

NORTH CAROLINA:

INDUSTRIES IN GENERAL.

General character of the state.—North Carolina has a gross area of 52,426 square miles, of which 3,686 represent water surface. Its population in 1910 was 2,206,287, as compared with 1,893,810 in 1900 and 1,617,949 in 1890. It ranked sixteenth among the 49 states and territories of continental United States as regards population in 1910 and fifteenth in 1900. The density of population for the state is 45.3 per square mile, the corresponding figure for 1900 being 38.9. The population of North Carolina is mostly rural, only 14.4 per cent of the entire population of the state residing in incorporated cities and towns having a population of 2,500 inhabitants or over, as against 9.9 per cent in 1900.

The state has seven cities having a population of over 10,000: Charlotte, Wilmington, Raleigh, Asheville, Durham, Winston, and Greensboro. These seven cities contain 6.8 per cent of the total population of the state and are credited with 28.2 per cent of the total value of its manufactures. The harbors, rivers, and railway systems of the state are important factors in furthering its manufacturing and commercial interests. The streams also furnish abundant water power, the use of which in the manufactures of the state has increased decidedly during recent years. The large local supply of fuel also adds greatly to the possibilities of the state for manufacturing.

Importance and growth of manufactures.—Its recent growth in manufactures has placed North Carolina among the leading manufacturing states of the South.

To a large extent, its manufacturing industries depend upon the products of its soil. Each succeeding census from 1849 to 1909 has shown a large increase in the value of the manufactured products of North Carolina. From a total of \$9,111,000 in 1849, it had increased in 1889 to \$40,375,000, while the increase during the last two decades has been even more rapid. The value reported for 1899 was \$85,274,000, exclusive of the hand trades and neighborhood industries; for 1904 it was \$142,521,000; and for 1909, \$216,656,000. During 1849 an average of 14,601 wage earners, representing 1.7 per cent of the total population, were employed in manufactures, while in 1909 an average of 121,473 wage earners, or 5.5 per cent of the total population, were so engaged. During this period the gross value of products per capita of the total population of the state increased from \$10 to \$98. From 1849 to 1909, however, the proportion which the manufactures of the state represent of the total value of products of manufacturing industries in the United States has increased but little. This proportion was nine-tenths of 1 per cent in 1849 and 1 per cent in 1909. In the former year the state was the twentieth in the Union in respect to value of manufactures, and in 1909, twenty-third.

The following table gives the most important figures relative to all classes of manufactures combined for the state as returned at the censuses of 1909, 1904, and 1899, together with the percentages of increase from census to census:

	NUMBER OR AMOUNT.			PER CENT OF INCREASE. ¹	
	1909	1904	1899	1904-1909	1899-1904
Number of establishments.....	4,931	3,272	3,465	50.7	-5.6
Persons engaged in manufactures.....	133,453	93,142	(²)	43.3	-----
Proprietors and firm members.....	5,451	3,731	(²)	46.1	-----
Salaried employees.....	6,529	4,072	2,894	60.3	40.7
Wage earners (average number).....	121,473	85,339	72,322	42.3	18.0
Primary horsepower.....	378,556	216,622	154,467	74.8	40.2
Capital.....	\$217,186,000	\$141,001,000	\$68,283,000	54.0	106.5
Expenses.....	186,463,000	122,391,000	70,934,000	52.4	72.5
Services.....	41,259,000	25,170,000	16,447,000	63.9	53.0
Salaries.....	6,904,000	3,795,000	2,395,000	81.9	58.5
Wages.....	34,355,000	21,375,000	14,052,000	60.7	52.1
Materials.....	121,861,000	79,268,000	44,854,000	53.7	76.7
Miscellaneous.....	23,343,000	17,953,000	9,633,000	30.0	86.4
Value of products.....	216,656,000	142,521,000	85,274,000	52.0	67.1
Value added by manufacture (value of products less cost of materials).....	94,795,000	63,253,000	40,420,000	49.9	56.5

¹ A minus sign (-) denotes decrease.

² Figures not available.

In 1909 the state of North Carolina had 4,931 manufacturing establishments, which gave employment to

an average of 133,453 persons during the year and paid \$41,259,000 in salaries and wages. Of the (897)

persons employed, 121,473 were wage earners. These establishments turned out products to the value of \$216,656,000, using materials costing \$121,861,000. The value added by manufacture was thus \$94,795,000, which figure, as explained in the Introduction, best represents the net wealth created by manufacturing operations during the year.

In general, this table shows a marked development in the manufactures of the state during the 10-year period 1899-1909. During the five-year period 1899-1904 the number of establishments decreased 5.6 per cent, but the average number of wage earners increased 18 per cent, and the value of products 67.1 per cent. In the period 1904-1909 the percentages of increase were, as a whole, more uniform, the number of establishments showing an increase of 50.7 per cent, the average number of wage earners an increase of 42.3

per cent, and the value of products an increase of 52 per cent. As pointed out in the Introduction, it would be improper to infer that manufactures increased in volume to the full extent indicated by these figures regarding values, since the increase shown is certainly due, in part, to the increase that has taken place in the price of commodities.

It is a matter of interest to note that the percentage of increase shown for wages is larger than that shown for the average number of wage earners. It is also significant that the primary horsepower increased far more rapidly from 1904 to 1909 than from 1899 to 1904, the respective rates of increase being 74.8 and 40.2 per cent.

The relative importance and growth of the leading manufacturing industries of the state are shown in the following table:

INDUSTRY.	Number of establishments.	WAGE EARNERS.		VALUE OF PRODUCTS.		VALUE ADDED BY MANUFACTURE.		PER CENT OF INCREASE. ¹			
		Average number.	Percent distribution.	Amount.	Percent distribution.	Amount.	Percent distribution.	Value of products.		Value added by manufacture.	
								1904-1909	1899-1904	1904-1909	1899-1904
All Industries.....	4,931	121,473	100.0	\$216,656,000	100.0	\$94,795,000	100.0	62.0	67.1	49.9	56.6
Cotton goods, including cotton small wares.....	281	47,231	38.9	72,080,000	33.5	23,992,000	25.3	53.8	66.5	68.6	28.5
Tobacco manufactures.....	43	8,203	6.8	35,987,000	16.6	22,171,000	23.4	28.1	102.8	23.6	38.1
Lumber and timber products.....	2,544	34,001	28.0	33,525,000	15.5	20,991,000	22.1	72.0	11.7	63.0	27.5
Oil, cottonseed, and cake.....	63	1,165	1.0	8,504,000	3.9	1,414,000	1.5	126.8	40.0	78.3	53.7
Flour-mill and gristmill products.....	249	496	0.4	8,501,000	3.9	1,214,000	1.3	23.8	45.9	38.3	2.4
Furniture and refrigerators.....	117	5,533	4.6	7,885,000	3.6	3,487,000	3.7	27.5	299.6	13.4	274.2
Fertilizers.....	34	933	0.8	6,316,000	2.9	2,133,000	2.2	103.8	106.9	142.1	94.1
Leather, tanned, curried, and finished.....	30	832	0.7	5,415,000	2.5	1,259,000	1.3	103.4	77.2	101.8	67.3
Hosiery and knit goods.....	62	5,151	4.2	5,152,000	2.4	2,140,000	2.3	107.4	142.8	96.5	109.8
Carriages and wagons and materials.....	138	1,629	1.3	3,283,000	1.5	1,389,000	1.5	42.5	118.4	29.2	101.3
Cars and general shop construction and repairs by steam-railroad companies.....	12	2,568	2.1	2,934,000	1.4	1,373,000	1.4	20.0	61.7	23.7	79.6
Foundry and machine-shop products.....	102	1,400	1.2	2,771,000	1.3	1,526,000	1.6	2.4	94.0	14.5	102.9
Printing and publishing.....	322	1,376	1.1	2,497,000	1.2	1,852,000	2.0	51.1	59.1	45.7	69.9
Clothing, men's, including shirts.....	21	882	0.7	1,653,000	0.8	613,000	0.6	.....	.....	.....	.....
Brick and tile.....	159	1,460	1.2	1,174,000	0.5	806,000	0.8	68.7	8.6	62.4	7.1
Marble and stone work.....	66	807	0.7	881,000	0.4	655,000	0.7	120.8	99.5	106.0	92.7
Cordage and twine and jute and linen goods.....	7	401	0.4	824,000	0.4	265,000	0.3	-20.5	.....	19.9	.....
Woolen, worsted, and felt goods, and wool hats.....	11	424	0.3	675,000	0.3	283,000	0.3	21.4	91.7	88.7	76.5
Turpentine and rosin.....	79	139	0.1	674,000	0.3	191,000	0.2	-9.3	-29.6	15.8	-30.7
Ice, manufactured.....	45	318	0.3	650,000	0.3	470,000	0.5	57.7	88.3	49.2	98.1
Bread and other bakery products.....	54	189	0.2	539,000	0.2	198,000	0.2	119.1	129.9	75.2	130.6
Patent medicines and compounds and druggists' preparations.....	26	60	(2)	474,000	0.2	258,000	0.3	78.2	195.6	103.1	135.2
Leather goods.....	33	135	0.1	427,000	0.2	170,000	0.2	39.5	102.6	47.8	79.7
Boots and shoes, including cut stock and findings.....	7	178	0.1	408,000	0.2	166,000	0.2	119.4	154.8	140.6	245.0
Copper, tin, and sheet-iron products.....	26	184	0.2	374,000	0.2	160,000	0.2	92.8	92.1	83.9	67.3
Gas, illuminating and heating.....	14	151	0.1	369,000	0.2	246,000	0.3	65.5	71.5	61.8	63.4
Coffins, burial cases, and undertakers' goods.....	9	226	0.2	352,000	0.2	105,000	0.2	29.9	127.7	-3.0	151.2
Confectionery.....	18	79	0.1	345,000	0.2	99,000	0.1	315.7	.....	200.0	.....
Mattresses and spring beds.....	23	166	0.1	315,000	0.1	143,000	0.2	92.1	192.9	155.4	194.7
Agricultural implements.....	22	132	0.1	262,000	0.1	172,000	0.2	106.3	28.3	123.3	31.0
All other industries.....	325	4,844	4.0	10,801,000	5.0	4,755,000	5.0	.....	.....	.....	.....

¹ Percentages are based on figures in Table I; a minus sign (-) denotes decrease. Where the percentages are omitted, comparable figures can not be given.
² Less than one-tenth of 1 per cent.

It should be borne in mind, in considering this table, that the value of products in some of the industries involves a certain amount of duplication due to the use of the product of one establishment in the industry as material for another establishment.

The most important industries listed in this table, in which they are arranged in the order of the value of products, call for brief consideration.

Textiles.—The combined products of all textile manufactures, exclusive of four establishments engaged in the manufacture of silk and silk goods, statistics for which could not be shown without disclosing individual operations, amounted in 1909 to \$78,507,000 in value, or 36.2 per cent of the total value of all manufactured products of the state.

The establishments classified under the head of

"Cotton goods, including cotton small wares," in North Carolina comprise mills primarily engaged in the manufacture of cotton goods, no establishments being reported as engaged mainly in the manufacture of cotton small wares. The cotton-goods industry occupies first place among the individual industries of the state. The remarkable growth of this industry in the state indicates a tendency to locate the mills near the source of supply of cotton. In 1909 North Carolina stood second, in order of importance among the cotton-manufacturing states, in value of products, first in number of establishments, and third in number of producing spindles, while in 1889 it ranked but tenth in value of products, fourth in number of establishments, and tenth in number of spindles. It will be noted that the percentage of increase of this industry in value of products was much higher than that in value added by manufacture during the period 1899-1904, but that during the period 1904-1909 the rate of increase in value added by manufacture was the greater. This variation is due, probably, in part, to the rise in the price of cotton during the former period and the manufacture of a better grade of goods in the latter period.

The manufacture of hosiery and knit goods is closely allied to the cotton industry, the products of this industry being made almost entirely of cotton materials. Although the value of these products is small when compared with that reported for cotton goods, it amounted in 1909 to \$5,152,000, an increase of 107.4 per cent since 1904.

The establishments classified in the table under the head of "Woolen, worsted, and felt goods, and wool hats," consist entirely of establishments primarily engaged in the manufacture of woolen goods.

Tobacco manufactures.—With an actual increase in value of products from 1904 to 1909, amounting to \$7,898,670, this industry shows a lower percentage of increase for this five-year period than for the earlier five-year period. In number of establishments the industry shows an absolute decrease from 96 in 1899 to 55 in 1904 and to 43 in 1909. It is interesting to note that the cotton-goods and tobacco manufacturing industries combined, two industries depending almost entirely upon agricultural products of the state for raw material, represent 50.2 per cent of the total value of all manufactured products reported for the state in 1909.

