1.

TABLE 3.—CHARACTER OF ORGANIZATION, FOR SELECTED INDUSTRIES, PRODUCING ENTERPRISES: 1919.

INDUSTRY AND CHARACTER OF ORGANIZATION.	Number of enterprises.	Number of wage earners.	VALUE OF PRODUCTS.		PER CENT DISTRIBUTION.		
			Total.	Per enterprise.	Enterprises.	Wage earners.	Value of products.
ALL INDUSTRIES.....	36	3,372	\$3,976,413	\$249,345	100.0	100.0	100.0
Corporation.....	31	3,191	8,319,962	268,386	86.1	94.6	92.7
Individual and firm.....	5	181	656,451	131,290	13.9	5.4	7.3
PHOSPHATE ROCK.....	23	2,330	6,678,888	290,386	100.0	100.0	100.0
Corporation.....	20	2,191	6,076,284	303,814	87.0	94.0	91.0
Individual and firm.....	3	139	602,604	200,868	13.0	6.0	9.0
FULLER'S EARTH.....	5	717	1,779,550	355,910	100.0	100.0	100.0
Corporation.....	5	717	1,779,550	355,910	100.0	100.0	100.0

MINES AND QUARRIES—FLORIDA.

TABLE 4.—SIZE OF PRODUCING ENTERPRISES, BY AVERAGE NUMBER OF WAGE EARNERS, FOR SELECTED INDUSTRIES: 1919.

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	ENTERPRISES.		WAGE EARNERS.		INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	ENTERPRISES.		WAGE EARNERS.	
	Number.	Per cent distribution.	Number.	Per cent distribution.		Number.	Per cent distribution.	Number.	Per cent distribution.
ALL INDUSTRIES.....	36	100.0	3,372	100.0	FULLER'S EARTH.....	5	100.0	717	100.0
1 to 5.....	1	2.8	2	0.1	51 to 100.....	2	40.0	153	21.3
6 to 20.....	4	11.1	58	1.7	101 to 500.....	3	60.0	564	78.7
21 to 50.....	10	27.8	364	10.8	LIMESTONE.....	4	100.0	111	100.0
51 to 100.....	11	30.6	708	21.0	1 to 5.....	1	25.0	2	1.8
101 to 500.....	10	27.8	2,240	66.4	6 to 20.....	1	25.0	17	15.3
PHOSPHATE ROCK.....	23	100.0	2,330	100.0	21 to 50.....	1	25.0	40	36.0
6 to 20.....	3	13.0	41	1.8	51 to 100.....	1	25.0	52	46.8
21 to 50.....	7	30.4	247	7.3					
51 to 100.....	6	26.1	366	10.9					
101 to 500.....	7	30.4	1,676	50.0					

TABLE 5.—NUMBER OF PRODUCING ENTERPRISES AND AVERAGE NUMBER OF WAGE EARNERS, BY PREVAILING HOURS OF LABOR PER WEEK, FOR SELECTED INDUSTRIES: 1919.

INDUSTRY.	TOTAL.		NUMBER WHERE THE PREVAILING HOURS OF LABOR PER WEEK WERE—						INDUSTRY.	TOTAL.		NUMBER WHERE THE PREVAILING HOURS OF LABOR PER WEEK WERE—					
	Enterprises.	Wage earners.	44 to 53.		54 to 62.		72 to 84.			Enterprises.	Wage earners.	44 to 53.		54 to 62.		72 to 84.	
			Enterprises.	Wage earners.	Enterprises.	Wage earners.	Enterprises.	Wage earners.				Enterprises.	Wage earners.	Enterprises.	Wage earners.	Enterprises.	Wage earners.
All industries.....	36	3,372	4	338	29	2,688	3	346	Fuller's earth.....	5	717			5	717		
Phosphate rock.....	23	2,330	2	247	18	1,737	3	346	Limestone.....	4	111	1	52	3	59		
									All other industries.....	4	214	1	39	3	175		

TABLE 6.—WAGE EARNERS, BY MONTHS, FOR SELECTED INDUSTRIES: 1919.

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

INDUSTRY.	Average number employed during year.	NUMBER EMPLOYED ON 15TH DAY OF THE MONTH OR NEAREST REPRESENTATIVE DAY.												Per cent minimum is of maximum.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
All industries.....	3,372	3,848	3,903	3,861	3,934	2,202	<i>1,836</i>	2,330	2,745	2,961	3,650	4,282	4,912	37.4
Phosphate rock.....	2,330	2,867	2,937	2,852	2,955	1,179	<i>814</i>	1,277	1,649	1,870	2,553	3,190	3,817	21.3
Fuller's earth.....	717	602	600	621	663	720	716	748	795	799	779	778	783	75.1
Limestone.....	111	110	108	122	119	122	113	108	106	<i>102</i>	105	115	102	83.6
All other industries.....	214	269	258	266	197	<i>181</i>	193	197	195	190	213	199	210	67.3

TABLE 7.—DETAILED STATISTICS FOR MINING INDUSTRIES: 1919.

	PRODUCING ENTERPRISES.				
	Total.	Phosphate rock.	Fuller's ear th.	Limestone.	All other. ¹
Number of enterprises.....	36	23	5	4	4
Number of mines and quarries.....	55	40	5	6	4
Capital.....	\$58,067,662	\$55,740,488	\$1,382,483	\$116,374	\$828,317
Principal expenses:					
Salaries and wages—					
Officers.....	\$225,123	\$173,773	\$23,000	\$3,600	\$24,750
Superintendents and managers.....	\$213,825	\$169,555	\$25,492	\$9,766	\$9,012
Technical employees.....	\$80,248	\$76,048	\$4,200		
Clerks, etc.....	\$147,006	\$130,595	\$16,411	\$1,671	\$8,731
Wage earners.....	\$3,107,813	\$2,372,141	\$475,702	\$81,651	\$178,319
Supplies and materials.....	\$1,836,220	\$1,455,370	\$279,309	\$34,309	\$67,151
Fuel.....	\$1,613,472	\$1,277,999	\$266,537	\$9,902	\$59,034
Power.....	\$74,224	\$69,786		\$4,438	
Royalties and rents.....	\$140,815	\$128,634	\$4,698	\$5,583	\$1,500
Taxes.....	\$408,529	\$275,354	\$110,698	\$720	\$15,757
Contract work.....	\$121,202	\$115,202	\$5,940		
Expenditures for development (included in the above items).....	\$301,881	\$301,881			
Value of products.....	\$8,976,413	\$6,678,888	\$1,779,550	\$177,201	\$340,774
Persons engaged in industry.....	3,694	2,585	748	124	237
Proprietors and firm members (total).....	8	5		3	
Number performing manual labor.....	2			2	
Salaried officers.....	44	27	6	3	8
Superintendents and managers.....	91	65	16	5	5
Technical employees.....	54	52	2		
Clerks, etc.....	125	106	7	2	10
Wage earners (average number).....	3,372	2,330	717	111	214
Wage earners by occupation (Dec. 15):					
Above ground (total).....	2,489	3,803	783	102	210
Foremen, shift bosses, etc.—					
Above ground.....	256	227	18	5	6
Enginemen, hoistmen, electricians, mechanics, etc.—					
Above ground.....	985	918	41	12	14
Miners, quarrymen, and drillmen, including their helpers—					
Above ground.....	845	603	195	47	
Timbermen, trackmen, and men engaged in hauling, tramping, etc.—					
Above ground.....	274	203	50	6	15
Muckers, loaders, laborers, and others not classified—					
Above ground.....	1,928	1,686	39	32	171
Wage earners employed in mills and beneficiating plants—					
Above ground.....	610	166	440		4
Number of females included in wage earners reported above—					
Above ground.....	52	23	29		
Mineral land operated..... acres.....	118,050	108,925	4,260	236	4,629
Land controlled, total..... acres.....	197,385	188,002	4,518	236	4,629
Mineral land owned.....	114,560	106,685	3,340	106	4,429
Mineral land leased.....	3,490	2,240	920	130	200
Timber and other lands owned and leased.....	79,335	79,077	258		
Power used: Aggregate horsepower.....	44,969	40,996	1,880	490	1,603
Prime movers (horsepower, total).....	42,680	38,881	1,880	325	1,603
Steam engines—					
Number.....	83	27	28	7	21
Horsepower.....	12,423	9,095	1,475	325	1,533
Steam turbines—					
Number.....	17	17			
Horsepower.....	17,751	17,751			
Internal-combustion engines—					
Number.....	52	43	5		4
Horsepower.....	12,510	12,035	405		70
Purchased power (horsepower, total).....	2,280	2,115		165	
Electric motors operated by purchased current—					
Number.....	34	23		11	
Horsepower.....	2,280	2,115		165	
Electric motors run by current generated by enterprise using:					
Number.....	272	253	2		17
Horsepower.....	31,710	31,115	18		577
Fuel used:					
Coal, anthracite..... tons, 2,240 pounds.....	100		100		
Coal, bituminous..... tons, 2,000 pounds.....	32,688	19,621	8,592	390	4,629
Coke..... tons, 2,000 pounds.....	146	146			
Wood..... cords.....	44,567	32,022	9,630	2,052	863
Fuel oils..... barrels.....	787,431	657,039	79,392		51,000
Gasoline and other volatile oils..... barrels.....	11,610	10,786	712		112

¹ Includes enterprises as follows: Clay, 3; rare metals (titanium and zirconium), 1.
² Includes 1 wage earner under 16 years of age.

GEORGIA.

Georgia, which ranks twentieth among the states in size (land area 58,725 square miles) and twelfth in population (2,895,832 in 1920), ranked thirty-seventh in value of mineral products for the year 1919. The state ranked thirty-fifth in the total number of persons engaged in the mining industries and in the average number of wage earners employed.

The total value of products of all mines and quarries in Georgia in 1919 was \$4,082,152, an increase of 42 per cent over the corresponding value at the census of 1909. Decline of mining industries in Georgia is indicated by the decreases in the number of enterprises, mines and quarries operated, persons engaged in the industries and in capital invested, as shown by Table 1. The increases in wages, cost of supplies and materials, fuel and power, and in the value of products are due to general price increases, and the impost of Federal income and excess profits taxes since 1909 accounts for the large increase in taxes shown.

The industries reported for 1919, ranked according to value of products, were the mining or quarrying of granite, barytes, clay, bauxite, iron ore, marble, pyrite, coal, limestone, feldspar, talc and soapstone, mineral pigments, fuller's earth, mica, asbestos, and gold ore. In addition to producing the materials as indicated by the industry designation, two enterprises classified as barytes also produced mineral pigments and one enterprise classified as mineral pigments produced a small amount of manganese. The value of these by-products and other unspecified mineral products and the sums received for power sold and for work or miscellaneous services for other enterprises amounted to \$31,621, which is included in the total value of products given above. The mining industries which can be shown without disclosure of individual operations are ranked by value of products in Table 2.