Lumber and timber products.—In respect to the number of establishments engaged in this industry, North Carolina occupied second place among the states in 1909. In addition to sawmills and logging camps, the establishments classified under this head include planing mills and establishments making wooden packing boxes. The rate of increase in value of products from 1904 to 1909, 72 per cent, is noteworthy for a long-established industry. It is due

partly to the more thorough canvass made in 1909 than in 1904 but mainly to the expansion of the industry under the stimulus of the general advance in lumber values. Of the totals reported for all industries, this industry employed 28 per cent of the average number of wage earners, manufactured 15.5 per cent of the total value of products, and showed 22.1 per cent of the total value added by manufacture.

Oil, cottonseed, and cake.—The statistics presented include those for all establishments engaged primarily in extracting oil from cotton seed or in refining crude cottonseed oil. For the five-year period 1904-1909 this industry shows a greater percentage of increase in value of products than any other of the more important industries in the state. In 1909 it had become the fourth industry in importance, outranking the flour-mill and gristmill and the furniture industries, which occupied fourth and fifth places, respectively, in 1904. While this large increase was due, in part, to the rise in the value of crude cottonseed oil, the industry has shown a consistent and rapid growth from census to census.

Flour-mill and gristmill products.—This classification does not include mills engaged wholly in custom work, the statistics for which are presented separately at the end of the report. In a predominantly agricultural state like North Carolina it is natural that the products of the flour mills and gristmills should be large; the percentages of increase shown by this industry, are, however, relatively small, as compared with those for other industries of the state. In 1909 employment was given to 496 wage earners, and products valued at \$8,501,000, representing 3.9 per cent of the total for the state, were reported.

Furniture and refrigerators.—This industry shows a remarkable development, having grown from only six establishments, with products valued at \$159,000, in 1889, to one of the most important industries of the state in 1909. For the latter year, reports were received from 117 establishments, which gave employment to 5,533 wage earners and reported products to the value of \$7,885,000. The greater part of this growth took place previous to 1904, though the five-year period 1904-1909 showed a gain of 27.5 per cent in value of products.

If the industries were arranged in order of the value added by manufacture, the three leading ones would still hold the relative positions which they have in the table, where they are arranged according to the value of products. The furniture industry, however, would stand in fourth place instead of sixth, while the cottonseed-oil industry would drop from fourth to ninth place, and the flour-mill and gristmill industry from fifth to thirteenth place. Hosiery and knit goods and fertilizers would occupy fifth and sixth places, respectively. Because of the comparatively simple processes involved in flour mills and gristmills, in cottonseed-oil

mills, and in several other industries, and the extent to which these processes are carried on by machinery, the value added by manufacture is not commensurate with the gross value of products.

This table shows the percentages of increase for these leading industries in respect to value of products and value added by manufacture. The fertilizer industry showed a greater rate of increase from 1904 to 1909 in value added by manufacture than any other of the specified industries which had products exceeding \$1,000,000 in value, namely, 142.1 per cent, while during the same period the cottonseed-oil industry showed the greatest rate of increase in value of products, 126.8 per cent. The manufacture of leather, hosiery and knit goods, bakery products, and marble and stone work, are all industries which showed remarkable increases, both in gross value of products and in value added by manufacture. Among the less important industries, the manufacture of confectionery showed the most pronounced increase in value of products, 315.7 per cent, and in value added by manufacture, 200 per cent.

The cordage and twine industry, with a decrease of 20.5 per cent, and the manufacture of turpentine and rosin, with a decrease of 9.3 per cent, are the only industries listed in the table which show a decrease in value of products from 1904 to 1909. The manufacture of coffins is the only industry which shows a decrease in value added by manufacture during the period named, while the turpentine and rosin industry was the only one showing a decrease in either item from 1899 to 1904.

In addition to the industries listed separately in the table there are seven important industries each of which had a value of products in 1909 in excess of \$200,000. They are included under the head of "All other industries," because, in some instances, the operations of individual establishments would be disclosed if they were shown separately; while in others, the returns do not properly present the true condition of the industry, for the reason that it is more or less interwoven with one or more industries of similar character. These industries are the manufacture of bags, other than paper, dyestuffs and extracts, mineral and soda waters, mirrors, silk and silk goods, paper and wood pulp, and the dyeing and finishing of textiles. The 1909 statistics for the manufacture of mirrors are presented in Table II.

Persons engaged in manufacturing industries.—The following table shows, for 1909, the distribution of the number of persons engaged in manufactures, the average number of wage earners being distributed by sex and age. It should be borne in mind, however, that the sex and age classification of the average number of

wage earners in this and other tables is an estimate obtained by the method described in the Introduction.

CLASS.	PERSONS ENGAGED IN MANUFACTURES.		
	Total.	Male.	Female.
All classes.....	133,453	105,175	28,278
Proprietors and officials.....	8,937	8,875	62
Proprietors and firm members.....	5,451	5,395	56
Salaries officers of corporations.....	1,460	1,456	4
Superintendents and managers.....	2,026	2,024	2
Clerks.....	3,043	2,513	530
Wage earners (average number).....	121,473	93,787	27,686
16 years of age and over.....	107,775	86,082	21,693
Under 16 years of age.....	13,698	7,705	5,993

The average number of persons engaged in manufactures during 1909 was 133,453, of which 121,473 were wage earners. Of the remainder, 8,937 were proprietors and officials and 3,043 were clerks. Corresponding figures for individual industries will be found in Table II.

The following table shows, for 1909, the percentage of proprietors and officials, clerks, and wage earners, respectively, among the total number of persons employed in manufactures. It covers all industries combined and 10 important industries individually.

INDUSTRY.	PERSONS ENGAGED IN MANUFACTURES.			
	Total number.	Per cent of total.		
		Proprietors and officials.	Clerks.	Wage-earners (average number).
All industries.....	133,453	6.7	2.3	91.0
Carriages and wagons and materials.....	1,922	12.2	3.0	84.8
Cotton goods, including cotton small wares.....	48,525	1.9	0.8	97.3
Fertilizers.....	1,117	7.2	9.3	83.5
Flour-mill and gristmill products.....	971	44.6	4.3	51.1
Furniture and refrigerators.....	6,023	4.9	3.3	91.9
Hosiery and knit goods.....	5,361	2.7	1.2	96.1
Leather, tanned, curried, and finished.....	938	7.7	3.6	88.7
Lumber and timber products.....	38,636	10.0	1.1	88.0
Oil, cottonseed, and cake.....	1,446	8.9	10.5	80.6
Tobacco manufactures.....	9,065	2.5	7.0	90.5
All other industries.....	19,449	11.3	4.9	83.8

Of the total number of persons engaged in all manufacturing industries, 6.7 per cent were proprietors and officials, 2.3 per cent clerks, and 91 per cent wage earners. In the flour-mill and gristmill industry a large number of the establishments are small and the work is to a large extent done by the proprietors or their immediate representatives, so that the proportion of the persons engaged in the industry falling in the class of proprietors and officials is very much higher than for most other industries or for all industries combined. Similar conditions prevail to some extent in the carriage and wagon industry and in lumber mills. The smallest proportion for this class, 1.9 per cent, is shown for the cotton industry, where it is due not only

to the large average number of wage earners to an individual establishment, but also to the fact that these establishments are operated mostly by corporations, for which no proprietors are reported.

The following table shows, for 1909, in percentages, for all industries combined, the distribution of the average number of wage earners by age periods, and for those 16 years of age and over by sex, calculated in the manner described in the Introduction. It also shows, for some of the important industries separately, a similar distribution of wage earners as reported for December 15, or the nearest representative day. As a means of judging the importance of the several industries, the average total number employed for the year is also given in each case.

INDUSTRY.	WAGE EARNERS.			
	Average number. ¹	Per cent of total.		
		16 years of age and over.		Under 16 years of age.
		Male.	Female.	
All industries.....	121,473	70.9	17.9	11.3
Carriages and wagons and materials.....	1,629	95.2	0.4	4.4
Cotton goods, including cotton small wares.....	47,231	51.1	30.0	18.9
Fertilizers.....	933	100.0		
Flour-mill and gristmill products.....	496	98.0	0.0	1.4
Furniture and refrigerators.....	5,533	92.4	(2)	7.0
Hosiery and knit goods.....	5,151	22.5	49.7	27.7
Leather, tanned, curried, and finished.....	832	99.5		0.5
Lumber and timber products.....	34,001	98.6	0.1	1.3
Oil, cottouseed, and cake.....	1,165	97.9	0.1	2.1
Tobacco manufactures.....	8,203	54.1	28.8	17.1
All other industries.....	16,299	78.4	15.7	5.9

¹ For method of estimating the distribution, by sex and age periods, of the average number in all industries combined, see Introduction.
² Less than one-tenth of 1 per cent.

For all industries combined, 70.9 per cent of the average number of wage earners were males 16 years of age and over; 17.9 per cent, females 16 years of age and over; and 11.3 per cent, persons under the age of 16. The largest proportion of women were employed in hosiery and knitting mills, while the largest proportions of children were employed in hosiery and in cotton mills. The proportions for the mills producing cotton goods are of special significance, because of the magnitude of the industry in the state. Out of a total of 47,231 wage earners employed in these mills, only 51.1 per cent of the average number of wage earners were males 16 years of age and over, 30 per cent were females 16 years of age and over, and 18.9 per cent children under 16 years of age. In the hosiery and knitting mills, with a total of 5,151 workers employed, one-half were women and over one-fourth children, and in the tobacco factories, with a total of 8,203 wage earners, about one-fourth were women and one-sixth children. The men's clothing industry, which is not shown in the table, and which gave employment to a comparatively small number of wage earners, namely, 882, reported the largest per cent

of women, namely, 81.5 per cent. With these four industries omitted, the average number of females 16 years of age and over in all industries combined would represent only 1.6 per cent of the total number of wage earners, and the average number of persons under 16 years of age would represent the same proportion.

In order to compare the distribution of persons engaged in manufactures in 1909 with that shown at the census of 1904, it is necessary to use the classification employed at the earlier census. (See Introduction.) The following table makes this comparison according to occupational status:

CLASS.	PERSONS ENGAGED IN MANUFACTURES.				
	1909		1904		Per cent of increase, 1904-1909.
	Number.	Per cent distribution.	Number.	Per cent distribution.	
Total.....	133,453	100.0	93,142	100.0	43.3
Proprietors and firm members.....	5,451	4.1	3,731	4.0	46.1
Salaried employees.....	6,529	4.9	4,072	4.4	60.3
Wage earners (average number).....	121,473	91.0	85,339	91.6	42.3

Comparable figures are not obtainable for 1899. The table shows a greater percentage of increase in the salaried employees than in the other two classes.

The following table shows the average number of wage earners, distributed according to age periods, and in the case of those 16 years of age and over according to sex, for 1909, 1904, and 1899. The averages for 1909 are estimated on the basis of the actual number reported for a single representative day. (See Introduction.)

CLASS.	AVERAGE NUMBER OF WAGE EARNERS.					
	1909		1904		1899	
	Number.	Per cent distribution.	Number.	Per cent distribution.	Number.	Per cent distribution.
Total.....	121,473	100.0	85,339	100.0	72,322	100.0
16 years of age and over.....	107,775	88.7	73,707	86.4	62,112	85.9
Male.....	86,082	70.9	55,406	64.9	47,028	65.0
Female.....	21,693	17.9	18,301	21.4	15,084	20.9
Under 16 years of age.....	13,698	11.3	11,632	13.6	10,210	14.1

This table indicates that while for all industries combined there has been an increase during the 10 years in the number of children employed, this increase has not been in proportion to the increase in the total number of wage earners. So, too, with an increase in the actual number of women employed, there has been a decrease during the past five years in the percentage of women in the whole number of wage earners. In 1909 males 16 years of age and over formed 70.9 per cent of all wage earners, as compared with 64.9 per cent in 1904 and 65 per cent in 1899.

Wage earners employed, by months.—The following table gives the number of wage earners employed on the 15th of each month during the year 1909, for all industries combined; it gives also the percentage which the number reported for each month is of the greatest number reported for any month. In Table II, page 914, is shown, for most of the industries in the state, the largest number and also the smallest number of wage earners reported for any month. The figures are for the 15th day, or the nearest representative day, of the month.

MONTH.	WAGE EARNERS.		MONTH.	WAGE EARNERS.	
	Number.	Per cent of maximum.		Number.	Per cent of maximum.
January.....	117,007	90.9	July.....	118,953	92.4
February.....	118,464	92.0	August.....	120,417	93.5
March.....	120,354	93.5	September.....	123,498	95.9
April.....	120,038	93.2	October.....	126,265	98.1
May.....	118,441	92.0	November.....	127,774	99.2
June.....	117,713	91.4	December.....	128,754	100.0

This table indicates a very considerable degree of steadiness of employment in the manufacturing industries of North Carolina, taken as a whole. The number employed in January, the month of least employment, was 90.9 per cent of the number for Decem-

ber, the month of greatest employment. The figures in Table II show that in the cotton-goods industry, the most important in the state, employment was very steady, the number employed for January, the lowest month, being 94.2 per cent of the number for December, the highest month. There are certain seasonal industries—brick and tile, canning and preserving, fertilizers, and cottonseed-oil—in which the number employed for the maximum month was considerably greater than the number for the minimum month, but the total number of wage earners in these industries is small. In the important lumber industry, which in some of the more northern states is decidedly seasonal in character, the climatic conditions in North Carolina permit a considerable degree of steadiness of employment; the minimum number for this industry in June was 84.9 per cent of the maximum number in December.