The leading mineral industry, granite, reported products valued at \$885,663, which was 21.7 per cent of the total value of mineral products of the state. Next in importance was barytes mining in Bartow

County, where products to the value of \$722,891 were produced in 1919. This amount was 17.7 per cent of the total value of mineral products for that year in Georgia and was the largest amount produced by any state, 45.4 per cent of the total value reported for the United States (\$1,592,245).

An unimportant amount of development work was reported for 1919 on nonproductive gold-mining property.

The preponderance of the corporate form of organization among the operators of mining enterprises is shown in Table 3. Corporations conducted 70.3 per cent of all the mining enterprises in the state in 1919, employed 84.2 per cent of the average number of wage earners, and reported 84.4 per cent of the total value of products.

The relatively large number of small enterprises as determined by the number of wage earners employed is shown in Table 4. Of the total number of enterprises in the state, 94.6 per cent were reported as having less than 101 wage earners and these enterprises employed 76.8 per cent of the total number of wage earners. Only four enterprises, or 5.4 per cent of the total number, had more than 100 wage earners each, and these employed 23.2 per cent of the total number of wage earners.

Table 5 shows that in about 40 per cent of the enterprises and for nearly half of the wage earners in all the mining industries in the state in 1919, the hours of labor were 44 to 53 per week. In a larger number of enterprises, but for a slightly smaller portion of the total number of wage earners, the hours per week were between 54 and 62.

The statistics for wage earners presented in Table 6, showing the changes in the number employed month by month, reflect conditions prevailing in the industries during the census year.

Table 7 presents for 1919 statistics in detail for the state as a whole and for each industry that can be shown without the disclosure of individual operations.

MINES AND QUARRIES—GEORGIA.

TABLE 1.—COMPARATIVE SUMMARY, PRODUCING ENTERPRISES: 1919 AND 1920.

	MINING INDUSTRIES.		Per cent of increase. ¹		MINING INDUSTRIES.		Per cent of increase. ¹
	1919	1909			1919	1909	
Number of enterprises.....	74	92		Capital.....	\$6,184,470	\$11,475,710	-46.1
Number of mines and quarries.....	82	109	-24.8	Principal expenses:			
Persons engaged.....	2,608	3,636	-28.3	Salaries.....	355,013	189,906	86.9
Proprietors and firm members, total.....	33	53		Wages.....	2,017,460	1,278,159	57.8
Number performing manual labor in or about the mines and quarries.....	4	12		Contract work.....	35,295	1,903	
Salaried employees.....	178	195	-8.7	Supplies and materials.....	2,608,766	254,021	139.7
Wage earners (average number).....	2,397	3,383	-29.1	Fuel and power.....	356,019	146,086	142.7
Power used (horsepower).....	13,026	10,698	21.8	Royalties and rents.....	155,833	58,717	165.4
				Taxes.....	54,360	13,236	310.7
				Value of products.....	4,082,152	2,874,595	42.0

¹ A minus sign (-) denotes decrease. Percentages are omitted where base is less than 100.
² Includes cost of ore purchased.

TABLE 2.—PRINCIPAL INDUSTRIES, PRODUCING ENTERPRISES, RANKED BY VALUE OF PRODUCTS: 1919.

INDUSTRY.	Number of enterprises.	WAGE EARNERS.		VALUE OF PRODUCTS.		INDUSTRY.	Number of enterprises.	WAGE EARNERS.		VALUE OF PRODUCTS.	
		Average number.	Per cent distribution.	Amount.	Per cent distribution.			Average number.	Per cent distribution.	Amount.	Per cent distribution.
All industries.....	74	2,397	100.0	\$4,082,152	100.0	Bauxite.....	4	150	6.3	\$296,261	7.3
Granite.....	20	580	24.2	885,663	21.7	Iron ore.....	9	215	9.0	283,487	6.9
Barytes.....	7	265	11.1	722,891	17.7	Limestone.....	5	80	3.3	174,821	4.3
Clay.....	11	465	19.4	710,004	17.4	All other industries ¹	18	642	26.8	1,009,025	24.7

¹ Includes enterprises in industries as follows: Asbestos, 1; coal, bituminous, 1; feldspar, 1; fuller's earth, 1; gold and silver, lode mines, 1; marble, 1; mica, 5; mineral pigments, 2; pyrite, 3; talc and soapstone, 2.

TABLE 3.—CHARACTER OF ORGANIZATION, FOR SELECTED INDUSTRIES, PRODUCING ENTERPRISES: 1919.

INDUSTRY AND CHARACTER OF ORGANIZATION.	Number of enterprises.	Number of wage earners.	VALUE OF PRODUCTS.		PER CENT DISTRIBUTION.		
			Total.	Per enterprise.	Enterprises.	Wage earners.	Value of products.
ALL INDUSTRIES.....	74	2,397	\$4,082,152	\$55,164	100.0	100.0	100.0
Corporation.....	52	2,019	3,446,364	66,276	70.3	84.2	84.4
Individual.....	13	206	351,304	27,023	17.6	8.6	8.6
Firm.....	9	172	284,484	31,609	12.2	7.2	7.0
GRANITE.....	20	580	885,663	44,283	100.0	100.0	100.0
Corporation.....	9	388	640,819	71,202	45.0	66.9	72.4
Individual.....	7	102	155,295	22,185	35.0	17.6	17.5
Firm.....	4	90	89,549	22,387	20.0	15.5	10.1

MINES AND QUARRIES—GEORGIA.

TABLE 4.—SIZE OF PRODUCING ENTERPRISES, BY AVERAGE NUMBER OF WAGE EARNERS, FOR SELECTED INDUSTRIES: 1919.

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	ENTERPRISES.		WAGE EARNERS.		INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	ENTERPRISES.		WAGE EARNERS.	
	Num-ber.	Per cent distri-bution.	Num-ber.	Per cent distri-bution.		Num-ber.	Per cent distri-bution.	Num-ber.	Per cent distri-bution.
ALL INDUSTRIES.....	74	100.0	2,397	100.0	BARYTES.....	7	100.0	265	100.0
1 to 5.....	8	10.8	22	0.9	1 to 5.....	1	14.3	4	1.5
6 to 20.....	30	40.5	391	16.3	21 to 50.....	4	57.1	154	58.1
21 to 50.....	23	31.1	789	32.9	51 to 100.....	2	28.6	107	40.4
51 to 100.....	9	12.2	639	26.7	IRON ORE.....	9	100.0	215	100.0
101 to 500.....	4	5.4	556	23.2	6 to 20.....	5	55.6	79	36.7
GRANITE.....	20	100.0	580	100.0	21 to 50.....	4	44.4	136	63.3
1 to 5.....	3	15.0	10	1.7	BAUXITE.....	4	100.0	150	100.0
6 to 20.....	8	40.0	89	15.3	6 to 20.....	2	50.0	21	14.0
21 to 50.....	5	25.0	176	30.3	21 to 50.....	1	25.0	31	20.7
51 to 100.....	4	20.0	305	52.6	51 to 100.....	1	25.0	98	65.3
CLAY.....	11	100.0	465	100.0	LIMESTONE.....	5	100.0	80	100.0
6 to 20.....	4	36.4	58	12.5	1 to 5.....	1	20.0	1	1.2
21 to 50.....	4	36.4	153	32.9	6 to 20.....	3	60.0	44	55.0
51 to 100.....	2	18.2	129	27.7	21 to 50.....	1	20.0	36	43.8
101 to 500.....	1	9.1	125	26.9					

TABLE 5.—NUMBER OF PRODUCING ENTERPRISES AND AVERAGE NUMBER OF WAGE EARNERS, BY PREVAILING HOURS OF LABOR PER WEEK, FOR SELECTED INDUSTRIES: 1919.

INDUSTRY.	TOTAL.		.NUMBER WHERE THE PREVAILING HOURS OF LABOR PER WEEK WERE—						INDUSTRY.	TOTAL.		NUMBER WHERE THE PREVAILING HOURS OF LABOR PER WEEK WERE—					
	Enter-prises.	Wage earn-ers.	44 to 53.		54 to 62.		72 to 84.			Enter-prises.	Wage earn-ers.	44 to 53.		54 to 62.		72 to 84.	
			Enter-prises.	Wage earn-ers.	Enter-prises.	Wage earn-ers.	Enter-prises.	Wage earn-ers.				Enter-prises.	Wage earn-ers.	Enter-prises.	Wage earn-ers.	Enter-prises.	Wage earn-ers.
All industries.....	74	2,397	29	1,186	44	1,163	1	48	Iron ore.....	9	215	2	77	7	138	.....	.....
Granite.....	20	580	14	454	6	126	.....	.....	Bauxite.....	4	150	2	21	2	129	.....	.....
Clay.....	11	465	2	168	9	297	.....	.....	Limestone.....	5	80	1	35	4	45	.....	.....
Barytes.....	7	265	2	97	4	120	1	48	All other industries.....	18	642	6	334	12	308	.....	.....

TABLE 6.—WAGE EARNERS, BY MONTHS, FOR SELECTED INDUSTRIES: 1919.

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

INDUSTRY.	Average num-ber em-ployed during year.	NUMBER EMPLOYED ON 15TH DAY OF THE MONTH OR NEAREST REPRESENTATIVE DAY.												Per cent mini-mum is of maxi-mum.
		Janu-ary.	Febru-ary.	March.	April.	May.	June.	July.	August.	Sep-tember.	Octo-ber.	Novem-ber.	Decem-ber.	
All industries.....	2,397	2,386	2,408	<i>2,393</i>	2,339	2,288	2,328	2,501	2,586	2,510	2,479	<i>2,271</i>	2,275	87.8
Granite.....	580	441	478	<i>534</i>	547	597	608	651	710	657	604	<i>580</i>	573	62.1
Clay.....	465	452	437	<i>436</i>	490	470	457	486	465	476	475	<i>480</i>	450	89.0
Barytes.....	265	261	284	<i>253</i>	240	214	274	272	266	277	277	<i>289</i>	273	74.0
Iron ore.....	215	250	240	<i>245</i>	212	180	182	241	218	226	213	<i>168</i>	211	64.8
Bauxite.....	150	127	124	<i>138</i>	129	123	114	136	179	200	196	<i>169</i>	165	57.0
Limestone.....	80	94	95	<i>90</i>	93	65	93	86	71	63	61	<i>67</i>	82	64.2
All other industries.....	642	761	750	<i>697</i>	628	639	600	629	677	611	653	<i>544</i>	515	67.7

TABLE 7.—DETAILED STATISTICS FOR MINING INDUSTRIES: 1919.

	PRODUCING ENTERPRISES.							
	Total.	Granite.	Barytes.	Clay.	Bauxite.	Iron ore.	Limestone.	All other. ¹
Number of enterprises.....	74	20	7	11	4	9	5	18
Number of mines and quarries.....	82	20	10	11	9	9	5	18
Capital.....	\$6,184,470	\$882,638	\$278,014	\$1,075,074	\$315,757	\$215,516	\$303,980	\$3,113,491
Principal expenses:								
Salaries and wages—								
Officers.....	\$137,568	\$25,600	\$9,784	\$32,010	\$10,783	\$867	\$14,100	\$44,415
Superintendents and managers.....	\$127,848	\$15,000	\$18,437	\$33,047	\$17,000	\$10,140	\$8,216	\$26,008
Technical employees.....	\$16,519	\$6,600	\$2,600	\$2,000	\$2,026	\$743		\$4,050
Clerks, etc.....	\$73,078	\$8,883	\$22,561	\$8,816	\$3,642	\$3,605	\$1,655	\$23,016
Wage earners.....	\$2,017,460	\$536,599	\$227,871	\$399,155	\$144,125	\$131,282	\$59,337	\$510,091
Supplies and materials.....	\$591,266	\$84,311	\$147,675	\$181,286	\$14,075	\$38,741	\$23,056	\$102,122
Cost of ore purchased.....	\$17,500		\$17,500					
Fuel.....	\$296,647	\$65,909	\$19,516	\$86,821	\$17,429	\$39,183	\$8,294	\$59,495
Power.....	\$59,372	\$21,216	\$16,127				\$9,364	\$12,665
Royalties and rents.....	\$155,833	\$34,390	\$29,895	\$26,030	\$20,544	\$17,714	\$5,059	\$22,201
Taxes.....	\$54,360	\$5,317	\$5,722	\$9,756	\$4,063	\$21,178	\$381	\$7,943
Contract work.....	\$35,295		\$484				\$14,325	\$20,486
Expenditures for development (included in the above items).....	\$77,759	\$9,383	\$2,906	\$9,445		\$3,000		\$53,025
Value of products.....	\$4,082,152	\$885,663	\$722,891	\$710,004	\$296,261	\$283,487	\$174,821	\$1,009,025
Persons engaged in industry.....	2,608	631	289	495	165	229	99	700
Proprietors and firm members (total).....	33	15	4	3	2	2	1	6
Number performing manual labor.....	4	3						1
Salaried officers.....	45	13	4	7	2		7	12
Superintendents and managers.....	63	9	9	13	6	6	6	14
Technical employees.....	8	3	1	1	1	1	1	1
Clerks, etc.....	62	11	6	6	4	5	5	25
Wage earners (average number).....	2,397	580	265	465	150	215	80	642
Wage earners by occupation (Dec. 15):								
Above ground (total).....	2,382	651	300	487	171	225	102	446
Below ground (total).....	273					22		251
Foremen, shift bosses, etc.—								
Above ground.....	81	24	10	11	10	7	3	16
Below ground.....	14					2		12
Enginemen, hoistmen, electricians, mechanics, etc.—								
Above ground.....	285	45	53	43	10	36	8	90
Below ground.....	3							3
Miners, quarrymen, and drillmen, including their helpers—								
Above ground.....	673	296	13	142	93	34		95
Below ground.....	157					20		137
Timbermen, trackmen, and men engaged in hauling, tramming, etc.—								
Above ground.....	197	25	40	10	20	67	11	24
Below ground.....	44							44
Muckers, loaders, laborers, and others not classified—								
Above ground.....	761	124	143	233	25	34	80	122
Below ground.....	55							55
Wage earners employed in mills and beneficiating plants—								
Above ground.....	385	137	41	48	13	47		99
Number of females included in wage earners reported above—								
Above ground.....	15							15
Mineral and oil land operated..... acres..	37,736	5,072	1,296	3,298	2,062	2,770	242	22,996
Land controlled, total..... acres..	55,608	5,090	1,373	3,313	12,376	3,170	242	30,044
Mineral and oil land owned.....	22,095	385	644	1,031	258	2,160	120	17,497
Mineral and oil land leased.....	15,551	4,697	652	2,287	1,804	610	122	5,499
Timber and other lands owned and leased.....	17,862	8	77	15	10,314	400		7,048
Power used: Aggregate horsepower.....	13,026	3,863	2,160	1,366	381	1,150	1,135	2,971
Prime movers (horsepower, total).....	9,502	2,534	1,295	1,366	381	1,150	435	2,341
Steam engines—								
Number.....	129	25	20	24	19	16	4	21
Horsepower.....	7,909	2,507	1,230	1,225	375	1,150	435	987
Steam turbines—								
Number.....	1			1				
Horsepower.....	100			100				
Internal-combustion engines—								
Number.....	25	4	1	10	2			8
Horsepower.....	393	27	15	41	6			304
Water wheels, turbines, and motors—								
Number.....	7							
Horsepower.....	1,100		50					6
Purchased power (horsepower, total).....	3,524	1,329	865				700	1,050
Electric motors operated by purchased current—								630
Number.....	62	18	23					17
Horsepower.....	3,494	1,299	865				4	630
Other equipment operated by purchased power—								
Horsepower.....	30	30						
Electric motors run by current generated by enterprise using:								
Number.....	31		6	8		1		16
Horsepower.....	3,797		225	170		50		3,352
Fuel used:								
Coal, bituminous..... tons, 2,000 pounds..	55,354	11,766	3,012	18,061	1,430	7,361	1,710	12,014
Wood..... cords.....	6,442	30		250	5,803			359
Fuel oils..... barrels.....	397		4	50				337
Gasoline and other volatile oils..... barrels.....	822	178	200	156	100			188

¹ Includes enterprises as follows: Asbestos, 1; coal, bituminous, 1; feldspar, 1; fuller's earth, 1; gold and silver, lode mines, 1; marble, 1; mica, 5; mineral pigments, 2; pyrite, 3; talc and soapstone, 2.

DEPARTMENT OF COMMERCE
 BUREAU OF THE CENSUS
 WASHINGTON

FOURTEENTH CENSUS OF THE UNITED STATES
 MINES AND QUARRIES: 1919

ARKANSAS, LOUISIANA
 TEXAS

Prepared under the supervision of EUGENE F. HARTLEY, Chief Statistician for Manufactures
 By FRANK J. KATZ, Expert Special Agent for Mines and Quarries

CONTENTS.	ARKAN- SAS.	LOUISI- ANA.	TEXAS.
	Page.	Page.	Page.
Explanation of terms.....	2	2	2
Comparative summary, producing enterprises: 1919 and 1909.....	4	8	11
Principal industries, producing enterprises, ranked by value of products: 1919.....	4	8	11
Character of organization, producing enterprises: 1919.....	4	8	11
Size of producing enterprises, by average number of wage earners: 1919.....	5	8	12
Number of producing enterprises and average number of wage earners, by pre- vailing hours of labor per week: 1919.....	5	8	12
Wage earners, by months: 1919.....	5	9	12
Detailed statistics: 1919.....	6	9	13



EXPLANATION OF TERMS.

Scope of census.—Census statistics of mines and quarries, and petroleum and natural-gas wells are compiled primarily for the purpose of showing the absolute and relative magnitude of the different branches of industry covered and their growth or decline. Incidentally, the effort is made to present data throwing light upon character of ownership, size of enterprises, and similar subjects. When use is made of the statistics for these purposes it is imperative that due attention be given to their limitations, particularly in connection with any attempt to derive from them figures purporting to show average wages, cost of production, or profits.

The census does not cover enterprises which were idle, that is, in which neither productive work nor development work was done during the entire year; or the products of which were valued at less than \$500; or in the case of the bituminous coal mining industry, producing less than 1,000 tons; or, if not productive, in which development work amounting to less than \$5,000 was done.

Period covered.—The returns relate to the calendar year 1919, or the business year which corresponded most nearly to that calendar year, and cover a year's operations, except for enterprises which began or discontinued business during the year.

The enterprise.—As used in the text and tables the term enterprise represents one or more mines and quarries, wells or groups of wells, or natural-gas gasoline plants all within the same State operated under a common ownership or unified control, or for which only one set of books of account was kept, and for which a single report was secured. It may cover plants at several localities within the same State. If plants under unified control were not all located within the same State, separate reports were secured in order that statistics for the several enterprises thus defined might be included in statistics for the States in which they were located. The enterprise is further defined as being limited to a single industry. Separate reports were secured with very few exceptions for each industry conducted by an operator, and only where combined reports on two or more industries could not be separated does a single enterprise cover more than one industry. (See "Classification of Industries.") The number of enterprises shown in the tables is equivalent to the number of individual reports tabulated.

Number of mines, quarries, wells, and plants.—Under these designations is given the count of the number of mines, quarries, wells, and gasoline plants shown by the returns received. The unit of enumeration for mines and quarries was difficult to define. As a rule each group of workings at a given locality in which operations were conducted as a unit or were unified by common management or joint handling of some part of the mining process, has been considered as a single mine or quarry. Many individual openings, therefore, are not counted as individual mines. The total number reported comprises those in operation or in the course of development during the year 1919. For petroleum and natural-gas wells the individual wells were counted and the total number productive December 31, 1919, is reported. The number of natural-gas gasoline plants is the total number reported in operation during the year.

Classification by industries.—The enterprises reported have been grouped by industries according to the kind of products. Only a few enterprises made consolidated reports covering more than one kind of product. In such cases classification was determined by the product of chief value.

Selected industries.—The general tables at the end of this bulletin give the principal facts separately for the industries of the State. A selection has been made of the leading industries of the State for more detailed consideration. Industries of greater importance than some of those selected are omitted when they comprise so few enterprises that detailed presentation would reveal the operations of individual concerns.

Influence of increased prices.—In comparing figures for cost of supplies and materials, and value of products, with the corresponding figures for earlier censuses, account should be taken of the general increase in the prices of commodities during recent years. To the extent to which this factor has been influential the figures fail to afford an exact measure of the increase in the volume of business.

Persons engaged in the industry.—The following general classes of persons engaged in the mines and quarries and petroleum and natural-gas industries were distinguished: (1) Proprietors and firm members, (2) salaried officers of corporations, (3) superintendents and managers, (4) technical employees, (5) clerks (including other subordinate salaried employees), and (6) wage earners. In the reports for the census of 1909 the fourth class, technical employees, was not distinguished and was probably included with other salaried employees.

The number of persons engaged in each industry, segregated by occupation, sex, and, in the case of wage earners, also by age (whether under 16 or 16 and over), was reported for a single representative day. The 15th of December was selected as representing for most industries normal conditions of employment, but where this date was not a representative day report for another date was requested.

The number of employees other than wage earners thus reported for the representative date has been treated as equivalent to the average for the year, since the number of employees of this class does not ordinarily vary much from month to month. The average of wage earners has been obtained in the manner explained in the next paragraph.

In addition to the more detailed report by occupation, sex, and age of the number of wage earners on the representative date, a report was obtained of the number employed on the 15th of each month, without distinction of sex or age. From these figures the average number of wage earners for the year has been calculated by dividing the sum of the numbers reported for the several months by 12. The importance of the industry as an employer of labor is believed to be more accurately measured by this average than by the number employed at any one time or on a given day.

The number of wage earners reported for the representative day is given in the table of detailed statistics for the industries, in connection with the classification of wage earners by occupation which was made for the representative day. This number is not used in any other way because, in view of the unavoidable variations of date, such a total is believed to be less significant than the average number. It would involve more or less duplication of persons working in different industries at different times, would not represent the total number employed in all industries at any one time, and would give undue weight to seasonal industries as compared with industries in continuous operation.