Prevailing hours of labor.—In the following table wage earners have been classified according to the hours of labor prevailing in the establishments in which they are employed. In making this classification the average number of wage earners employed during the year is used, and the number employed in each establishment is classified as a total according to the hours prevailing in that establishment, even though a few employees work a greater or less number of hours.

INDUSTRY.	AVERAGE NUMBER OF WAGE EARNERS IN ESTABLISHMENTS GROUPED ACCORDING TO PREVAILING HOURS OF WORK PER WEEK.								
	Total.	48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72.	Over 72.
All industries.....	121,473	1,648	1,447	3,741	14,016	47,974	49,834	2,672	141
Agricultural implements.....	132				54	76			
Boots and shoes, including cut stock and findings.....	178					178	2		
Bread and other bakery products.....	189	15		6		69	11	58	
Brick and tile.....	1,460	19	86	22	288	962	43		10
Carriages and wagons and materials.....	1,620	19	8	32	252	1,308	4	8	
Cars and general shop construction and repairs by steam-railroad companies.....	2,568		121	2,380		58			
Clothing, men's, including shirts.....	882	9		50	79	744			
Coffins, burial cases, and undertakers' goods.....	226				111	115			
Confectionery.....	79	3		6		54	12	2	2
Copper, tin, and sheet-iron products.....	184		41	65	13	65			
Cordage and twine and jute and linen goods.....	491				119	100	272		
Cotton goods, including cotton small wares.....	47,231				52	7,499	39,680		
Fertilizers.....	933			2	70	686	36	139	
Flour-mill and gristmill products.....	496	14	4	7	18	307	117	29	
Foundry and machine-shop products.....	1,490	6	6	113	234	1,123	3		
Furniture and refrigerators.....	5,533	3	1	168	802	4,559			
Gas, illuminating and heating.....	151					59	52		40
Hosiery and knit goods.....	5,151				680	2,524	1,938		
Ice, manufactured.....	318			3		71		154	87
Leather goods.....	135				4	131			
Leather, tanned, curried, and finished.....	832			1	8	820	2		
Lumber and timber products.....	34,001	733	729	257	2,645	22,838	6,540	259	
Marble and stone work.....	807	118	319	220	74	76			
Mattresses and spring beds.....	166					119	3		
Oil, cottonseed, and cake.....	1,165	4		8	32	43	95	1,025	2
Patent medicines and compounds and druggists' preparations.....	80			23	2	18			
Printing and publishing.....	1,376	17	70	303	137	297	37		
Tobacco manufactures.....	8,208	66	59	4	7,628	446			
Turpentine and rosin.....	139	69	2			60		7	
Woolen, worsted, and felt goods, and wool hats.....	424					315	109		
All other industries.....	4,844	26		52	705	2,196	874	991	

It is evident from these figures that for most of the wage earners employed in the manufacturing industries of North Carolina the prevailing hours of

labor were 60 or more a week, or 10 or more a day. Out of a total average number of 47,231 wage earners employed in the cotton-goods industry, 39,680,

or 84 per cent, were in establishments where the prevailing hours of labor were over 60 per week. The reports indicate that the industry is mainly on a basis of 11 hours per day, or from 63 to 66 hours per week. This condition prevails to some extent in the hosiery and knitting mills, although less than two-fifths of the wage earners in these mills are required to work more than 10 hours a day, or more than 60 hours a week. In the lumber and other specified industries shown, with the exception of the tobacco factories and the car repair shops, the 10-hour day, or 60-hour week, predominates. In tobacco manufactures the prevailing hours are more than 54 but less than 60 a week, while the car repair shops are distinctly on a 9-hour-day basis.

Location of establishments.—The following table shows how largely manufacturing in the state is confined to rural districts and small towns. (See Introduction.) The statistics for 1904 are omitted from this table, because there was no Federal census of population for that year, and it was impossible to determine the cities that come within the group having over 10,000 inhabitants.

ITEM.	Year.	Total.	LOCATION OF ESTABLISHMENT		PER CENT OF TOTAL.	
			In cities with population of 10,000 and over.	Outside districts.	In cities with population of 10,000 and over.	Outside districts.
Population.....	1910	2,206,287	149,045	2,057,242	6.8	93.2
	1900	1,893,810	87,447	1,806,363	4.6	95.4
Number of establishments.	1900	4,931	453	4,478	9.2	90.8
	1899	3,465	250	3,209	7.4	92.6
Average number of wage earners.	1909	121,473	18,797	102,676	15.5	84.5
	1899	72,322	9,264	63,058	12.8	87.2
Value of products.	1909	\$216,656,065	\$61,171,160	\$155,484,895	28.2	71.8
	1899	85,274,083	14,530,673	70,743,410	17.0	83.0
Value added by manufacture.	1909	94,794,525	31,354,345	63,440,180	33.1	66.9
	1899	40,419,859	7,139,280	33,280,629	17.7	82.3

In 1909, 28.2 per cent of the total value of products was reported from cities having a population of over 10,000 inhabitants, and 15.5 per cent of the average number of wage earners were employed in such cities. The figures indicate that, on the whole, the industries of the manufacturing cities gained considerably on those of the outside districts during the last 10 years. This increase was due largely to the inclusion in 1909 of the city of Durham, which, in 1899, had less than 10,000 inhabitants, and so was included in outside districts.

The population, for 1910 and 1900, of the seven cities which had 10,000 inhabitants or over in 1910 is given in the next statement.

CITY.	1910	1900
Charlotte.....	34,014	18,091
Wilmington.....	25,748	20,976
Raleigh.....	19,213	13,043
Asheville.....	18,762	14,694
Durham.....	18,241	10,679
Winston.....	17,167	10,008
Greensboro.....	15,895	10,039

¹ Population less than 10,000 in 1900; therefore, in the preceding table, the statistics for 1899 are included with those for the districts outside of cities.

The relative importance in manufacturing industries of each of these seven cities is shown in the following table, in which the value of products and average number of wage earners are shown separately for 1909, 1904, and 1899. It should be noted that the figures represent only establishments within the city boundaries; in the case of some of the cities large establishments are located just outside.

CITY.	AVERAGE NUMBER OF WAGE EARNERS.			VALUE OF PRODUCTS.		
	1909	1904	1899	1909	1904	1899
Durham.....	3,718	(¹)	(¹)	\$23,271,525	(¹)	(¹)
Winston.....	6,708	4,850	2,894	16,778,072	\$11,353,296	\$4,887,649
Charlotte.....	4,199	2,234	2,787	10,459,684	4,849,630	4,180,644
Asheville.....	984	792	804	3,249,684	1,918,362	1,300,698
Wilmington ²	1,213	1,594	1,553	3,004,717	2,804,323	2,283,293
Raleigh.....	1,023	585	549	2,375,872	1,086,671	947,018
Greensboro ²	952	1,098	677	2,031,606	1,743,837	925,411

¹ Figures not available.

² Figures do not agree with those published in 1904, because it was necessary to revise the totals in order to include data only for those establishments located within the corporate limits of the city.

In general, all of the cities, except Wilmington, have made rapid progress in manufacturing. Durham, which entered this group at the present census, shows the largest value of products, although surpassed in the average number of wage earners by Winston and Charlotte. The manufacturing importance of Durham and Winston centers in their tobacco factories. Durham has also large cotton and hosiery and knitting mills, besides a number of other industries which had products exceeding \$100,000 in value. In Winston, in addition to the tobacco manufactures, the boot and shoe industry, confectionery, flour mills and gristmills, furniture, hosiery and knitting mills, and the lumber industry each reported an output for the year exceeding \$100,000 in value.

Charlotte, the city third in importance in the value of its manufactures, has a number of industries. The manufacture of men's clothing, cotton goods, cottonseed oil, and lumber, foundry and machine shops, and printing and publishing were the most important. Asheville reported a diversity of small establishments in addition to its important cotton mills, flour mills and gristmills, leather manufacturing establishments, and lumber mills.

Wilmington is not primarily a manufacturing community. Although a variety of industries were reported, the lumber, cottonseed-oil, and flour-mill and grist-mill industries contributed the largest part of the output. The cotton and cottonseed-oil mills and printing and publishing of Raleigh and the foundries and machine shops and lumber mills of Greensboro may be mentioned as the most important industries in these two cities.

Character of ownership.—The table that follows has

for its purpose the presentation of conditions in respect to the character of ownership, or legal organization, of manufacturing enterprises. For all industries combined comparative figures are given covering the censuses of 1909 and 1904. Comparative data for 1899 are not available. Figures for 1909 only are presented for several important industries individually. In order to avoid disclosing the operations of individual concerns it is necessary to omit several important industries from this table and the one following.

INDUSTRY AND CHARACTER OF OWNERSHIP.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.	INDUSTRY AND CHARACTER OF OWNERSHIP.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.
ALL INDUSTRIES:									
1900.....	4,931	121,473	\$216,656,055	\$94,794,525	Flour-mill and gristmill products, 1909—Continued.				
1904.....	3,272	85,339	142,520,776	68,252,772	Per cent of total.....	100.0	100.0	100.0	100.0
Individual:					Individual.....	42.6	29.4	26.1	27.3
1909.....	2,265	14,215	17,451,179	9,229,920	Firm.....	40.6	36.5	31.8	35.4
1904.....	1,425	10,184	14,318,319	7,159,172	Corporation.....	16.9	34.1	42.1	37.3
Firm:					Furniture and refrigerators, 1909.				
1909.....	1,303	11,302	16,051,420	7,900,722	Individual.....	117	5,533	\$7,884,679	\$3,486,869
1904.....	956	9,187	14,029,571	6,746,318	Individual.....	11	182	207,190	91,063
Corporation:					Firm.....	8	160	215,384	113,222
1909.....	1,339	95,885	182,140,604	77,584,474	Corporation.....	98	5,191	7,462,105	3,282,554
1904.....	879	65,954	113,510,110	49,320,121	Per cent of total.....	100.0	100.0	100.0	100.0
Other:					Individual.....	9.4	3.3	2.6	2.6
1909.....	24	71	112,792	70,409	Firm.....	6.8	2.9	2.7	3.2
1904.....	12	14	62,776	27,161	Corporation.....	83.8	93.8	94.6	94.1
Per cent of total:					Leather, tanned, curried, and finished, 1909.				
1909.....	100.0	100.0	100.0	100.0	Individual.....	39	832	\$5,415,495	\$1,259,344
1904.....	100.0	100.0	100.0	100.0	Individual.....	18	34	102,033	24,923
Individual:					Firm.....	11	145	1,607,374	358,907
1909.....	45.9	11.7	8.1	9.7	Corporation.....	10	653	3,646,028	875,514
1904.....	43.6	11.0	10.0	11.3	Per cent of total.....	100.0	100.0	100.0	100.0
Firm:					Individual.....	46.2	4.1	1.9	2.0
1909.....	26.4	9.3	7.8	8.3	Firm.....	23.2	17.4	30.8	28.5
1904.....	29.2	10.8	10.3	10.7	Corporation.....	25.0	78.5	67.3	69.5
Corporation:					Lumber and timber products, 1909.				
1909.....	27.2	78.9	84.1	81.8	Individual.....	2,544	34,001	\$38,524,653	\$20,991,066
1904.....	26.9	77.3	79.6	78.0	Individual.....	1,429	9,773	8,122,842	5,344,564
Other:					Firm.....	800	6,361	5,751,870	3,794,223
1909.....	0.5	0.1	0.1	0.1	Corporation ²	315	17,867	19,049,935	11,852,279
1904.....	0.4	(¹)	(¹)	(¹)	Per cent of total.....	100.0	100.0	100.0	100.0
Cotton goods, including cotton small wares, 1909.					Individual.....	50.2	28.7	24.2	25.5
Individual.....	281	47,231	\$72,680,385	\$23,992,813	Firm.....	31.4	18.7	17.2	18.1
Individual.....	9	648	924,400	354,330	Corporation ²	12.4	52.5	58.6	56.5
Firm.....	10	943	1,354,931	485,928	Tobacco manufactures, 1909.				
Corporation.....	262	45,640	70,401,045	23,162,055	Individual.....	43	8,203	\$35,986,639	\$22,170,571
Per cent of total.....	100.0	100.0	100.0	100.0	Individual.....	18	299	619,737	424,480
Individual.....	3.2	1.4	1.3	1.5	Firm.....	11	621	1,174,671	738,307
Firm.....	3.6	2.0	1.9	2.0	Corporation.....	14	7,283	34,192,231	21,007,684
Corporation.....	93.2	96.6	96.9	96.5	Per cent of total.....	100.0	100.0	100.0	100.0
Flour-mill and gristmill products, 1909.					Individual.....	41.9	3.6	1.7	1.9
Individual.....	249	496	\$8,501,219	\$1,214,331	Firm.....	25.6	7.0	3.3	3.3
Individual.....	106	146	2,210,058	332,007	Corporation.....	32.6	88.8	95.0	94.8
Firm.....	101	181	2,700,634	429,319					
Corporation.....	42	169	3,581,627	452,505					

¹ Less than one-tenth of 1 per cent.