Salaries and wages.—Under these heads are given the total payments during the year for salaries and wages, respectively. The Census Bureau has not undertaken to calculate the average annual earnings of either salaried employees or wage earners. Such averages would possess little real value, because they would be based on the earnings of employees of both sexes, of all ages, in different occupations, and of widely varying degrees of skill. Furthermore, so far as wage earners

are concerned, it would be impossible to calculate accurately even so simple an average as this, since the number of wage earners fluctuates rapidly and irregularly in every industry, and in some to a very great extent from day to day. The Census Bureau's figures for wage earners, as already explained, are averages based on the number employed on the 15th of each month and while representing the number according to the pay rolls to whom wages were paid on that date, no doubt represent a larger number than would be required to perform the work in any industry if all were continuously employed during the year.

Prevailing hours of labor.—No attempt was made to ascertain the number of wage earners working a given number of hours per week. The inquiry called merely for the prevailing practice followed in each enterprise. Occasional variations in hours in an establishment from one part of the year to another were disregarded, and no attention was paid to the fact that a few wage earners might have hours differing from those of the majority. All the wage earners of each enterprise are therefore counted in the class within which the enterprise itself falls. In most enterprises, however, practically all the wage earners work the same number of hours, so that the figures give a substantially correct representation of the hours of labor.

Capital.—The instructions on the schedule for securing data relating to capital were as follows: "The answer should show the total amount of capital, owned and borrowed, invested by the operator in the enterprise on the last day of the business year reported. Do not include securities and loans representing investments in other enterprises." These instructions were identical with those employed at the Census of 1909. The reports received in respect to capital, however, at both censuses, have in so many cases been defective that the data compiled are of value only as indicating very general conditions. While there are some enterprises maintaining accounting systems such that an accurate return for capital could be made, this is not true of the great majority, and the figures therefore do not show the actual amount of capital invested.

Expenses.—The expenses reported in the Census of 1919 include salaries and wages; the cost of supplies, materials, and fuels, including the freight on these; cost of power purchased; the cost of contract work; royalties and rents paid; and taxes paid or assessed. The Census of 1909 reported in addition to the items of expenses covered by the present census all other items of expense incident to that year's business except interest on indebtedness, dividends, and allowances for depreciation.

Supplies and materials, fuel, and power.—Statistics as to supplies and materials, fuel, and power, relate to the cost of these used during the year which may be more or less than the amount purchased during the year. The term "supplies and materials" covers mine, mill, quarry, and well supplies, and mineral purchased for treatment, resale, or distribution.

Royalties and rents.—The amounts given under this head represent the payment to fee holders or the value of share of product credited to fee holders for mineral output from leased land and also rents paid for plants, equipment, and privileges or easements.

Taxes.—The taxes include Federal capital stock; corporation income, and excess profits tax; and also State, county, and local taxes. The data compiled in respect to Federal taxes are very defective largely for the reason that many mining corporations are engaged in other business and have sources of income other than from mining and do not pay taxes on mining separately. For many of these corporations no data have been obtained; for others satisfactory segregation of mining could not be made.

Expenditures for development work.—The expenses reported as defined above include costs of both productive operation and development work. In the statistics on producing enterprises that part of the expenses for salaries, wages, contract work, supplies and materials, fuel, and power which was credited by the mine operators to development work is shown as expenditures for development work. In the statistics for nonproducing enterprises the total of all these expenses is given as expenditure for development work.

Quantity of products.—In so far as the statistics on quantities of mineral products in 1919 are available for the states, they will be found in the reports of the United States Geological Survey, which has tabulated the statistics on quantities of products collected by the Bureau of the Census in cooperation with the Geological Survey, and will also be presented in the special reports of the Census on the several mining industries.

Value of products.—The amounts given under this heading represent the selling value at point of production or f. o. b. at point of shipment, or such other value as may represent the net value or amount received for the product made in 1919 under the terms by which it was disposed of, and also includes the value at point of production of products used by the operating company.

Cost of mining and profits.—The census data do not show the entire cost of mining and well operations, and consequently can not be used for the calculation of profits. No account has been taken of depreciation or interest; rent of offices and buildings other than mines, quarries, and wells; insurance, selling, and other sundry expenses.

Land controlled.—The inquiry on land tenure was confined to land pertaining to the mining or well operations covered by the report. In many of these, however, land held in reserve for future development and for speculative or other purposes not pertaining to mining was included in the returns, and also a large number of more or less unsatisfactory estimates were included. Nevertheless, it is believed that the data presented reflect fairly the conditions as to land tenure in the mining industries, and correctly show the order of magnitude of land holdings pertaining to mining enterprises.

Power used.—The item, aggregate horsepower, represents the horsepower of prime movers used by the enterprises for generating power plus horsepower of motors, principally electric, and other equipment operated by power purchased from other concerns. It does not cover the power of electric motors taking their current from primary power generators operated by the same enterprise (such equipment is reported separately), because its inclusion would obviously result in duplication. The figures on power represent the rated capacity of the engines, motors, etc., and not the amount of power in actual daily use.

Fuel.—Statistics of the quantity of fuel used are shown only for anthracite and bituminous coal, coke, wood, oil, and gas. They relate to the quantity used during the year, which may be more or less than the quantity purchased. As only the principal varieties of fuel are shown, no comparison can be made with the total cost of all fuel.

ARKANSAS.

Arkansas, which ranks twenty-sixth among the states in size (land area 52,525 square miles) and twenty-fifth in population (1,752,204 in 1920), ranked thirty-fourth in value of mineral products for 1919. The state ranked thirtieth in the total number of persons engaged in the mining industries and in the average number of wage earners employed.

The gross amount received for products by operators of all mines, quarries, and wells in Arkansas in 1919 was \$8,404,537, an increase of 82.6 per cent as compared with the corresponding amount reported at the census of 1909. The amount reported for value of products for 1919 included a duplication of \$165,786, the value of natural gas sold by some producers to other producers who distributed this gas and again reported its value. After eliminating this duplication the net value of products for the year 1919 was \$8,238,751, an increase of 79 per cent over the value of products reported for 1909. The value of products for 1919 includes small amounts received for power sold or for work or miscellaneous services for other enterprises.

The increases in value of products, wages, cost of supplies and materials and fuel and power, as shown in Table 1, are largely due to general price increases during the census interval and therefore are not a fair measure of the growth of mining. The decrease in the number of mines and quarries operated and in the average number of wage earners employed indicates an actual decrease in the mining industries in 1919 as compared with 1909.

The mining industries reported for 1919, classified by principal products and listed in order of value of products, were bituminous coal, bauxite, natural gas, sandstone, limestone, lead and zinc, granite, abrasive materials, manganese ore, and iron ore. The industries for which statistics can be shown without disclosure of individual operations are ranked by value of products in Table 2.

The leading mining industry in Arkansas in 1919 was bituminous coal mining in Franklin, Johnson, Logan, Pope, Scott, and Sebastian Counties. Most of the coal produced in this region is a semianthracite. The coal-mining industry reported 85 out of a total of 126 mining enterprises in the state, employed 76.8 per cent of the total number of wage earners, and reported products valued at \$5,292,274, or 63 per cent of the total value of products.

The mining industry second in importance in Arkansas was bauxite mining, in Pulaski and Saline Counties. Arkansas ranked first in the United States

in the production of bauxite. The statistics for this industry are not shown separately in order to avoid disclosure of individual operations.

The industry third in importance, as measured by value of products for 1919, was production of natural gas in Crawford, Sebastian, and Scott Counties.

In addition to the productive mining operations, some work was done for the purpose of developing a manganese mine and a petroleum and natural-gas property. These data, however, can not be shown.

The character of organizations conducting mining enterprises in Arkansas is shown in Table 3, which brings out the preponderance of corporations over other forms of organization. Corporations operated 59.5 per cent of the total number of enterprises, employed 82.6 per cent of the total number of wage earners, and reported products valued at \$7,237,057, or 86.1 per cent of the total value of all products.

The relatively large number of small enterprises, as measured by the average number of wage earners employed, is shown in Table 4. Of the 120 mining enterprises employing wage earners 115 had fewer than 101 each, and these enterprises employed 67.1 per cent of the total number of wage earners. On the other hand, only 5 enterprises, which had more than 100 wage earners each, employed 33 per cent of the total number. The larger enterprises were in the coal and bauxite mining industries.

Table 5 shows that in more than half of the enterprises employing wage earners and for 55.9 per cent of the wage earners in Arkansas in 1919 the hours of labor were 44 to 53 per week. The remaining number, however, of enterprises and wage earners were fairly evenly divided between those enterprises reporting longer and those reporting shorter hours. In the coal-mining industry the 8-hour day and 6-day week was the rule, but a shorter week was reported by nearly one-third of the enterprises and for more than one-fourth of the wage earners. In the other mining and in the quarrying industries most of the wage earners worked 9 or 10 hours per day and 6 days per week.

The statistics for wage earners presented in Table 6, showing the changes in the number employed month by month, reflect conditions prevailing in the industries during the census year. The minimum in the coal industry reported in November was due to the great strike and resulted in a similar minimum in the figures for all industries combined.

Table 7 presents for 1919 statistics in detail for the state as a whole and for each industry that can be shown without disclosure of individual operations.

MINES AND QUARRIES—ARKANSAS.

TABLE 1.—COMPARATIVE SUMMARY, PRODUCING ENTERPRISES: 1919 AND 1909.

	MINING INDUSTRIES.		Per cent of increase. ¹		MINING INDUSTRIES.		Per cent of increase. ¹
	1919	1909			1919	1909	
Number of enterprises.....	126	90		Capital.....	\$8,688,453	\$7,200,417	20.7
Number of mines and quarries.....	126	146	-13.7	Principal expenses:			
Number of natural-gas wells.....	124	62		Salaries.....	601,827	238,467	152.4
Persons engaged.....	4,073	5,252	-22.4	Wages.....	4,573,291	3,026,140	51.1
Proprietors and firm members, total.....	109	75		Contract work.....	139,434	117,195	19.0
Number performing manual labor in or about the mines, quarries, and wells.....	68	41		Supplies and materials.....	1,401,512	308,207	280.6
Salaried employees.....	334	242	38.0	Fuel and power.....	441,261	138,987	217.5
Wage earners (average number).....	3,630	4,935	-26.4	Royalties and rents.....	396,925	103,990	99.5
Power used (horsepower).....	21,365	14,080	51.7	Taxes.....	174,443	18,084	864.6
				Value of products.....	8,404,537	4,603,845	82.6

¹ A minus sign (-) denotes decrease. Percentages are omitted where base is less than 100.
² Includes cost of natural gas purchased for resale.

TABLE 2.—PRINCIPAL INDUSTRIES, PRODUCING ENTERPRISES, RANKED BY VALUE OF PRODUCTS: 1919.

INDUSTRY.	Number of enterprises.	WAGE EARNERS.		VALUE OF PRODUCTS.		INDUSTRY.	Number of enterprises.	WAGE EARNERS.		VALUE OF PRODUCTS.	
		Average number.	Per cent distribution.	Amount.	Per cent distribution.			Average number.	Per cent distribution.	Amount.	Per cent distribution.
All industries.....	126	3,630	100.0	\$8,404,537	100.0	Limestone.....	6	114	3.1	\$220,070	2.6
Coal, bituminous.....	85	2,787	76.8	5,292,274	63.0	Lead and zinc.....	11	28	0.8	14,595	0.2
Natural gas.....	7	16	0.4	621,834	7.4	All other industries ¹	17	685	18.9	2,255,704	26.6

¹ Includes enterprises in industries as follows: Abrasives materials, 1; bauxite, 4; granite, 2; iron ore, 1; manganese, 2; sandstone, 7.

TABLE 3.—CHARACTER OF ORGANIZATION, FOR SELECTED INDUSTRIES, PRODUCING ENTERPRISES: 1919.

INDUSTRY AND CHARACTER OF ORGANIZATION.	Number of enterprises.	Number of wage earners.	VALUE OF PRODUCTS.		PER CENT DISTRIBUTION.		
			Total.	Per enterprise.	Enterprises.	Wage earners.	Value of products.
ALL INDUSTRIES.....	126	3,630	\$8,404,537	\$66,703	100.0	100.0	100.0
Corporation.....	75	2,998	7,237,057	96,494	59.5	82.6	86.1
Individual.....	23	245	422,588	18,373	18.3	6.7	5.0
Firm ¹	28	387	744,892	26,603	22.2	10.7	8.9
COAL, BITUMINOUS.....	85	2,787	5,292,274	62,262	100.0	100.0	100.0
Corporation.....	49	2,259	4,314,407	88,049	57.6	81.1	81.5
Individual.....	15	194	282,405	18,827	17.6	7.0	5.3
Firm ²	21	334	695,462	33,117	24.7	12.0	13.1
NATURAL GAS.....	7	16	621,834	88,833	100.0	100.0	100.0
Corporation.....	7	16	621,834	88,833	100.0	100.0	100.0
LIMESTONE.....	6	114	220,070	36,678	100.0	100.0	100.0
Corporation.....	3	68	108,081	36,027	50.0	59.6	40.1
Individual ³	3	46	111,989	37,330	50.0	40.4	50.9
LEAD AND ZINC.....	11	28	14,595	1,327	100.0	100.0	100.0
Corporation.....	7	22	9,405	1,344	63.6	78.6	64.4
Firm ⁴	4	6	3,190	1,298	36.4	21.4	35.6

¹ Includes 2 other forms of organization.

² Includes 1 other form of organization.

³ Includes 1 firm.

⁴ Includes 1 individual.

MINES AND QUARRIES—ARKANSAS.

TABLE 4.—SIZE OF PRODUCING ENTERPRISES, BY AVERAGE NUMBER OF WAGE EARNERS, FOR SELECTED INDUSTRIES: 1919.

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	ENTERPRISES.		WAGE EARNERS.		INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	ENTERPRISES.		WAGE EARNERS.		
	Number.	Per cent distribution.	Number.	Per cent distribution.		Number.	Per cent distribution.	Number.	Per cent distribution.	
ALL INDUSTRIES.....	126	100.0	3,630	100.0	LIMESTONE.....	6	100.0	114	100.0	
No wage earners.....	6	4.8				1 to 5.....	1	16.7	5	4.4
1 to 5.....	35	27.8	86	2.4		6 to 20.....	3	50.0	46	40.4
6 to 20.....	39	31.0	427	11.8		21 to 50.....	2	33.3	63	55.3
21 to 50.....	27	21.4	925	25.5						
51 to 100.....	14	11.1	995	27.4						
101 to 500.....	5	4.0	1,197	33.0						
COAL, BITUMINOUS.....	85	100.0	2,787	100.0						
1 to 5.....	18	21.2	42	1.5						
6 to 20.....	28	32.9	311	11.2						
21 to 50.....	22	25.9	758	27.2						
51 to 100.....	13	15.3	897	32.2						
101 to 500.....	4	4.7	779	28.0						

TABLE 5.—NUMBER OF PRODUCING ENTERPRISES AND AVERAGE NUMBER OF WAGE EARNERS, BY PREVAILING HOURS OF LABOR PER WEEK, FOR SELECTED INDUSTRIES: 1919.

INDUSTRY.	TOTAL.		NUMBER WHERE THE PREVAILING HOURS OF LABOR PER WEEK WERE—							
	Enterprises.	Wage earners.	35 and under.		36 to 43.		44 to 53.		54 to 62.	
			Enterprises.	Wage earners.	Enterprises.	Wage earners.	Enterprises.	Wage earners.	Enterprises.	Wage earners.
All industries.....	120	3,630	2	69	27	731	65	2,029	26	801
Coal, bituminous.....	85	2,787	2	69	25	720	57	1,979	1	19
Limestone.....	6	114					1	20	5	94
All other industries.....	29	729			2	11	7	30	20	688

¹ Exclusive of 6 enterprises employing no wage earners in industries as follows: Iron ore, 1; lead and zinc, 1; natural gas, 4.

TABLE 6.—WAGE EARNERS, BY MONTHS, FOR SELECTED INDUSTRIES: 1919.

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

INDUSTRY.	Average number employed during year.	NUMBER EMPLOYED ON 15TH DAY OF THE MONTH OR NEAREST REPRESENTATIVE DAY.												Per cent minimum is of maximum.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
All industries.....	3,630	3,783	3,404	3,224	3,141	3,240	3,288	4,062	4,542	4,879	4,760	<i>1,416</i>	3,821	29.0
Coal, bituminous.....	2,787	2,944	2,652	2,490	2,332	2,483	2,549	3,307	3,635	3,918	3,859	474	2,801	12.1
Limestone.....	114	73	80	92	96	122	128	131	138	140	131	116	121	52.1
Lead and zinc.....	28	49	42	35	36	35	40	27	27	12	14	14	5	10.2
Natural gas.....	16	16	16	16	16	<i>13</i>	<i>13</i>	<i>13</i>	<i>13</i>	17	18	19	22	59.1
All other industries.....	685	701	614	591	661	587	558	584	729	792	738	793	872	64.0

MINES AND QUARRIES—ARKANSAS.

TABLE 7.—DETAILED STATISTICS FOR MINING INDUSTRIES: 1919.

	PRODUCING ENTERPRISES.					
	Total.	Coal, bituminous.	Natural gas.	Limestone.	Lead and zinc.	All other. ¹
Number of enterprises.....	126	85	7	6	11	17
Number of mines and quarries.....	126	91	.....	6	11	18
Number of natural-gas wells.....	124	.....	124	.....	.....	.....
Capital.....	\$5,088,453	\$3,628,278	\$2,089,388	\$737,167	\$228,500	\$2,005,120
Principal expenses:						
Salaries and wages—						
Officers.....	\$153,138	\$88,171	\$14,000	\$15,300	\$4,000	\$31,667
Superintendents and managers.....	\$265,105	\$188,622	\$6,660	\$17,449	\$3,420	\$48,954
Technical employees.....	\$22,373	\$8,196	\$5,450	.....	.....	\$8,697
Clerks, etc.....	\$160,211	\$99,287	\$3,280	\$1,920	\$800	\$54,824
Wage earners.....	\$4,573,291	\$3,475,019	\$26,563	\$92,009	\$17,965	\$961,735
Supplies and materials.....	\$1,235,726	\$716,615	\$75,691	\$52,498	\$10,310	\$380,612
Cost of natural gas purchased for resale.....	\$165,786	.....	\$165,786	.....	.....	.....
Fuel.....	\$330,146	\$171,596	\$9,816	\$15,272	\$1,784	\$131,678
Power.....	\$111,115	\$95,649	.....	\$600	.....	\$14,866
Royalties and rents.....	\$366,925	\$184,207	\$44,771	\$10,540	\$2,018	\$145,389
Taxes.....	\$174,443	\$57,476	\$14,475	\$2,965	\$790	\$98,737
Contract work.....	\$139,434	\$56,651	\$82,000	.....	.....	\$783
Expenditures for development (included in the above items).....	\$431,908	\$270,610	\$144,134	.....	\$3,500	\$13,664
Value of products.....	\$8,404,537	\$5,292,274	\$621,834	\$220,070	\$14,595	\$2,255,764
Persons engaged in industry.....	4,073	3,095	40	139	45	754
Proprietors and firm members (total).....	109	78	.....	10	12	9
Number performing manual labor.....	68	63	.....	.....	3	2
Salaried officers.....	50	36	8	7	2	6
Superintendents and managers.....	124	94	4	6	2	18
Technical employees.....	15	4	7	.....	.....	4
Clerks, etc.....	136	96	5	2	1	32
Wage earners (average number).....	3,630	2,787	16	114	28	685
Wage earners by occupation (Dec. 15):						
Above ground (total).....	1,885	793	19	126	30	917
Below ground (total).....	3,261	3,203	.....	.....	58	.....
Foremen, shift bosses, etc.—						
Above ground.....	74	28	.....	9	3	34
Below ground.....	57	51	.....	.....	6	.....
Engineers, hoistmen, electricians, mechanics, etc.—						
Above ground.....	364	251	15	19	5	74
Below ground.....	26	26	.....	.....	.....	.....
Miners, quarrymen, and drillmen, including their helpers—						
Above ground.....	727	238	.....	35	.....	454
Below ground.....	2,356	2,307	.....	.....	49	.....
Timbermen, trackmen, and men engaged in hauling, tramming, etc.—						
Above ground.....	206	102	.....	2	3	99
Below ground.....	450	449	.....	.....	1	.....
Muckers, loaders, laborers, and others not classified—						
Above ground.....	384	148	4	57	.....	175
Below ground.....	372	370	.....	.....	2	.....
Wage earners employed in mills and beneficiating plants—						
Above ground.....	130	26	.....	4	19	81
Mineral and gas land operated..... acres	76,416	24,421	46,621	2,622	1,028	1,724
Land controlled, total..... acres	91,408	25,322	46,621	4,222	1,028	14,215
Mineral and gas land owned.....	18,181	12,226	2,700	2,295	342	618
Mineral and gas land leased.....	58,315	12,270	43,921	327	686	1,111
Timber and other lands owned and leased.....	14,912	826	.....	1,600	.....	12,486
Power used: Aggregate horsepower.....	21,365	15,027	617	1,158	547	4,016
Prime movers (horsepower, total).....	15,552	10,159	617	1,133	547	3,096
Steam engines—						
Number.....	174	130	3	12	4	25
Horsepower.....	13,003	10,003	210	1,130	270	1,390
Internal-combustion engines—						
Number.....	39	18	4	1	6	10
Horsepower.....	2,549	156	407	3	277	1,706
Purchased power (horsepower, total).....	5,813	4,868	.....	25	.....	920
Electric motors operated by purchased current—						
Number.....	141	130	.....	3	.....	3
Horsepower.....	3,813	4,868	.....	25	.....	920
Electric motors run by current generated by enterprise using:						
Number.....	124	25	1	4	.....	94
Horsepower.....	3,184	601	12	7	.....	2,564
Fuel used:						
Coal, bituminous..... tons, 2,000 pounds.....	74,238	58,978	.....	3,301	6	11,953
Wood..... cords.....	3,020	5	1,200	550	246	1,019
Fuel oils..... barrels.....	833	63	.....	.....	195	575
Gasoline and other volatile oils..... barrels.....	667	135	.....	10	.....	522
Natural gas..... 1,000 cubic feet.....	328,057	.....	52,080	.....	.....	276,977

¹ Includes enterprises as follows: Abrasive materials, 1; bauxite, 4; granite, 2; iron ore, 1; manganese ore, 2; sandstone, 7.