² Includes the group "Other," to avoid disclosure of individual operations.

The most important distinction shown is that between corporate and all other forms of ownership. Although only 27.2 per cent of the total number of establishments were under corporate ownership, such establishments reported 84.1 per cent of the total value of products and 78.9 per cent of the total average number of wage earners. The percentages indicate that for all industries combined there was a slight increase from 1904 to 1909 in corporate control, when measured by value of products and value added by manufacture, with a corresponding decrease in individual and firm ownership. In the cotton-goods and furniture industries, as measured by number of establishments, the corporate form of ownership predominates, while in the flour-mill, leather, lumber, and tobacco industries, individual ownership is most prominent. In all the industries shown in the table, however, establishments under corporate ownership

report the largest proportion of the total value of products, this proportion exceeding 90 per cent in the case of the cotton-goods, furniture, and tobacco manufacturing industries.

Size of establishment.—The tendency for manufacturing to become concentrated in large establishments, or the reverse, is a matter of interest from the standpoint of industrial organization. In order to throw some light upon it the next table groups the establishments according to the value of their products. The table also shows the average size of establishments for all industries combined and for important industries separately as measured by number of wage earners, value of products, and value added by manufacture. The totals for all industries are shown for the last two censuses, while for certain important industries figures are given for 1909 only.

This table shows that in 1909 of the 4,931 establishments only 22, or four-tenths of 1 per cent, had a value of products exceeding \$1,000,000. These establishments, however, employed an average of 20,595 wage earners, or 17 per cent of the total number in all establishments, and reported 27.1 per cent of the total value of the products and 30.7 per cent of the total value added by manufacture.

On the other hand, the very small establishments—

that is, those having a value of products of less than \$5,000—constituted a considerable proportion (47.1 per cent) of the total number of establishments, but the value of their products amounted to only 2.4 per cent of the total. In 1909, 74.2 per cent of the total value of products was reported by the 431 establishments having products in excess of \$100,000 in value, although these establishments represented but 8.7 per cent of the total number.

INDUSTRY AND VALUE OF PRODUCTS.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.	INDUSTRY AND VALUE OF PRODUCTS.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.
ALL INDUSTRIES:									
1909.....	4,931	121,473	\$218,656,055	\$94,794,525	Flour-mill and gristmill products, 1909—Continued.				
1904.....	3,272	85,339	142,520,776	63,252,772	Per cent of total.....	100.0	100.0	100.0	100.0
Less than \$5,000:					Less than \$5,000.....	10.8	3.0	1.0	1.4
1909.....	2,322	6,970	5,151,695	3,432,538	\$5,000 and less than \$20,000.....	42.6	26.0	15.5	19.9
1904.....	1,276	2,946	3,118,617	2,064,947	\$20,000 and less than \$100,000.....	41.4	48.2	50.2	51.8
\$5,000 and less than \$20,000:					\$100,000 and less than \$1,000,000.....	5.2	22.8	33.4	27.0
1909.....	1,358	11,902	13,690,273	7,799,055	Average per establishment.....		2	\$34,141	\$4,377
1904.....	1,076	8,573	10,894,177	6,232,879	Furniture and refrigerators, 1909.....	117	5,533	\$7,884,879	\$3,486,869
\$20,000 and less than \$100,000:					Less than \$5,000.....	11	32	26,029	16,502
1909.....	820	24,074	37,172,248	16,594,882	\$5,000 and less than \$20,000.....	16	133	179,572	89,293
1904.....	602	17,930	27,111,101	11,815,958	\$20,000 and less than \$100,000.....	61	2,417	3,230,470	1,508,616
\$100,000 and less than \$1,000,000:					\$100,000 and less than \$1,000,000.....	29	2,901	4,448,608	1,872,548
1909.....	400	57,932	101,973,523	37,902,430	Per cent of total.....	100.0	100.0	100.0	100.0
1904.....	309	47,351	70,985,231	25,823,306	Less than \$5,000.....	9.4	0.6	0.3	0.5
\$1,000,000 and over:					\$5,000 and less than \$20,000.....	13.7	3.3	2.3	2.6
1909.....	22	20,595	58,668,316	29,065,620	\$20,000 and less than \$100,000.....	52.1	43.7	41.0	43.3
1904.....	9	8,539	30,411,050	17,312,682	\$100,000 and less than \$1,000,000.....	24.8	52.4	56.4	53.7
Per cent of total:					Average per establishment.....		47	\$67,390	\$29,802
1909.....	100.0	100.0	100.0	100.0	Leather, tanned, curried, and finished, 1909.....	89	832	\$5,415,495	\$1,259,344
1904.....	100.0	100.0	100.0	100.0	Less than \$5,000.....	22	18	30,426	18,731
Less than \$5,000:					\$5,000 and less than \$20,000.....	6	22	50,939	17,068
1909.....	47.1	5.7	2.4	3.6	\$20,000 and less than \$100,000.....	3	40	174,152	30,946
1904.....	39.0	3.5	2.2	3.3	\$100,000 and less than \$1,000,000.....	8	752	5,159,978	1,197,599
\$5,000 and less than \$20,000:					Per cent of total.....	100.0	100.0	100.0	100.0
1909.....	27.5	0.8	6.3	8.2	Less than \$5,000.....	56.4	2.2	0.6	1.1
1904.....	32.9	10.0	7.0	9.9	\$5,000 and less than \$20,000.....	15.4	2.6	0.9	1.4
\$20,000 and less than \$100,000:					\$20,000 and less than \$100,000.....	7.7	4.8	3.2	2.5
1909.....	16.6	19.8	17.2	17.5	\$100,000 and less than \$1,000,000.....	20.5	90.4	95.3	95.1
1904.....	18.4	21.0	19.0	18.7	Average per establishment.....		21	\$138,859	\$32,291
\$100,000 and less than \$1,000,000:					Lumber and timber products, 1909.....	2,544	84,001	\$38,524,658	\$20,981,056
1909.....	8.3	47.7	47.1	40.0	Less than \$5,000.....	1,525	5,499	3,271,530	2,294,528
1904.....	9.4	55.5	49.8	40.8	\$5,000 and less than \$20,000.....	685	7,586	6,427,028	4,278,951
\$1,000,000 and over:					\$20,000 and less than \$100,000.....	284	10,989	11,848,080	6,921,100
1909.....	0.4	17.0	27.1	30.7	\$100,000 and less than \$1,000,000.....	50	10,817	11,982,415	7,480,411
1904.....	0.3	10.0	21.3	27.4	Per cent of total.....	100.0	100.0	100.0	100.0
Average per establishment:					Less than \$5,000.....	59.9	16.2	9.8	10.9
1909.....		25	\$43,938	\$19,224	\$5,000 and less than \$20,000.....	28.9	22.3	19.2	20.4
1904.....		26	43,658	19,332	\$20,000 and less than \$100,000.....	11.2	29.7	35.3	33.0
Cotton goods, including cotton small wares, 1909.....	281	47,231	\$72,680,385	\$33,992,813	\$100,000 and less than \$1,000,000.....	2.0	31.8	35.7	35.7
\$5,000 and less than \$20,000.....	10	124	114,193	30,283	Average per establishment.....		13	\$13,178	\$8,251
\$20,000 and less than \$100,000.....	78	3,761	5,237,425	1,476,857	Tobacco manufactures, 1909.....	43	8,203	\$35,986,630	\$22,170,571
\$100,000 and less than \$1,000,000.....	184	34,868	51,858,858	17,399,276	Less than \$5,000.....	13	19	27,837	15,633
\$1,000,000 and over.....	9	8,478	15,469,909	5,086,397	\$5,000 and less than \$20,000.....	3	93	95,237	60,280
Per cent of total.....	100.0	100.0	100.0	100.0	\$20,000 and less than \$100,000.....	7	106	301,083	171,937
\$5,000 and less than \$20,000.....	3.6	0.3	0.2	0.1	\$100,000 and less than \$1,000,000.....	15	7,895	35,562,482	21,922,671
\$20,000 and less than \$100,000.....	27.8	8.0	7.2	6.2	Per cent of total.....	100.0	100.0	100.0	100.0
\$100,000 and less than \$1,000,000.....	65.5	73.8	71.4	72.5	Less than \$5,000.....	30.2	0.2	0.1	0.1
\$1,000,000 and over.....	3.2	18.0	21.3	21.2	\$5,000 and less than \$20,000.....	18.6	1.1	0.3	0.3
Average per establishment.....		168	\$258,649	\$85,384	\$20,000 and less than \$100,000.....	16.3	2.4	0.8	0.8
Flour-mill and gristmill products, 1909.....	249	496	\$8,501,219	\$1,214,331	\$100,000 and less than \$1,000,000.....	34.9	96.2	98.8	98.9
Less than \$5,000.....	27	15	83,942	16,681	Average per establishment.....		191	\$336,899	\$515,595
\$5,000 and less than \$20,000.....	106	129	1,315,678	241,204					
\$20,000 and less than \$100,000.....	103	239	4,266,144	628,559					
\$100,000 and less than \$1,000,000.....	13	113	2,835,455	327,887					

¹ Includes the group "Less than \$5,000."

² Includes the group "\$1,000,000 and over."

It will be seen from the above table that the group of establishments whose products exceed \$1,000,000 in value contributed a considerably greater proportion to the total value of products in 1909 than it did in 1904, while all the other groups, with the exception of that comprising the smallest establishments, show a decrease in their proportion of the total. Owing to the large increase in the number of small establishments, however, the average value of products per

establishment shows only a slight increase, while the average number of wage earners per establishment and the average value added by manufacture both show a slight decrease. When the size of establishments is measured by the average value of products, the establishments in the flour-mill and gristmill and the lumber industries are much smaller as a whole than are those manufacturing cotton goods, furniture, leather, and tobacco.

In some respects, and especially from the standpoint of conditions under which persons engaged in manufactures work, the best classification of establishments to bring out the feature of size is a classification according to the number of wage earners employed.

The next table shows, for 1909, such a classification for all industries combined and for 10 important industries individually, and gives not only the number of establishments falling in each group but also the average number of wage earners employed.

INDUSTRY.	Total.	ESTABLISHMENTS EMPLOYING—								
		No wage earners.	1 to 5 wage earners.	6 to 20 wage earners.	21 to 50 wage earners.	51 to 100 wage earners.	101 to 250 wage earners.	251 to 500 wage earners.	501 to 1,000 wage earners.	Over 1,000 wage earners.
NUMBER OF ESTABLISHMENTS.										
All industries.....	4,931	171	2,496	1,356	415	239	168	64	16	6
Carriages and wagons and materials.....	138	7	70	38	17	5	1	.....	.....	.....
Cotton goods, including cotton small wares.....	281	.....	1	12	40	71	97	41	10	3
Fertilizers.....	84	.....	11	11	4	7	1	.....	.....	.....
Flour-mill and gristmill products.....	249	22	214	13	.....	.....	.....	.....	.....	.....
Furniture and refrigerators.....	117	2	13	17	42	34	8	1	.....	.....
Hosiery and knit goods.....	62	.....	6	12	9	20	11	3	.....	.....
Leather, tanned, curried, and finished.....	39	3	25	3	1	5	2	.....	.....	.....
Lumber and timber products.....	2,544	39	1,332	880	181	61	20	10	2	1
Oil, cottonseed, and cake.....	53	.....	3	28	20	2	.....	.....	.....	.....
Tobacco manufactures.....	43	1	14	8	5	2	6	5	1	1
All other industries.....	1,371	97	807	325	90	32	13	4	2	.....
AVERAGE NUMBER OF WAGE EARNERS.										
All industries.....	121,473	.....	6,244	14,783	13,325	16,963	25,242	21,771	10,695	12,450
Carriages and wagons and materials.....	1,320	.....	150	412	557	408	102	.....	.....	.....
Cotton goods, including cotton small wares.....	47,231	.....	4	156	1,050	5,231	14,818	14,566	6,885	4,421
Fertilizers.....	933	.....	30	127	144	494	138	.....	.....	.....
Flour-mill and gristmill products.....	496	.....	360	127	.....	.....	.....	.....	.....	.....
Furniture and refrigerators.....	5,533	.....	41	220	1,437	2,545	1,039	251	.....	.....
Hosiery and knit goods.....	5,151	.....	23	176	316	1,377	1,332	840	907	.....
Leather, tanned, curried, and finished.....	832	.....	38	41	42	381	330	.....	.....	.....
Lumber and timber products.....	34,001	.....	3,044	9,516	5,633	4,113	4,363	3,127	1,198	2,417
Oil, cottonseed, and cake.....	1,165	.....	11	400	622	132	.....	.....	.....	.....
Tobacco manufactures.....	8,203	.....	27	93	183	107	1,034	1,750	629	4,380
All other industries.....	16,299	.....	1,007	3,515	2,741	2,175	1,916	1,237	1,576	1,232
PER CENT OF AVERAGE NUMBER OF WAGE EARNERS.										
All industries.....	100.0	.....	5.1	12.2	11.0	14.0	20.8	17.9	8.8	10.3
Carriages and wagons and materials.....	100.0	.....	9.2	25.3	34.2	25.0	6.3	.....	.....	.....
Cotton goods, including cotton small wares.....	100.0	.....	(1)	0.3	3.5	11.1	31.4	30.8	13.5	9.4
Fertilizers.....	100.0	.....	3.2	13.6	15.4	52.9	14.8	.....	.....	.....
Flour-mill and gristmill products.....	100.0	.....	74.4	25.0	.....	.....	.....	.....	.....	.....
Furniture and refrigerators.....	100.0	.....	0.7	4.0	26.0	46.0	18.8	4.5	.....	.....
Hosiery and knit goods.....	100.0	.....	0.4	3.4	6.1	26.7	29.4	16.3	17.6	.....
Leather, tanned, curried, and finished.....	100.0	.....	4.6	4.9	5.0	45.8	39.7	.....	.....	.....
Lumber and timber products.....	100.0	.....	10.7	28.0	16.6	12.1	12.8	9.2	3.5	7.1
Oil, cottonseed, and cake.....	100.0	.....	0.9	34.3	53.4	11.3	.....	.....	.....	.....
Tobacco manufactures.....	100.0	.....	0.3	1.1	2.2	1.3	12.6	21.3	7.7	53.4
All other industries.....	100.0	.....	11.7	21.6	16.8	13.3	11.7	7.6	9.7	7.6