LOUISIANA.

Louisiana, which ranks thirtieth among the states in size (land area 45,409 square miles) and twenty-second in population (1,798,509 in 1920), ranked nineteenth in total value of mineral products for 1919. The state ranked twenty-sixth in the total number of persons engaged in the mining industries and in the average number of wage earners employed.

The mineral industries reported for Louisiana in 1919 were petroleum and natural gas, sulphur, and limestone. The mining of salt was an important industry in Louisiana in 1919 but was not included in the census of mines and quarries. As the sulphur and limestone industries each reported only one producing enterprise, statistics for 1919 can be shown only for petroleum and natural gas. The statistics for the petroleum and natural-gas industry here presented include data on the operation of plants engaged in extraction of gasoline from natural gas, whether such plants were connected with well operations or not. Reports were received on operations in nine northern and north-western Louisiana parishes included in the Mid-Continent Oil Field, which extends into Texas, Oklahoma, and Kansas, and six southern Louisiana parishes in the Gulf Coast Oil Field, which extends into Texas.

The gross value of products of the petroleum and natural-gas industry in the state of Louisiana for 1919 was \$32,016,085, which gave the state eighth rank in the United States in this industry. This amount, however, includes a duplication in the value of natural gas, which was sold by some operators for use as material or for resale by other producers who again reported its value. Deducting this duplication, \$740,522, leaves \$31,275,563 as the net value of products, an increase of 1,340 per cent over the corresponding amount (\$2,170,786) reported at the census of 1909. The figures for 1919 include also small sums received by operators for power sold and work or miscellaneous services for other enterprises.

In addition to operations by producing petroleum and natural-gas enterprises, six enterprises reported relatively small amounts expended for development of nonproductive properties.

Table 1 presents comparative statistics for 1919 and 1909. As the increases shown for capital, principal expenses, and value of products are largely augmented by general price increases in recent years they should not be used as a measure of growth of the petroleum and natural-gas industry in Louisiana.

The character of organizations operating petroleum and natural-gas enterprises in Louisiana in 1919 is shown in Table 2, which brings out the preponderance of corporations over other forms of organization.

The size of producing enterprises, as measured by average number of wage earners, is shown in Table 3. One hundred and twenty-six enterprises, or 94.7 per cent of the total number, had no wage earners or fewer than 101 each and the wage earners employed were only 33.8 per cent of the total number. Seven enterprises, or 5.4 per cent of the total number, had more than 100 wage earners each and these employed 3,205 wage earners, or 66.2 per cent of the total number. It is to be noted, however, that these larger enterprises made combined reports for operations conducted in several localities and that the actual individual operations required fewer wage earners.

Table 4 shows that in more than three-fourths of the enterprises employing wage earners and for 83.1 per cent of the total number of wage earners the prevailing hours of labor were over 62 per week.

The statistics for wage earners presented in Table 5, showing the changes in the number employed month by month, reflect conditions prevailing in the industry during the census year.

Table 6 presents for 1919 statistics in detail for the petroleum and natural-gas industry in the state of Louisiana.

MINES AND QUARRIES—LOUISIANA.

TABLE 1.—COMPARATIVE SUMMARY, FOR PETROLEUM AND NATURAL GAS, PRODUCING ENTERPRISES: 1919 AND 1909.

	1919	1909	Per cent of increase. ¹		1919	1909	Per cent of increase. ¹
Number of enterprises.....	133	31	329.0	Capital.....	\$81,682,666	\$8,049,682	914.7
Number of petroleum and natural-gas wells.....	2,479	246	907.7	Principal expenses:			
Number of natural-gas gasoline plants.....	20			Salaries.....	1,441,479	220,852	552.7
Persons engaged.....	5,669	717	690.7	Wages.....	7,035,514	573,305	1,127.2
Proprietors and firm members, total.....	58	72		Contract work.....	2,032,068	² 62,440	
Number performing manual labor in or about the wells.....	2	1		Supplies and materials ³	8,393,076	620,659	1,252.3
Salaried employees.....	770	87	785.1	Fuel and power.....	1,428,787	20,746	6,787.0
Wage earners (average number).....	4,841	558	767.6	Royalties and rents.....	4,312,372	496,198	769.1
Power used (horsepower).....	79,249	5,345	1,382.7	Taxes.....	1,115,339	² 13,912	
				Value of products.....	32,016,085	2,177,986	1,370.0

¹ Percentages are omitted where base is less than 100.² Not strictly comparable with figures for 1919.³ Includes cost of natural gas purchased for use as material and for resale.

TABLE 2.—CHARTER OF ORGANIZATION, FOR PETROLEUM AND NATURAL GAS PRODUCING ENTERPRISES: 1919.

CHARACTER OF ORGANIZATION.	Number of enterprises.	Number of wage earners.	VALUE OF PRODUCTS.		PER CENT DISTRIBUTION.		
			Total.	Per enterprise.	Enterprises.	Wage earners.	Value of products.
All enterprises.....	133	4,841	\$32,016,085	\$240,722	100.0	100.0	100.0
Corporation.....	109	4,754	31,375,958	287,853	82.0	98.2	98.0
Individual.....	7	40	202,459	28,923	5.3	0.8	0.6
Firm ¹	17	47	437,668	25,745	12.8	1.0	1.4

¹ Includes 1 other form of organization.

TABLE 3.—SIZE OF PRODUCING ENTERPRISES, BY AVERAGE NUMBER OF WAGE EARNERS, FOR PETROLEUM AND NATURAL GAS: 1919.

WAGE EARNERS PER ENTERPRISE.	ENTERPRISES.		WAGE EARNERS.		WAGE EARNERS PER ENTERPRISE.	ENTERPRISES.		WAGE EARNERS.	
	Number.	Per cent distribution.	Number.	Per cent distribution.		Number.	Per cent distribution.	Number.	Per cent distribution.
All enterprises.....	133	100.0	4,841	100.0	21 to 50.....	14	10.5	436	9.0
No wage earners.....	15	11.3			51 to 100.....	10	7.5	727	15.0
1 to 5.....	53	39.8	121	2.5	101 to 500.....	5	3.8	1,416	29.3
6 to 20.....	34	25.6	352	7.3	501 to 1,000.....	1	0.8	752	15.5
					Over 1,000.....	1	0.8	1,037	21.4

TABLE 4.—NUMBER OF PRODUCING ENTERPRISES AND AVERAGE NUMBER OF WAGE EARNERS, BY PREVAILING HOURS OF LABOR PER WEEK, FOR PETROLEUM AND NATURAL GAS: 1919.

	TOTAL.		NUMBER WHERE THE PREVAILING HOURS OF LABOR PER WEEK WERE—											
	Enterprises.	Wage earners.	35 and under.		36 to 43.		44 to 53.		54 to 62.		63 to 71.		72 to 84.	
			Enterprises.	Wage earners.	Enterprises.	Wage earners.	Enterprises.	Wage earners.	Enterprises.	Wage earners.	Enterprises.	Wage earners.	Enterprises.	Wage earners.
All enterprises.....	118	4,841	2	77	1	3	4	20	21	718	70	3,878	20	145

¹ Exclusive of 15 enterprises employing no wage earners.

MINES AND QUARRIES—LOUISIANA.

TABLE 5.—WAGE EARNERS, BY MONTHS, FOR PETROLEUM AND NATURAL GAS: 1919.

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

INDUSTRY.	Average number employed during year.	NUMBER EMPLOYED ON 15TH DAY OF THE MONTH OR NEAREST REPRESENTATIVE DAY.												Per cent minimum is of maximum.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
All enterprises.....	4,783	4,049	<i>3,902</i>	4,202	4,250	4,116	4,351	4,486	4,976	5,469	5,636	6,384	6,655	58.6
Producing enterprises.....	4,841	4,030	<i>3,882</i>	4,182	4,224	4,095	4,332	4,453	4,944	5,435	5,585	6,331	6,599	58.8
Nonproducing enterprises.....	32	19	20	20	26	21	19	33	32	34	51	53	56	33.9

TABLE 6.—DETAILED STATISTICS FOR PETROLEUM AND NATURAL GAS: 1919.

	Total.	Producing enterprises.	Nonproducing enterprises.		Total.	Producing enterprises.	Nonproducing enterprises.
Number of enterprises.....	139	133	6	Persons engaged in industry—Continued.			
Number of petroleum and natural-gas wells.....	2,479	2,479		Wage earners by occupation (Dec. 15):	6,665	6,668	57
Number of natural-gas gasoline plants.....	² 20	² 20		Enimenen, firemen, drillers, pumpers, mechanics, etc.....	2,757	2,703	54
Capital.....	\$82,339,153	\$81,682,666	\$656,487	All other.....	3,908	3,905	3
Principal expenses:				Number of females included in wage earners reported above.....	3	1	2
Salaries and wages—				Oil and gas land operated.....acres.....	350,312	329,342	20,970
Officers.....	\$247,033	\$246,855	\$178	Land controlled, total.....acres.....	350,312	329,342	20,970
Superintendents and managers.....	\$602,738	\$584,153	\$18,585	Oil and gas land owned.....	16,849	16,819	30
Technical employees.....	\$64,652	\$63,652	\$1,000	Oil and gas land leased.....	333,463	312,523	20,940
Clerks, etc.....	\$551,065	\$546,819	\$4,246	Power used: Aggregate horsepower.....	79,430	79,249	181
Wage earners.....	\$7,082,832	\$7,035,514	\$47,318	Prime movers (horsepower, total).....	79,396	79,215	181
Supplies and materials.....	\$7,755,941	\$7,652,554	\$103,387	Steam engines—			
Cost of natural gas purchased as material and for resale.....	\$740,522	\$740,522		Number.....	995	989	6
Fuel.....	\$1,438,535	\$1,427,863	\$10,672	Horsepower.....	25,181	25,000	181
Power.....	\$924	\$924		Internal-combustion engine—			
Royalties and rents.....	\$4,712,875	\$4,312,372	\$400,503	Number.....	1,869	1,869	
Taxes.....	\$1,155,929	\$1,115,339	\$40,590	Horsepower.....	54,215	54,215	
Contract work.....	\$2,091,009	\$2,032,068	\$58,941	Purchased power (horsepower, total).....	34	34	
Expenditures for development (included in the above items).....	\$11,211,619	\$11,001,642	\$209,977	Electric motors operated by purchased current—			
Value of products.....	\$32,016,085	\$32,016,085		Number.....	2	2	
Persons engaged in industry.....	5,719	5,669	50	Horsepower.....	34	34	
Proprietors and firm members (total).....	58	58		Electric motors run by current generated by enterprise using:			
Number performing manual labor.....	2	2		Number.....	25	25	
Salaried officers.....	69	69		Horsepower.....	310	310	
Superintendents and managers.....	224	213	11	Fuel used:			
Technical employees.....	43	41	2	Wood.....cords.....	1,256		1,256
Clerks, etc.....	452	447	5	Fuel oils.....barrels.....	418,047	415,002	3,045
Wage earners (average number).....	4,873	4,841	32	Gasoline and other volatile oils.....barrels.....	445	445	
				Natural gas.....1,000 cubic feet.....	13,552,204	13,546,954	5,250

¹ In order to avoid disclosure of individual operations, statistics for 1 limestone and 1 sulphur enterprise are not shown.
² Exclusive of 1 enterprise operating 2 plants producing also carbon black, included in the census of manufactures.

TEXAS.

Texas, which ranks first among the states in size (land area 262,398 square miles) and fifth in population (4,663,228 in 1920), ranked sixth in value of mineral products for 1919. The state ranked tenth in the total number of persons engaged in the mining industries and eleventh in the average number of wage earners employed.

The gross amount received for products by operators of all mines, quarries, and wells in Texas in 1919 was \$160,378,058, an increase of 1,393 per cent over the corresponding amount reported at the census of 1909. After eliminating duplication of \$360,637, the value of natural gas sold by some producers and included in the products reported by other producers who used it as material or resold it, the net value for 1919 was \$160,017,421, which was an increase of approximately 1,400 per cent over the corresponding value for 1909. The value of the products for 1919 includes \$310,340 received by operators of mines, quarries, and wells for power sold and work or miscellaneous services for other enterprises.

The increases in value of products, and in capital, wages, cost of supplies and materials and fuel and power, as shown in Table 1, while in large part due to general price increases in recent years, nevertheless show the growth of mineral industries in Texas. The increases in number of enterprises, number of productive wells, and average number of wage earners employed also show progress during the decade.

The mining industries reported for 1919, classified according to principal products and listed in order of value of products, were petroleum and natural gas, sulphur, bituminous coal, gypsum, gold and silver (lode), quicksilver, limestone, fuller's earth, granite, asphalt, clay, basalt, iron ore, marble, and graphite. The industries for which statistics can be shown without disclosure of individual operations are ranked by value of products in Table 2.

The leading mining industry in Texas in 1919 was the production of petroleum and natural gas. The statistics here presented include data on operation of plants engaged in extraction of gasoline from natural gas, whether such plants were connected with well operations or not. Approximately 90 per cent of all enterprises in the state were engaged in the petroleum and natural-gas industry, and they employed 74.9 per cent of the total number of wage earners and reported as value of products \$143,337,362, or 89.4 per cent of the total value of products. The petroleum and natural-gas fields in Texas are the most extensive of any state in the Union; those in the northern and central coun-

ties, 30 of which reported production, are part of the Mid-Continent Oil Field which extends into Oklahoma and northern Louisiana; and those of the southeastern counties, 10 of which reported production in 1919, are part of the Gulf Coast Field which extends into southern Louisiana. On the basis of value of production Texas ranked second in the United States in the petroleum and natural-gas industry.

The mining industry second in importance in Texas in 1919 was the production of sulphur in Brazoria and Matagorda Counties. Texas ranked first in the United States in this mining industry, statistics for which are not presented in order to avoid disclosure of individual operations.

The industry third in importance was the mining of coal, 4 counties in central northern Texas and 2 in southern Texas reporting production of subbituminous coal, and 12 counties in eastern and central Texas reporting production of lignite.

Other industries of minor importance in the state, but in which Texas ranked high among the producing states, were quicksilver and fuller's earth, in each of which Texas ranked second; and asphalt, in which it ranked third.

In addition to operations on producing mineral properties, work was reported by 64 enterprises in the petroleum and natural-gas industry engaged in developing nonproductive properties. These, with a combined capital of \$17,105,680, employed 179 wage earners and expended for development work \$2,871,256; the figures for wage earners and cost of development work represented 1 per cent of the aggregate number of wage earners employed and 2 per cent of the aggregate principal expenditures for all mining operations in the state. Development work was also reported by 1 nonproducing coal enterprise, for which statistics are not included in order to avoid disclosure of individual operations.

The character of organizations conducting mining enterprises in Texas in 1919 is shown in Table 3, which brings out the extent of corporate control. Although corporations conducted only 53.2 per cent of the total number of enterprises, they employed 89.4 per cent of the total number of wage earners and reported 85.4 per cent of the total value of products.

The relatively large number of small enterprises, as measured by the average number of wage earners employed, is shown in Table 4. Of the total number of mining enterprises in Texas, 94.8 per cent had no wage earners or fewer than 101 each, and the wage earners employed were only 32 per cent of the total

number. On the other hand, 5.1 per cent of the total number of enterprises had more than 100 wage earners each and these enterprises employed 68 per cent of the total number of wage earners. The largest enterprises in the petroleum and natural-gas industry, those reporting over 500 wage earners each, made combined reports for operations in several localities; the actual individual operations in this industry were smaller, therefore, than indicated by the table. The largest single operations were in the coal and sulphur-mining industries.

Table 5 shows that in a majority of the enterprises employing wage earners and for 61.8 per cent of the total number of wage earners the hours of labor were 63 or more per week. These hours prevailed in the petroleum and natural-gas industry and were reported

by only one enterprise in another industry. In the coal-mining industry the hours of labor were generally 44 to 53 per week, with the 8-hour day and 6-day week prevailing; in other mining and quarrying industries the hours were most commonly 54 to 62 per week, with a 9-hour or 10-hour day and 6-day week prevailing.

The statistics for wage earners presented in Table 6, showing the changes in the number employed month by month, reflect conditions prevailing in the industries during the census year. The minimum number in the coal industry in November was abnormal and due to the great strike.

Table 7 presents for 1919 statistics in detail for the state as a whole and for each industry that can be shown without disclosure of individual operations.

TABLE 1.—COMPARATIVE SUMMARY, PRODUCING ENTERPRISES: 1919 AND 1909.

	MINING INDUSTRIES.		Per cent of increase. ¹		MINING INDUSTRIES.		Per cent of increase. ¹
	1919	1909			1919	1909	
Number of enterprises.....	624	236	164.4	Capital.....	\$361,084,392	\$19,575,969	1,747.6
Number of mines and quarries.....	81	92	83.9	Principal expenses:			
Number of petroleum and natural-gas wells.....	8,749	2,279	283.9	Salaries.....	6,429,958	541,762	1,086.9
Number of natural-gas gasoline plants.....	23			Wages.....	29,557,997	3,997,495	639.4
Persons engaged.....	22,890	7,065	224.0	Contract work.....	25,773,700	152,096	16,845.7
Proprietors and firm members, total.....	484	261	85.4	Supplies and materials ²	45,401,592	1,839,415	2,376.3
Number performing manual labor in or about the mines, quarries, and wells.....	52	65	78.5	Fuel and power.....	6,189,559	255,614	2,321.4
Salaried employees.....	4,242	425	898.1	Royalties and rents.....	23,912,179	917,799	2,505.4
Wage earners (average number).....	18,164	6,379	184.7	Taxes.....	4,045,981	62,333	6,390.9
Power used (horsepower).....	129,063	32,003	303.3	Value of products.....	160,378,058	10,742,150	1,393.0

¹ Percentages are omitted where base is less than 100.

² Includes cost of natural gas purchased for use as material and for resale.

TABLE 2.—PRINCIPAL INDUSTRIES, PRODUCING ENTERPRISES, RANKED BY VALUE OF PRODUCTS: 1919.

INDUSTRY.	Number of enterprises.	WAGE EARNERS.		VALUE OF PRODUCTS.		INDUSTRY.	Number of enterprises.	WAGE EARNERS.		VALUE OF PRODUCTS.	
		Average number.	Per cent distribution.	Amount.	Per cent distribution.			Average number.	Per cent distribution.	Amount.	Per cent distribution.
All industries.....	624	18,164	100.0	\$160,378,058	100.0	Coal, bituminous.....	33	2,711	14.9	\$4,322,100	2.7
Petroleum and natural gas.....	553	13,599	74.9	143,337,362	89.4	All other industries ¹	38	1,854	10.2	12,718,596	7.9

¹ Includes enterprises in industries as follows: Asphalt, 1; basalt, 1; clay, 2; fuller's earth, 1; gold and silver, lode mines, 1; granite, 8; graphite, 1; gypsum, 3; iron ore, 1; limestone, 12; marble, 1; quicksilver, 4; sulphur, 2.

TABLE 3.—CHARACTER OF ORGANIZATION, FOR SELECTED INDUSTRIES, PRODUCING ENTERPRISES: 1919.

INDUSTRY AND CHARACTER OF ORGANIZATION.	Number of enterprises.	Number of wage earners.	VALUE OF PRODUCTS.		PER CENT DISTRIBUTION.		
			Total.	Per enterprise.	Enterprises.	Wage earners.	Value of products.
ALL INDUSTRIES.....	624	18,164	\$160,378,058	\$257,016	100.0	100.0	100.0
Corporation.....	332	16,239	136,890,174	412,320	53.2	89.4	85.4
Individual.....	54	404	2,280,434	42,397	8.7	2.2	1.4
Firm.....	105	994	11,795,704	112,340	16.8	5.5	7.4
Other.....	133	527	9,402,746	70,697	21.3	2.9	5.9
PETROLEUM AND NATURAL GAS.....	553	13,599	143,337,362	259,200	100.0	100.0	100.0
Corporation.....	284	12,055	120,465,905	424,176	51.4	88.6	84.0
Individual.....	37	160	1,883,584	50,908	6.7	1.2	1.3
Firm.....	100	866	11,586,622	115,866	18.1	6.4	8.1
Other.....	132	518	9,401,251	71,222	23.9	3.8	6.6
COAL, BITUMINOUS.....	33	2,711	4,322,100	130,973	100.0	100.0	100.0
Corporation.....	29	2,615	4,205,450	145,016	87.9	96.5	97.3
Unincorporated ¹	4	96	116,650	29,163	12.1	3.5	2.7

¹ Includes 1 firm, 2 individuals, and 1 other form of organization.

MINES AND QUARRIES—TEXAS.

TABLE 4.—SIZE OF PRODUCING ENTERPRISES, BY AVERAGE NUMBER OF WAGE EARNERS, FOR SELECTED INDUSTRIES: 1919.