¹ Less than one-tenth of 1 per cent.

The per cent distribution of the number of establishments is not shown in this table; of the 4,931 establishments reported for all industries, 81.6 per cent employed no wage earners at all or under 21 wage earners each. The most numerous single group consists of the 2,496 establishments employing from 1 to 5 wage earners, which comprised 50.6 per cent of the total, and the next of the 1,356 establishments employing from 6 to 20 wage earners, which formed 27.5 per cent of the total. The lumber industry furnished over one-half the number in these two groups. There were 171 establishments employing no wage earners; such establishments were most numerous in the flour-mill and gristmill and the lumber industries. Eighty-six establishments, of which 54 were cotton mills, employed over 250 wage earners each, while only 6 employed over 1,000, 3 of these being cotton mills. The smallest establishments were reported for the flour-mill and gristmill industry, 85.9 per cent of the establishments

in this industry employing from 1 to 5 wage earners, none having as many as 21.

Of the total number of wage earners, 25,242, or 20.8 per cent, were in establishments employing from 101 to 250 persons, while the next largest group consisted of the 21,771 wage earners in establishments employing from 251 to 500 persons, who represented 17.9 per cent of the total. In the cotton-goods industry, less than 1 per cent of the total number worked in mills employing under 21 persons, while 31.4 per cent were in mills employing from 101 to 250, and very nearly as many, 30.8 per cent, in those employing from 251 to 500. In the lumber industry the largest group, representing 28 per cent of the total, was made up of those employed in establishments having from 6 to 20 wage earners, while in tobacco manufactures a single establishment employed 4,380 wage earners, or 53.4 per cent of the total for the industry.

Expenses.—As stated in the Introduction, the census does not purport to furnish figures that can be used for determining the cost of manufacture and profits. Facts of interest can, however, be brought out concerning the relative importance of the different classes of expenses which make up the total.

The following table shows, for 1909, in percentages, the distribution of expenses among the classes indicated for all industries combined and for certain important industries separately. The figures on which the percentages are based appear in Table II.

INDUSTRY.	PER CENT OF TOTAL EXPENSES REPORTED.			
	Salaries.	Wages.	Materials.	Miscellaneous expenses.
All industries.....	3.7	18.4	65.4	12.5
Carriages and wagons and materials.....	5.3	21.3	66.9	6.5
Cotton goods, including cotton small wares.....	2.5	18.5	74.1	4.9
Fertilizers.....	4.5	7.3	77.6	10.6
Flour-mill and gristmill products.....	0.8	2.3	94.9	1.9
Furniture and refrigerators.....	5.7	23.0	63.8	7.4
Hosiery and knit goods.....	4.1	24.0	67.0	4.9
Leather, tanned, curried, and finished.....	2.2	6.1	87.6	4.1
Lumber and timber products.....	4.7	36.1	46.7	12.5
Oil, cottonseed, and cake.....	3.3	4.1	89.2	3.4
Tobacco manufactures.....	3.8	6.6	47.4	42.7
All other industries.....	6.7	24.8	59.7	8.8

This table shows that for all industries combined 65.4 per cent of the total expenses was incurred for materials, 22.1 per cent for services—that is, salaries and wages—and 12.5 per cent for other purposes. As would be expected, these proportions vary greatly in the different industries. The large proportion shown for miscellaneous expenses for tobacco manufactures is due to the inclusion of expenditures for internal revenue under this heading.

Engines and power.—The next table shows, for all industries combined, the number of engines or other motors, according to their character, employed in generating power (including electric motors operated by purchased current) and their total horsepower at the censuses of 1909, 1904, and 1899. It also shows separately the number and horsepower of electric motors, including those operated by current generated in the manufacturing establishments.

The table shows a considerable increase in almost every class of power used, the most interesting, perhaps, being that in rented electric power from 2,423 horsepower in 1904 to 60,044 horsepower in 1909. The proportion of the total primary power represented by this form of power advanced from 1.1 per cent in 1904 to 15.9 per cent in 1909. Steam engines, which in 1904 generated nearly six-sevenths of all the primary power reported, show an increase in horsepower for the five-year period 1904–1909 of 88,778, or 48.5 per cent. This gain represents more than one-half of the aggregate increase for all forms of primary

power. The increase in water power was also large, 47.7 per cent, a slightly lower rate than for steam power. Of the total primary power in 1909, 71.8 per cent was steam, 11.1 per cent water, and 15.9 per cent electric, leaving 1.2 per cent for all other kinds. The use of electric motors for the purpose of applying the power generated within the establishments is also shown to be rapidly becoming more common, the horsepower of such motors increasing from 1,839 in 1899 to 3,130 in 1904 and 25,958 in 1909.

POWER.	NUMBER OF ENGINES OR MOTORS.			HORSEPOWER.			PER CENT DISTRIBUTION OF HORSEPOWER.		
	1909	1904	1899 ¹	1909	1904	1899 ¹	1909	1904	1899
Primary power, total.....	7,373	3,504	3,261	378,556	216,622	154,467	100.0	100.0	100.0
Owned.....	5,386	3,504	3,261	317,201	213,697	152,957	83.8	98.6	99.0
Steam.....	4,500	2,951	2,605	271,944	183,166	122,778	71.8	84.6	79.5
Gas.....	316	104	67	2,356	2,102	388	0.6	1.0	0.3
Water wheels.....	561	441	589	41,619	23,353	29,241	11.0	13.1	18.9
Water motors.....	9	8	(²)	307	29	(²)	0.1	(²)	(²)
Other.....				1,035	47	550	0.3	(²)	0.4
Rented.....	1,987	(²)	(²)	61,295	2,925	1,510	16.2	1.4	1.0
Electric.....	1,987	(²)	(²)	60,044	2,423	894	15.9	1.1	0.6
Other.....				1,251	502	616	0.3	0.2	0.4
Electric motors	2,708	196	70	86,002	5,553	2,733	100.0	100.0	100.0
Run by current generated by establishment.....	721	196	70	25,958	3,130	1,830	30.2	56.4	67.3
Run by rented power.....	1,987	(²)	(²)	60,044	2,423	894	69.8	43.6	32.7

¹ Includes the neighborhood industries and hand trades, omitted in 1904 and 1909.
² Not reported. ³ Less than one-tenth of 1 per cent.

Fuel.—Closely related to the question of kind of power employed is that of the fuel used in generating this power, or otherwise as material in the manufacturing processes. The following table shows the quantity of each kind of fuel used in 1909 for all industries combined and for certain selected industries:

INDUSTRY.	An-thra-cite coal (tons).	Bitu-minous coal (tons).	Coke (tons).	Wood (cords).	Oil, In-cluding gaso-line (bar-rels).	Gas (1,000 feet).
All industries.....	12,321	892,484	58,174	268,769	17,865	9,881
Brick and tile.....	418	33,794	290	105,192	22	.....
Carriages and wagons and materials.....	722	3,685	75	2,458	334	.....
Cars and general shop construction and repairs by steam-rail-road companies.....		21,156	350	.....	.....	.....
Cotton goods, including cotton small wares.....	6,075	420,455	9,759	66,649	320	5,500
Fertilizers.....		19,220	.....	1,270	74	.....
Flour-mill and gristmill products.....	109	7,417	30	19,394	263	.....
Furniture and refrigerators.....		14,708	350	3,792	22	.....
Gas, illuminating and heating.....	35	16,460	41,124	.....	13,123	293
Hosiery and knit goods.....		24,596	.....	4,055	286	.....
Ice, manufactured.....	34	29,306	.....	12,858	15	.....
Leather, tanned, curried, and finished.....		14,472	.....	1,110	27	.....
Lumber and timber products.....	2,695	24,247	762	9,916	1,091	.....
Oil, cottonseed, and cake.....		40,785	.....	17,642	6	.....
Tobacco manufactures.....	1,107	32,080	.....	533	.....	220
All other industries.....	1,125	189,803	5,434	23,835	2,282	3,893

NOTE.—In addition, there were 14,314 tons of other varieties of fuel reported.

SUPPLEMENTARY DATA REGARDING IMPORTANT INDUSTRIES.

(With statistics for laundries and custom sawmills and gristmills.)

For certain industries the Census Bureau collects, by means of special schedules, details regarding the quantity and value of materials and products and the number and classes of machinery which do not appear on the general schedule. Certain data of this character for six important industries in North Carolina are here presented.

Textiles.—The progress of the textile industries is indicated by the increase in the number of spindles, looms, knitting machines, and other equipment. The following table shows the number of the more important machines used in these industries for 1909, 1904, and 1899:

MACHINE.	Cen- sus.	Total.	Cotton goods, including cotton small wares.	Hosiery and knit goods.	Woolen, worsted, and felt goods, and wool hats.	Silk and silk goods, including throw- sters.
Producing spindles	1909	2,972,261	2,908,383	24,944	13,434	25,500
	1904	1,914,259	1,880,950	13,264	8,779	11,266
	1899	1,151,052	1,133,432	2,860	5,080	9,680
Looms	1909	51,407	50,840		266	361
	1904	43,554	43,219		235	100
	1899	25,765	25,469		161	125
Knitting machines	1909	6,395		6,395		
	1904	3,043		3,043		
	1899	1,354		1,354		

The total number of producing spindles for the textile industry as a whole shows an increase from 1904 to 1909 of 1,058,002, or 55.3 per cent; of looms, an increase of 7,913, or 18.2 per cent; and of knitting machines, an increase of 3,352, or 110.2 per cent. In addition to the number of spindles given for the four industries shown in the table, there were 22,908 reported as used in the cordage and twine industry and 68 in the jute and jute-goods industry.

For the same five-year period the increase in the number of producing spindles in the cotton-goods industry was very marked, amounting to 1,027,433, or 54.6 per cent, while the number of looms increased 7,621, or 17.6 per cent. In the hosiery and knit-goods industry the increase in spindles was 11,680, or 88.1 per cent, and in knitting machines, 3,352, or 110.2 per cent. Separate data regarding materials and products are given for the two principal textile industries.

Cotton goods, including cotton small wares.—This industry is largely responsible for the remarkable progress which the state has made in manufactures. The proximity of the factories to the raw cotton and the consequent low cost of transportation of this material are conditions which have been particularly favorable for the development of the industry.

The next table shows the quantity and cost of the various materials used in the manufacture of cotton goods, and the quantity and value of the different

classes of products, as reported at the last three censuses.