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	ENTERPRISES.		WAGE EARNERS.		INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	ENTERPRISES.		WAGE EARNERS.	
	Number.	Per cent distribution.	Number.	Per cent distribution.		Number.	Per cent distribution.	Number.	Per cent distribution.
ALL INDUSTRIES.....	624	100.0	18,164	100.0					
No wage earners.....	70	11.2			COAL, BITUMINOUS.....	33	100.0	2,711	100.0
1 to 5.....	306	49.0	628	3.4	1 to 5.....	2	6.1	10	0.4
6 to 20.....	138	22.1	1,471	8.1	6 to 20.....	9	27.3	114	4.2
21 to 50.....	50	8.0	1,591	8.8	21 to 50.....	8	24.2	274	10.1
51 to 100.....	28	4.5	2,129	11.7	51 to 100.....	7	21.2	497	18.3
101 to 500.....	25	4.0	6,116	33.7	101 to 500.....	6	18.2	972	35.9
501 to 1,000.....	5	0.8	3,652	20.1	501 to 1,000.....	1	3.0	844	31.1
Over 1,000.....	2	0.3	2,577	14.2					
PETROLEUM AND NATURAL GAS.....	553	100.0	13,599	100.0					
No wage earners.....	70	12.7							
1 to 5.....	294	53.2	588	4.3					
6 to 20.....	120	21.7	1,256	9.2					
21 to 50.....	30	5.4	933	6.9					
51 to 100.....	17	3.1	1,308	9.6					
101 to 500.....	17	3.1	4,744	34.9					
501 to 1,000.....	3	0.5	2,193	16.1					
Over 1,000.....	2	0.4	2,577	18.9					

TABLE 5.—NUMBER OF PRODUCING ENTERPRISES AND AVERAGE NUMBER OF WAGE EARNERS, BY PREVAILING HOURS OF LABOR PER WEEK, FOR SELECTED INDUSTRIES: 1919.

INDUSTRY.	TOTAL.		NUMBER WHERE THE PREVAILING HOURS OF LABOR PER WEEK WERE—											
	Enter-prises.	Wage earners.	35 and under.		36 to 43.		44 to 53.		54 to 62.		63 to 71.		72 to 84.	
			Enter-prises.	Wage earners.	Enter-prises.	Wage earners.	Enter-prises.	Wage earners.	Enter-prises.	Wage earners.	Enter-prises.	Wage earners.	Enter-prises.	Wage earners.
All industries.....	1,554	18,164	14	82	12	521	68	2,447	134	3,881	157	6,538	169	4,695
Petroleum and natural gas.....	483	13,599	13	26	5	6	37	276	103	2,066	156	6,500	169	4,695
Coal, bituminous.....	33	2,711	1	56	7	515	20	1,959	5	181				
All other industries.....	38	1,854					11	212	26	1,604	1	38		

¹ Exclusive of 70 enterprises in the petroleum and natural-gas industry employing no wage earners.

TABLE 6.—WAGE EARNERS, BY MONTHS, FOR SELECTED INDUSTRIES: 1919.

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

INDUSTRY.	Average number employed during year.	NUMBER EMPLOYED ON 15TH DAY OF THE MONTH OR NEAREST REPRESENTATIVE DAY.												Per cent minimum is of maximum.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
All industries.....	18,343	14,746	15,094	16,048	16,810	17,404	17,442	18,638	20,633	21,209	21,102	19,740	21,250	69.4
Producing enterprises.....	18,164	14,691	15,003	15,942	16,688	17,263	17,259	18,459	20,420	20,975	20,853	19,474	20,971	69.9
Petroleum and natural gas.....	13,599	9,880	10,325	11,195	11,821	12,386	12,554	13,757	15,767	16,351	16,429	16,240	16,483	59.9
Coal, bituminous.....	2,711	3,138	3,075	2,983	2,944	2,919	2,817	2,790	2,740	2,692	2,529	<i>1,862</i>	2,553	43.1
All other industries.....	1,854	1,643	<i>1,603</i>	1,764	1,923	1,958	1,888	1,912	1,913	1,932	1,895	1,882	1,935	81.9
Nonproducing enterprises—Petroleum and natural gas.....	179	<i>85</i>	91	106	122	141	183	179	213	234	249	266	279	30.5

MINES AND QUARRIES—TEXAS.

TABLE 7.—DETAILED STATISTICS FOR MINING INDUSTRIES: 1919.

	Aggregate.	PRODUCING ENTERPRISES.				NONPRODUCING ENTERPRISES. ³
		Total.	Petroleum and natural gas. ¹	Coal, bituminous.	All other. ²	Petroleum and natural gas.
Number of enterprises.....	688	624	573	33	38	64
Number of mines and quarries.....	81	81		42	39	
Number of petroleum and natural-gas wells.....	8,749	8,749	8,749			
Number of natural-gas gasoline plants.....	23	23	23			
Capital.....	\$378,790,072	\$361,684,392	\$331,206,706	\$8,682,267	\$18,705,329	\$17,105,680
Principal expenses:						
Salaries and wages—						
Officers.....	\$1,309,695	\$1,235,445	\$915,859	\$107,349	\$212,237	\$74,250
Superintendents and managers.....	\$2,558,017	\$2,484,075	\$2,166,642	\$100,040	\$217,393	\$73,942
Technical employees.....	\$559,113	\$549,040	\$449,161	\$10,000	\$89,879	\$10,073
Clerks, etc.....	\$2,232,528	\$2,161,398	\$1,922,928	\$53,143	\$185,327	\$71,130
Wage earners.....	\$29,923,629	\$29,557,967	\$24,569,129	\$2,849,526	\$2,139,342	\$365,632
Supplies and materials.....	\$46,560,698	\$45,040,955	\$42,780,088	\$387,935	\$1,872,932	\$1,519,743
Cost of natural gas purchased as material and for resale.....	\$360,637	\$360,637	\$360,637			
Fuel.....	\$6,222,720	\$6,093,106	\$4,372,195	\$83,496	\$1,637,415	\$129,614
Power.....	\$96,453	\$96,453	\$55,655	\$597	\$40,201	
Royalties and rents.....	\$24,016,403	\$23,912,179	\$23,760,848	\$84,505	\$76,826	\$104,224
Taxes.....	\$4,050,274	\$4,045,981	\$3,611,261	\$74,065	\$360,655	\$4,293
Contract.....	\$26,612,163	\$25,773,700	\$25,766,157	\$1,543	\$3,000	\$38,463
Expenditures for development (included in the above items).....	\$74,574,988	\$71,703,732	\$71,259,170	\$107,065	\$337,497	\$2,871,256
Value of products.....	\$160,378,058	\$160,378,058	\$143,337,362	\$4,322,100	\$12,718,596	
Persons engaged in industry.....	23,222	22,890	17,904	2,862	2,124	332
Proprietors and firm members (total).....	494	484	453	4	27	10
Number performing manual labor.....	58	52	47	2	3	6
Salaried officers.....	352	329	262	44	23	23
Superintendents and managers.....	1,010	971	852	53	66	39
Technical employees.....	233	226	183	9	34	7
Clerks, etc.....	2,790	2,716	2,555	41	120	74
Wage earners (average number).....	18,343	18,164	13,599	2,711	1,854	179
Wage earners by occupation (Dec. 15):						
Above ground (total).....	19,025	18,715	16,588	394	1,733	310
Below ground (total).....	2,732	2,732		2,455	277	
Foremen, shift bosses, etc.—						
Above ground.....	131	131		43	88	
Below ground.....	65	65		56	9	
Engineers, hoist men, electricians, mechanics, etc.—						
Above ground.....	10,035	9,839	9,357	113	369	196
Below ground.....	80	86		85	1	
Miners, quarrymen, and drill men, including their helpers—						
Above ground.....	232	232		32	200	
Below ground.....	1,863	1,863		1,783	80	
Timbermen, trackmen, and men engaged, in hauling, tramming, etc.—						
Above ground.....	148	148		60	88	
Below ground.....	509	509		448	61	
Muckers, loaders, laborers, and others not classified—						
Above ground.....	8,280	8,166	7,231	146	789	114
Below ground.....	269	269		83	126	
Wage earners employed in mills and beneficiating plants—						
Above ground.....	199	199			199	
Number of females included in wage earners reported above—						
Above ground.....	35	35	35			
Number of wage earners under 16 years of age included in those reported above—						
Above ground.....	10	10		8	2	
Mineral and oil land operated.....acres.	1,550,899	1,397,678	1,289,710	50,124	57,844	153,221
Land controlled, total.....acres.	1,639,481	1,486,260	1,289,710	135,288	61,262	153,221
Mineral and oil land owned.....	108,413	107,867	35,245	32,433	40,189	546
Mineral and oil land leased.....	1,442,516	1,289,841	1,254,465	17,721	17,635	152,675
Timber and other lands owned and leased.....	88,552	88,552		85,134	3,418	
Power used: Aggregate horsepower.....	131,247	129,063	107,549	6,137	15,377	2,184
Prime movers (horsepower, total).....	128,093	125,909	106,174	6,042	13,693	2,184
Steam engines—						
Number.....	2,494	2,454	2,174	76	204	40
Horsepower.....	74,655	72,967	58,988	5,190	8,789	1,688
Steam turbines—						
Number.....	6	6		1	5	
Horsepower.....	2,700	2,700		100	2,600	
Internal-combustion engines—						
Number.....	1,854	1,829	1,734	11	84	25
Horsepower.....	50,736	50,240	47,186	732	2,302	496
Water wheels, turbines, and motors—						
Number.....	1	1			1	
Horsepower.....	2	2			2	
Purchased power (horsepower, total).....	3,154	3,154	1,375	95	1,684	
Electric motors operated by purchased current—						
Number.....	129	129	64	3	62	
Horsepower.....	3,154	3,154	1,375	95	1,684	
Electric motors run by current generated by enterprise using:						
Number.....	164	163	95	25	43	1
Horsepower.....	4,625	4,623	2,442	783	1,398	2
Fuel used:						
Coal, bituminous.....tons, 2,000 pounds.	68,057	66,743	8,089	53,867	4,787	1,314
Coke.....tons, 2,000 pounds.	5,170	5,170			5,170	
Wood.....cords.	2,176	2,176			2,176	
Fuel oils.....barrels.	2,899,651	2,739,860	2,332,649	800	406,351	159,791
Gasoline and other volatile oils.....barrels.	14,187	13,287	9,527	155	3,605	900
Natural gas.....1,000 cubic feet.	10,774,715	10,396,846	10,285,933	110,913		377,899

¹ Not including a small operation inseparably combined with report on Oklahoma operations.

² Includes enterprises as follows: Asphalt, 1; basalt, 1; clay, 2; fuller's earth, 1; gold and silver, lode mines, 1; granite, 8; graphite, 1; gypsum, 3; iron ore, 1; limestone, 12; marble, 1; quicksilver, 4; sulphur, 2.

³ Exclusive of 1 coal-mining enterprise to avoid disclosure of individual operations.