MATERIAL OR PRODUCT.	1909	1904	1899
Materials used, total cost.....	\$48,687,572	\$33,025,340	\$17,386,624
Cotton:			
Domestic—			
Pounds.....	348,979,258	240,937,988	100,138,759
Cost.....	\$40,605,341	\$27,592,963	\$13,027,720
Foreign—			
Pounds.....	1,231,350	1,422,750	.....
Cost.....	\$231,543	\$220,790	.....
Cotton waste, purchased:			
Pounds.....	6,041,351	1,399,977	777,101
Cost.....	\$335,595	\$52,433	\$35,410
Cotton yarns, purchased:			
Pounds.....	9,738,724	10,656,597	10,284,488
Cost.....	\$1,789,555	\$1,920,368	\$1,268,058
Staroh.....	\$214,975	\$152,474	\$91,283
Chemicals and dyestuffs.....	\$713,030	\$543,394	\$478,238
Fuel and rent of power and heat.....	\$2,170,315	\$1,332,821	\$718,434
All other materials.....	\$2,627,218	\$1,201,097	\$1,167,461
Products, total value.....	\$72,680,885	\$47,254,054	\$28,372,768
Plain weaves, for printing or converting:			
Square yards.....	104,895,423	93,273,990	51,244,944
Value.....	\$4,938,695	\$4,125,583	\$1,943,568
Brown or bleached sheetings or shirtings:			
Square yards.....	104,707,838	105,598,908	83,085,411
Value.....	\$8,286,984	\$4,790,873	\$3,471,329
Twills and satens:			
Square yards.....	12,473,668	15,785,124	114,106
Value.....	\$814,767	\$815,868	\$5,789
Fancy woven fabrics:			
Square yards.....	38,513,680	22,434,783	7,770,704
Value.....	\$3,038,379	\$1,015,245	\$502,123
Ginghams:			
Square yards.....	111,004,426	79,056,081	79,531,131
Value.....	\$7,403,532	\$4,747,074	\$3,769,187
Drills:			
Square yards.....	18,940,774	5,270,874	2,821,238
Value.....	\$1,119,822	\$304,316	\$133,110
Ticks, denims, and stripes:			
Square yards.....	97,997,821	70,499,429	23,228,007
Value.....	\$9,801,350	\$5,835,804	\$2,521,849
Napped fabrics:			
Square yards.....	64,627,668	62,053,042	30,175,177
Value.....	\$5,389,195	\$3,749,475	\$1,555,920
Yarns, for sale:			
Pounds.....	142,213,450	95,481,949	86,970,599
Value.....	\$28,312,873	\$18,566,247	\$12,708,036
Cotton waste, for sale:			
Pounds.....	34,861,543	22,235,507	22,039,030
Value.....	\$536,652	\$687,968	\$335,571
All other products.....	\$2,378,130	\$1,985,021	\$1,395,718

The principal material used is domestic cotton, of which 348,979,258 pounds were consumed in 1909. A large part of this material came directly from the plantations of the state. The figures for 1909 show a decrease in the quantity of foreign cotton consumed and in the quantity of cotton yarn bought for consumption.

The largest single product continues to be cotton yarn, of which 142,213,450 pounds were produced for sale in 1909, 95,481,949 pounds in 1904, and 86,970,599 pounds in 1899—an increase for the 10 years of 63.5 per cent. It is interesting to note, however, that the proportion which the value of cotton yarn manufactured for sale represents of the total value of products shows a decrease at each census as the result of the more general practice of confining all of the processes of the manufacture of cotton goods to one establishment. The partly manufactured articles shown in the table represent a certain amount of duplication, because, although they are the products of one set of mills, to some extent they become the materials of other establishments within the industry. Ticks,

denims, and stripes constitute the most important product of the looms, with a value of \$9,801,356 in 1909 and an increase in quantity amounting to 321.9 per cent for the 10-year period.

Hosiery and knit goods.—This industry is largely an outgrowth of the general increase in the manufacture of cotton goods in the state. From 1899 to 1904 it showed an increase in value of products of 142.8 per cent and from 1904 to 1909 an increase of 107.4 per cent. The principal products are cotton hose and cotton half hose. Four establishments reported hosiery and knit goods as by-products to the value of \$287,061, which amount is not included in the totals shown for this industry.

The following statement shows the quantity and cost of the various materials used in the industry and the quantity and value of the different kinds of products, as reported for 1909, 1904, and 1899:

MATERIAL OR PRODUCT.	1909	1904	1899
Materials used, total cost	\$3,012,295	\$1,394,811	\$504,027
Cotton:			
Pounds.....	3,531,967	2,112,160	1,300,378
Cost.....	\$398,635	\$236,118	\$92,754
Cotton yarn, purchased:			
Pounds.....	9,527,471	5,115,069	2,136,604
Cost.....	\$1,858,760	\$916,779	\$333,058
Chemicals and dyestuffs.....	\$151,329	\$73,104	\$33,219
Fuel and rent of power.....	\$92,812	\$47,351	\$13,762
All other materials.....	\$510,769	\$121,459	\$31,234
Products, total value.....	\$5,151,692	\$2,483,827	\$1,023,150
Cotton hose:			
Dozen pairs.....	3,879,392	1,950,578	726,094
Value.....	\$2,877,922	\$1,408,060	\$446,262
Cotton half hose:			
Dozen pairs.....	1,026,748	977,454	343,337
Value.....	\$1,222,787	\$610,368	\$331,043
Cotton shirts and drawers:			
Dozens.....	409,635	174,549	112,875
Value.....	\$805,643	\$414,583	\$196,220
All other products.....	\$245,360	\$50,816	\$49,025

Oil, cottonseed, and cake.—Closely allied to the cotton industry is the manufacture of cottonseed oil and cake. North Carolina holds seventh place among the states in the value of its cottonseed-oil products. The increase shown in the total value of products indicates a rapid growth of this industry in the state.

The following table shows the quantity of cotton seed used for oil extraction and the quantities of the principal products for the census years 1909, 1904, and 1899:

MATERIAL OR PRODUCT.	QUANTITY.		
	1909	1904	1899
Cotton seed crushed..... tons..	214,582	148,097	107,660
Crude products manufactured:			
Oil..... gallons..	9,611,394	6,269,062	4,338,277
Meal and cake..... tons..	62,906	59,787	36,088
Hulls..... tons..	68,459	53,184	52,130
Linters..... pounds..	8,442,520	4,472,965	2,149,996

The statistics in this table cover the products of all establishments which crushed seed during the year, regardless of the extent to which they were engaged in other industries. Furthermore, the crude products

reported represent the total production derived from crushing cotton seed, whether sold as such or used as intermediate products in further processes of manufacture, such as refining of oil and the mixing of fertilizer and feed.

The average crush per mill has fallen off during the last decade from 5,383 tons in 1899 to 4,049 tons in 1909, although it has increased since 1904, when it was only 3,366 tons. The total quantity crushed increased from 107,660 tons in 1899 to 214,582 tons in 1909, or 99.3 per cent. Of the 53 cottonseed-oil mills reported in 1909 as crushing seed, 6 crushed less than 1,000 tons each during the census year; 9 crushed 1,000 but less than 2,000 tons; 26 crushed 2,000 but less than 5,000 tons; 9 crushed 5,000 but less than 10,000 tons; and 3 crushed 10,000 tons and over.

In 1909 the ratios which the several products bore to the total weight of the seed when received at the mill were: Crude oil, 16.8 per cent; meal and cake, 43.3 per cent; hulls, 31.9 per cent; and linters, 2 per cent. It will be observed that there has been an increase in the actual weights of all products, but that hulls now represent a much smaller proportion of the total than formerly.

Fertilizers.—This industry has grown more rapidly than most industries in the state; the percentage of increase in value of products from 1904 to 1909 was 103.9, and for the previous five years, 106.9. This growth is largely a result of the development of the cottonseed-oil mills of the state.

The following table shows in detail the quantity and value of the different kinds of products for the years 1909 and 1904:

PRODUCT.	1909	1904	1899
Total value.....	\$6,316,485	\$3,098,561	\$1,497,625
Superphosphates from minerals, bones, etc.:			
Tons.....	90,180	51,475	48,820
Value.....	\$1,140,790	\$617,600	\$397,397
Ammoniated fertilizers:			
Tons.....	32,879	81,353	3,400
Value.....	\$776,562	\$1,367,927	\$51,000
Complete fertilizers:			
Tons.....	142,592	42,292	53,523
Value.....	\$3,031,198	\$889,611	\$341,632
Other fertilizers:			
Tons.....	57,911	6,150	14,345
Value.....	\$997,436	\$89,163	\$197,304
All other products.....	\$370,499	\$234,260	\$10,292

The total quantity of all kinds of fertilizers shows large increases from 1904 to 1909. Complete fertilizers constituted the chief product, both as to quantity and value, in 1909, while the quantity and value of ammoniated fertilizers were the largest in 1904.

Considerable quantities of fertilizers were produced as by-products of establishments engaged in the manufacture of cottonseed oil. Twenty of such establishments reported these by-products, which were valued at \$856,716, representing 40,769 tons of fertilizer; these amounts are not included in the totals presented in the above table.

Lumber and timber products.—The following is a statement of the quantity of products, by classes, for the sawmill branch of the lumber industry for 1909 and 1899:

PRODUCT.	QUANTITY.	
	1909	1899
Lumber..... M feet b. m.	2,177,715	1,286,638
Lath..... thousands	70,724	48,782
Shingles..... thousands	280,942	212,467

Rough lumber shows an increase in quantity for the 10-year period amounting to 69.3 per cent, lath an increase of 45 per cent, and shingles an increase of 32.2 per cent. Over 80 per cent of the total cut in 1909 was softwood. Of the softwood, 1,575,186 M feet board measure, or about nine-tenths, was yellow pine; of the hardwood, 209,405 M feet, or about one-half, was oak.

Flour-mill and gristmill products.—A better idea of the flour-mill and gristmill industry in North Carolina may be obtained from a comparison of the quantities of the different products in 1909 and in 1904 than from a comparison of the values, either for the single products or for the whole industry. The following tabular statement gives the quantity and value of the different kinds of products in 1909 and 1904:

PRODUCT.	1909	1904
Total value.....	\$8,501,219	\$6,863,770
Wheat flour:		
White—		
Barrels.....	758,870	713,370
Value.....	\$4,702,881	\$3,816,342
Graham—		
Barrels.....	190	21
Value.....	\$1,075	\$106
Corn meal and corn flour:		
Barrels.....	596,872	648,481
Value.....	\$2,204,852	\$1,738,154
Rye flour:		
Barrels.....	1,155	1,072
Value.....	\$0,470	\$0,146
Buckwheat flour:		
Pounds.....	73,500	132,448
Value.....	\$2,310	\$3,072
Hominy and grits:		
Pounds.....	8,050,030	8,976,400
Value.....	\$143,658	\$134,718
Feed:		
Tons.....	11,814	10,561
Value.....	\$352,582	\$400,528
Offal:		
Tons.....	36,135	32,242
Value.....	\$918,443	\$720,106
All other products.....	\$18,948	\$35,600

White flour, the most important product, showed a substantial increase both in quantity and in value. There was a considerable decrease in the number of barrels of corn meal and corn flour produced, although a large increase in the total value was shown. Hominy

and grits show a decrease in quantity but a slight increase in value, and offal shows substantial increases in both respects.

Laundries.—Statistics for steam laundries are not included in the general tables or in the totals for manufacturing industries. There were 43 such establishments in North Carolina in 1909, 16 of which were in cities of over 10,000 population. The following tabular statement summarizes the statistics of the industry for the state:

Number of establishments.....	43
Persons engaged in the industry.....	924
Proprietors and firm members.....	43
Salaried employees.....	69
Wage earners (average number).....	812
Primary horsepower.....	1,000
Capital.....	\$424,642
Expenses.....	435,951
Services.....	265,038
Materials.....	107,865
Miscellaneous.....	63,048
Amount received for work done.....	559,949

Eighteen establishments were under individual ownership, 12 under firm ownership, and 13 under corporate ownership. Eleven establishments had receipts for the year's business of less than \$5,000; 21, \$5,000 but less than \$20,000; and 11, \$20,000 but less than \$100,000.

The number of wage earners employed each month and the per cent which this number represented of the greatest number employed in any month were as follows:

MONTH.	WAGE EARNERS.		MONTH.	WAGE EARNERS.	
	Number.	Per cent of maximum.		Number.	Per cent of maximum.
January.....	745	84.4	July.....	877	98.3
February.....	754	85.4	August.....	883	100.0
March.....	760	85.6	September.....	871	98.6
April.....	785	88.9	October.....	822	93.1
May.....	815	92.3	November.....	786	89.0
June.....	852	96.5	December.....	798	90.4

The different kinds of primary power, the number of engines, and the horsepower used in 1909 are shown in the following tabular statement:

KIND	Number of engines or motors.	Horsepower.
Primary power, total.....		1,000
Owned—Steam.....	40	887
Rented—Electric.....	15	133

The kind and amount of fuel used are shown in the following statement:

KIND.	Unit.	Quantity.
Bituminous coal.....	Tons.....	8,872
Wood.....	Cords.....	2,497
Oil.....	Barrels.....	101
Gas.....	1,000 feet.....	1,468
Other.....	Tons.....	967

Custom sawmills and gristmills.—Statistics for custom sawmills and gristmills are not included in the general tables or in the totals for manufacturing industries, but are presented in the next summary.

	Custom sawmills.	Custom gristmills.
Number of establishments.....	101	861
Persons engaged in the industry.....	811	1,547
Proprietors and firm members.....	300	1,207
Salaried employees.....	5	7
Wage earners (average number).....	506	333
Primary horsepower.....	3,641	18,444
Capital.....	\$214,394	\$1,535,027
Expenses.....	101,312	3,375,538
Services.....	83,272	97,008
Materials.....	5,821	13,245,181
Miscellaneous.....	12,219	33,279
Value of products.....	209,665	13,935,922

¹ Includes estimate of all grain ground. A similar estimate for value of lumber sawed by custom sawmills is impracticable.

MANUFACTURES—NORTH CAROLINA.

TABLE I.—COMPARATIVE SUMMARY FOR 1909, 1904, AND 1899.
THE STATE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES.

INDUSTRY.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
			Total.	Proprietors and firm members.	Salaried employes.	Wage earners (average number).							
STATE—All industries.....	1909	4,981	183,453	5,451	6,529	121,473	378,556	\$217,186	\$6,904	\$84,355	\$121,861	\$216,656	\$94,785
	1904	3,272	93,142	3,731	4,072	85,339	216,622	141,001	3,795	21,375	79,268	142,521	63,253
	1899	3,465	.....	.....	2,894	72,322	154,467	68,283	2,395	14,052	44,854	85,274	40,420
Agricultural implements.....	1909	22	109	22	15	132	356	306	21	50	90	262	172
	1904	13	128	13	8	107	206	117	9	31	51	127	76
	1899	9	112	14	7	91	178	78	4	20	41	99	58
Boots and shoes, including cut stock and findings.....	1909	7	211	6	27	178	242	413	17	46	242	408	166
	1904	7	109	11	9	89	70	86	6	25	117	186	69
	1899	3	44	1	3	40	53	38	2	14	53	73	20
Bread and other bakery products.....	1909	54	272	63	20	189	148	170	8	80	341	539	195
	1904	34	165	40	10	115	42	77	6	36	133	248	113
	1899	22	87	28	14	45	.....	33	2	13	58	107	49
Brick and tile.....	1909	159	1,762	197	105	1,400	6,759	1,455	83	370	368	1,174	806
	1904	111	1,271	146	46	1,070	3,222	651	25	247	167	696	529
	1899	157	1,660	216	36	1,408	2,493	445	11	209	147	641	494
Carriages and wagons and materials.....	1909	138	1,922	160	133	1,029	9,110	3,168	150	603	1,894	3,283	1,389
	1904	125	1,597	160	64	1,373	1,310	2,010	60	482	1,229	2,304	1,075
	1899	157	.....	.....	29	800	.....	861	19	236	521	1,055	534
Cars and general shop construction and repairs by steam-railroad companies.....	1909	12	2,640	.....	72	2,568	1,458	974	67	1,296	1,561	2,934	1,373
	1904	11	2,069	.....	96	1,973	988	858	79	1,023	1,334	2,444	1,110
	1899	12	1,188	.....	47	1,141	762	540	38	551	893	1,511	618
Clothing, men's, including shirts.....	1909	21	977	11	84	882	213	999	90	200	1,040	1,653	613
	1904	14	933	9	45	879	176	146	45	194	905	1,401	496
	1899	17	999	12	91	896	.....	502	73	154	650	1,059	499
Coffins, burial cases, and undertakers' goods....	1909	9	273	3	44	226	431	372	43	71	157	352	195
	1904	9	206	6	17	183	394	186	14	52	70	271	201
	1899	7	137	5	11	121	.....	177	7	30	39	119	80
Confectionery.....	1909	18	139	23	37	70	60	186	18	27	246	345	99
	1904	8	65	10	4	41	9	45	3	10	50	83	33
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Copper, tin, and sheet-iron products.....	1909	26	234	35	15	184	5	198	11	76	214	374	160
	1904	13	117	20	4	93	10	98	2	40	107	194	87
	1899	16	.....	.....	.....	62	.....	107	.....	25	49	101	52
Cordage and twine and jute and linen goods....	1909	7	542	2	49	491	1,755	1,260	50	104	559	824	265
	1904	6	505	2	20	543	1,007	886	21	101	815	1,036	221
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cotton goods, including cotton small wares.....	1909	281	48,525	42	1,252	47,231	104,699	96,093	1,610	12,131	48,688	72,680	23,992
	1904	212	37,292	33	903	36,356	92,215	57,413	973	7,504	33,025	47,254	14,229
	1899	177	30,973	41	659	30,273	56,986	33,012	587	5,127	17,387	28,373	10,966
Fertilizers.....	1909	34	1,117	22	102	933	3,132	7,680	242	393	4,183	6,316	2,133
	1904	27	1,019	33	78	908	2,653	3,008	75	282	2,218	3,099	881
	1899	18	494	16	51	427	1,292	2,819	66	109	1,044	1,498	454
Flour-mill and gristmill products.....	1909	240	971	384	91	496	11,578	2,643	65	180	7,287	8,501	1,214
	1904	234	967	370	72	519	10,359	1,990	47	160	5,986	6,894	878
	1899	217	.....	.....	56	481	9,149	1,519	30	130	3,846	4,703	587
Foundry and machine-shop products.....	1909	102	1,816	87	239	1,490	2,700	3,247	231	718	1,245	2,771	1,528
	1904	70	1,439	77	146	1,216	1,782	2,406	152	550	1,374	2,707	1,333
	1899	61	930	70	63	707	1,037	1,018	56	273	738	1,395	637
Furniture and refrigerators.....	1909	117	6,023	38	452	5,533	11,379	7,606	395	1,585	4,398	7,885	3,487
	1904	105	5,493	43	286	5,104	9,113	4,622	236	1,811	3,193	6,182	3,076
	1899	44	1,909	32	118	1,769	2,691	1,023	65	334	725	1,547	822
Gas, illuminating and heating.....	1909	14	201	.....	50	151	308	1,772	39	62	123	369	245
	1904	12	145	1	40	104	309	515	20	38	71	223	152
	1899	10	66	.....	19	47	68	683	15	14	37	130	83
Hosiery and knit goods.....	1909	62	5,361	34	176	5,151	4,024	5,164	185	1,080	3,012	5,152	2,149
	1904	40	3,084	38	102	2,944	2,148	2,081	125	617	1,395	2,484	1,089
	1899	24	1,574	15	64	1,405	1,736	675	46	255	504	1,023	519
Ice, manufactured.....	1909	45	426	10	92	318	5,386	1,514	80	127	180	659	479
	1904	32	317	13	69	235	2,991	860	53	83	97	418	321
	1899	23	211	13	37	161	2,275	523	32	53	66	228	162
Leather goods.....	1909	33	197	41	21	135	99	284	12	52	257	427	170
	1904	13	202	20	11	171	158	209	10	52	191	306	115
	1899	10	.....	.....	6	73	.....	102	1	18	87	161	64
Leather, tanned, curried, and finished.....	1909	39	938	49	57	332	2,672	6,753	107	290	4,156	5,415	1,259
	1904	34	616	45	37	534	1,521	2,559	61	149	2,038	2,662	624
	1899	75	488	94	28	366	989	1,300	29	105	1,129	1,562	378

¹ Excluding statistics for two establishments, to avoid disclosure of individual operations.
² Figures can not be shown without disclosing individual operations.
³ Excluding statistics for one establishment, to avoid disclosure of individual operations.

MANUFACTURES—NORTH CAROLINA.

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TABLE I.—COMPARATIVE SUMMARY FOR 1909, 1904, AND 1899—Continued.

THE STATE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES—Continued.

INDUSTRY AND CITY.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
			Total.	Proprietors and firm members.	Salaries employed.	Wage earners (average number).							
Expressed in thousands.													
STATE—Continued.													
Lumber and timber products.....	1909	2,544	38,636	3,349	1,286	34,001	115,542	\$29,675	\$1,264	\$9,707	\$12,534	\$33,525	\$20,991
	1904	1,364	19,560	1,836	741	16,983	65,026	12,008	621	5,119	6,612	19,489	12,877
	1899	1,416			607	19,972	59,181	10,060	413	4,245	7,341	17,442	10,101
Marble and stone work.....	1909	56	948	74	67	807	1,863	957	62	384	226	881	655
	1904	22	443	24	23	396	382	358	18	156	81	399	318
	1899	20			16	403		110	6	103	35	200	165
Mattresses and spring beds.....	1909	23	214	28	20	166	134	200	14	65	172	315	143
	1904	9	81	9	3	69	76	58	2	10	108	104	56
	1899	8			2	32		24	1	8	37	56	19
Oil, cottonseed, and cake.....	1909	53	1,446	3	278	1,165	9,641	4,432	265	326	7,090	8,504	1,414
	1904	43	1,027	3	167	867	7,935	3,118	123	233	2,956	3,749	793
	1899	21	651		87	564	2,908	1,842	68	133	2,161	2,677	516
Patent medicines and compounds and druggists' preparations.	1909	26	140	17	63	60	28	325	61	18	216	474	258
	1904	26	118	17	46	55	6	116	18	11	139	266	127
	1899	9			14	30		49	10	8	36	90	54
Printing and publishing.....	1909	322	2,059	307	376	1,376	1,119	2,180	306	661	645	2,497	1,852
	1904	258	1,475	267	237	971	582	1,274	164	404	382	1,653	1,271
	1899	203	1,195	219	157	819		793	96	286	244	1,039	795
Tobacco manufactures.....	1909	43	9,065	44	813	8,203	3,712	23,162	963	1,918	13,816	35,987	22,171
	1904	55	7,899	72	534	7,293	2,017	36,077	585	1,457	10,149	28,088	17,939
	1899	96	7,187	113	491	6,583	2,071	7,045	594	907	4,312	13,851	9,539
Turpentine and rosin.....	1909	79	249	103	7	139	19	159	4	28	483	674	191
	1904	87	262	110	4	148	4	116	3	39	578	743	165
	1899	174	630	205	25	400	29	217	5	71	818	1,056	238
Woolen, worsted, and felt goods, and wool hats.	1909	11	461	12	25	424	968	1,159	37	116	392	675	283
	1904	12	381	15	23	343	849	419	21	71	403	559	150
	1899	16	234	11	17	206	608	345	9	39	205	290	85
All other industries.....	1909	325	5,519	279	396	4,844	19,100	11,780	404	1,591	6,046	10,801	4,755
	1904	264	4,107	282	237	3,688	9,062	6,136	213	882	3,378	6,227	2,849
	1899	443			139	2,830		2,340	110	522	1,651	3,258	1,607

CITIES OF 10,000 OR MORE INHABITANTS—ALL INDUSTRIES COMBINED.

Asheville.....	1909	52	1,148	43	121	984	2,095	\$2,827	\$140	\$359	\$2,295	\$3,250	\$955
	1904	45	910	51	67	792		1,522	66	229	1,247	1,918	671
	1899	37			45	804		1,174	35	225	821	1,301	480
Charlotte.....	1909	108	4,705	54	452	4,199	12,384	9,451	522	1,557	6,532	10,460	3,928
	1904	73	2,537	51	252	2,234		4,850	239	693	2,369	4,850	1,981
	1899	57			175	2,787		3,803	167	621	2,604	4,187	1,583
Durham.....	1909	61	4,030	45	267	3,718	5,257	15,389	302	1,087	9,810	23,272	13,462
	1904												
	1899												
Greensboro.....	1909	61	1,132	45	135	952	1,545	1,696	131	338	1,106	2,032	926
	1904	63	1,261	60	103	1,098		1,548	71	317	978	1,744	766
	1899	43			64	677		885	47	152	508	925	417
Raleigh.....	1909	55	1,249	43	183	1,023	2,970	2,027	174	384	1,270	2,376	1,100
	1904	42	719	30	104	585		804	78	226	512	1,087	575
	1899	39			104	549		728	68	220	433	947	514
Wilmington.....	1909	64	1,386	44	129	1,213	4,580	2,022	123	470	1,903	3,005	1,102
	1904	53	1,704	44	156	1,564		1,837	130	605	1,715	2,904	1,189
	1899	50			92	1,553		1,758	74	476	1,392	2,283	891
Winston.....	1909	52	7,408	25	675	6,708	3,933	12,856	763	1,580	6,896	16,778	9,882
	1904	47	5,239	41	398	4,850		9,212	438	986	3,843	11,353	7,510
	1899	30			288	2,894		3,969	282	369	1,633	4,888	3,255

¹ Figures not available.

² Figures do not agree with those published in 1904, because it was necessary to revise the totals in order to include data only for those establishments located within the corporate limits of the city.

TABLE II.—DETAIL STATEMENT FOR

INDUSTRY.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.										WAGE EARNERS—NUMBER DEC. 15, OR NEAREST REPRESENTATIVE DAY.					Primary horsepower.
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks.		Wage earners.			Total.	16 and over.		Under 16.				
					Male.	Female.	Average number.	Number.			Male.	Female.	Male.	Female.			
								Maximum month.	Minimum month.								
1 All industries.....	4,931	133,453	5,451	3,486	2,513	530	121,478	De 128,754	Ja 117,007	(1)	(1)	(1)	(1)	(1)	378,556		
2 Agricultural implements.....	22	169	22	11	4	.....	132	Mh 150	Jy 108	137	135	.....	2	.....	356
3 Boots and shoes, including out stock and findings.	7	211	6	0	17	4	178	De* 200	Ap 137	200	140	38	20	5	242		
4 Boxes, fancy and paper.....	4	86	.....	5	1	.....	80	My* 80	De 75	75	25	39	3	8	46
5 Bread and other bakery products.....	54	272	63	6	7	7	189	De 109	Ja 182	199	100	8	25	.....	148	
6 Brick and tile.....	159	1,702	197	92	12	1	1,460	Au 2,281	Ja 406	2,448	2,265	.....	133	.....	6,766
7 Canning and preserving.....	21	212	18	6	.....	.....	188	Au 304	Ap 75	519	166	249	58	40	220
8 Carriages and wagons and materials..	138	1,922	160	75	44	14	1,629	De 1,750	Ja 1,536	1,756	1,671	8	74	3	9,110		
9 Cars and general shop construction and repairs by steam-railroad companies.	12	2,640	.....	9	61	2	2,568	De 2,745	Ja 2,392	2,745	2,784	0	5	.....	1,458
10 Cars and general shop construction and repairs by street-railroad companies.	3	25	.....	2	.....	.....	23	My 37	De 15	15	15	.....	.....	.....	.....
11 Clothing, men's, including shirts.....	21	977	11	31	50	3	882	De 987	Ja 820	994	152	810	8	24	213		
12 Coffins, burial cases, and undertakers' goods.	9	273	3	17	22	5	226	Oc 240	Mh* 210	233	216	13	4	.....	431	
13 Confectionery.....	18	139	23	5	23	9	70	No 112	Ja 60	102	58	38	5	1	66		
14 Cooperage and wooden goods, not elsewhere specified.	15	158	15	10	1	.....	132	Se 153	Ap 110	166	157	.....	9	.....	348
15 Copper, tin, and sheet-iron products..	26	234	35	11	2	2	184	Se 204	Ja 164	181	178	.....	3	.....	5
16 Cordage and twine and jute and linen goods.	7	542	2	17	30	2	491	My 506	Ja 475	523	224	178	75	46	1,755		
17 Cotton goods, including cotton small wares.	281	48,525	42	865	324	68	47,231	De 40,034	Ja 46,184	40,171	25,137	14,731	4,982	4,321	164,609		
18 Electrical machinery, apparatus, and supplies.	3	134	2	6	3	3	120	De 157	Ja 92	157	53	104	.....	.....	38
19 Fertilizers.....	34	1,117	22	58	97	7	933	Ap 1,604	Jy 494	890	896	.....	.....	.....	3,132
20 Flour-mill and gristmill products.....	249	971	384	49	34	8	496	De 533	My 463	554	543	3	8	.....	11,578	
21 Foundry and machine-shop products.	102	1,816	87	125	85	20	1,490	No 1,581	Fe 1,408	1,601	1,583	5	13	.....	2,700	
22 Furniture and refrigerators.....	117	6,023	38	255	153	44	5,533	Do 5,907	Jy 5,144	6,204	5,733	1	466	4	11,379		
23 Gas, illuminating and heating.....	14	201	.....	25	18	7	151	Jy 172	Se 138	150	150	.....	.....	.....	308
24 Hosiery and knit goods.....	62	5,361	34	111	60	15	5,151	De 5,292	Ja 4,980	5,411	1,210	2,691	562	939	4,024		
25 Ice, manufactured.....	45	426	16	61	29	2	318	Jy 474	Ja 188	346	340	.....	6	.....	5,386
26 Kaolin and ground earths.....	7	82	7	6	2	1	60	Mh 71	Fe* 64	77	76	.....	1	.....	693
27 Leather goods.....	33	197	41	11	8	2	135	Oc 141	Fe* 122	147	132	.....	15	.....	99
28 Leather, tanned, curried, and finished.	39	938	49	23	27	7	832	De 913	Mh 722	918	914	.....	4	.....	2,672
29 Lime.....	7	71	11	3	.....	.....	57	Au 70	Ja 41	64	63	.....	1	.....	163
30 Lumber and timber products.....	2,544	38,636	3,949	858	355	73	34,001	De 37,067	Je 31,962	41,793	41,159	55	530	10	115,542		
31 Marble and stone work.....	56	948	74	42	21	4	807	No 1,063	Ja 582	990	991	.....	8	.....	1,893
32 Mattresses and spring beds.....	23	214	28	8	8	4	166	De 179	Fe 140	179	127	31	20	1	124		
33 Mirrors.....	4	286	1	6	8	2	269	No 287	Ja 250	253	233	.....	.....	.....	222
34 Oil, cottonseed, and cake.....	53	1,446	3	126	140	12	1,165	No 1,797	Jy 332	1,723	1,087	1	35	.....	9,641	
35 Patent medicines and compounds and druggists' preparations.	26	140	17	17	37	9	60	Je 63	Mh* 58	64	29	34	1	.....	28	
36 Printing and publishing.....	322	2,059	307	152	133	80	1,376	No 1,433	Je 1,330	1,422	1,123	173	121	5	1,119		
37 Shipbuilding, including boat building.	10	66	12	1	.....	.....	53	Mh 63	De 44	47	47	.....	.....	.....	60
38 Show cases.....	5	39	3	4	.....	.....	30	Mh 34	Au* 28	31	31	.....	.....	.....	53
39 Tobacco manufactures.....	43	9,065	44	186	558	74	8,203	De 8,853	Se 7,918	9,117	4,929	2,626	908	654	3,712		
40 Turpentine and rosin.....	79	240	103	5	2	.....	139	Je 162	Ja 102	168	167	.....	1	.....	19
41 Wall plaster.....	4	31	3	5	2	.....	21	Ap* 22	Ja 17	22	22	.....	.....	.....	153
42 Wood distillation, not including turpentine and rosin.	5	67	.....	10	5	1	51	De 58	Jy* 44	57	57	.....	.....	.....	75
43 Woolen, worsted, and felt goods, and wool hats.	11	461	12	17	7	1	424	Au 461	Ap 392	481	253	193	13	22	968		
44 All other industries ¹	237	4,262	207	148	128	25	3,754	.....	.....	.....	.....	.....	.....	.....	16,989

¹ No figures given for reasons explained in the Introduction.

² Same number reported for one or more other months.

³ All other industries embrace—

Artificial stone.....	6	Brass and bronze products.....	1	Dairymen's, poultryers', and apiarists' supplies...	2
Artists' materials.....	1	Brooms.....	3	Dyeing and finishing textiles.....	4
Awnings, tents, and sails.....	1	Cars, street-railroad, not including operations of railroad companies.....	1	Dyestuffs and extracts.....	1
Bags, other than paper.....	5	.....	2	Flags, banners, regalia, society badges, and emblems.....	2
Belting and hose, leather.....	1	.....	1	Furnishing goods, men's.....	2
Bicycles, motorcycles, and parts.....	2	.....	1	Hand stamps and stencils and brands.....	1
Blackening and cleansing and polishing preparations.....	2	.....	1	House-furnishing goods, not elsewhere specified.....	1

THE STATE, BY INDUSTRIES: 1909.

Capital.	EXPENSES.										Value of products.	Value added by manufacture.
	Total.	Services.			Materials.		Miscellaneous.					
		Officials.	Clerks.	Wage earners.	Fuel and rent of power.	Other.	Rent of factory.	Taxes, including internal revenue.	Contract work.	Other.		
1 \$217,186,588	\$186,463,491	\$4,547,467	\$2,356,080	\$34,354,625	\$4,269,088	\$117,592,442	\$354,295	\$6,037,837	\$1,793,937	\$15,157,720	\$216,656 055	\$94,794,625
2 306,437	182,696	18,167	3,000	49,603	4,568	85,401	620	1,694	.....	19,553	261,819	171,850
3 413,492	340,125	5,942	11,177	46,455	1,641	239,940	372	2,386	.....	32,212	408,079	166,498
4 53,650	80,015	4,182	120	23,127	1,273	45,416	1,156	363	123	4,255	86,747	40,058
5 109,808	455,205	3,860	4,212	80,440	11,006	330,328	15,272	1,491	208	8,388	538,955	197,621
6 1,454,748	897,041	74,478	8,380	369,681	327,673	40,017	1,209	7,020	2,882	65,701	1,173,751	806,061
7 98,474	120,409	3,080	.....	24,610	2,872	72,098	740	2,057	5,600	8,452	143,691	68,721
8 3,188,231	2,830,604	100,358	49,358	602,527	27,384	1,866,122	10,521	22,990	4,298	147,046	3,282,634	1,389,128
9 974,045	2,938,820	11,216	56,025	1,296,172	51,602	1,606,525	350	6,613	1,414	703	2,933,776	1,372,649
10 9,200	31,817	2,100	.....	9,802	275	18,050	.....	40	.....	1,550	31,817	13,492
11 998,958	1,405,986	43,040	46,816	200,141	7,320	1,032,943	6,136	6,984	.....	62,600	1,663,076	612,813
12 371,713	302,120	18,702	24,286	71,483	5,893	151,581	33	2,697	.....	27,445	352,240	194,760
13 186,270	330,376	6,600	11,847	26,685	2,196	243,989	6,813	1,329	.....	30,917	344,848	98,663
14 72,638	115,364	5,190	760	32,603	1,431	70,800	544	578	.....	3,473	131,636	59,405
15 197,673	314,657	9,216	1,463	75,871	1,108	212,955	3,809	1,331	.....	8,904	373,635	159,572
16 1,259,685	748,888	24,859	24,948	103,778	8,201	551,228	4,485	2,146	.....	29,243	823,864	264,435
17 96,993,125	65,676,383	1,383,803	276,025	12,180,608	2,170,315	46,517,257	20,192	438,471	423,684	2,366,028	72,680,385	23,992,813
18 77,163	148,886	12,600	3,600	31,000	1,025	95,533	1,200	338	.....	3,590	149,591	53,033
19 7,679,857	5,389,466	117,534	124,799	392,752	69,658	4,113,545	6,802	69,953	7,307	487,116	6,316,485	2,133,282
20 2,642,885	7,680,149	38,000	26,509	179,983	93,931	7,192,957	2,426	17,283	175	128,885	8,501,219	1,214,331
21 8,246,716	2,359,578	150,290	81,141	718,209	57,823	1,187,579	13,681	19,180	233	131,442	2,771,287	1,525,885
22 7,606,147	6,889,014	278,470	116,614	1,585,235	54,988	4,342,822	3,053	39,485	3,926	404,421	7,884,679	3,456,869
23 1,771,505	273,260	24,188	15,181	62,324	99,055	24,436	.....	9,808	.....	38,268	369,375	245,884
24 5,164,117	4,496,511	136,849	47,874	1,080,410	92,812	2,919,483	4,915	21,625	3,117	189,426	5,151,692	2,139,397
25 1,614,394	432,496	60,445	19,704	127,046	121,572	58,242	12,925	16,906	.....	65,652	659,377	479,559
26 141,800	62,696	3,780	1,916	27,955	8,995	14,410	.....	565	150	4,925	47,600	24,195
27 284,434	344,940	5,585	6,837	51,840	2,766	253,797	8,376	2,141	.....	13,598	420,630	170,067
28 6,753,436	4,746,258	72,220	34,385	289,502	44,428	4,111,723	60	24,185	.....	169,755	5,415,495	1,259,344
29 36,031	35,836	2,100	.....	17,922	7,636	4,646	1,200	420	400	1,422	44,148	31,896
30 29,074,900	26,856,858	967,829	295,982	9,707,194	121,697	12,411,900	38,260	176,016	967,848	2,170,132	33,524,653	20,991,056
31 956,731	719,682	44,195	18,292	384,277	20,901	205,252	4,357	4,544	1,408	36,456	881,343	655,190
32 200,420	268,030	7,800	5,840	65,469	2,497	169,118	1,823	983	.....	14,495	315,154	143,539
33 274,790	795,850	9,900	8,020	95,181	6,833	668,444	600	934	.....	5,933	785,361	110,069
34 4,432,010	7,952,231	153,993	111,106	325,850	184,247	6,905,683	2,564	26,274	60	242,424	8,504,477	1,414,547
35 324,674	395,224	17,993	42,837	17,621	1,041	215,137	2,630	2,542	.....	96,423	473,926	257,748
36 2,179,530	1,950,059	169,625	136,478	661,015	43,652	601,077	41,018	16,720	77,785	202,689	2,407,493	1,852,764
37 73,693	79,659	624	.....	25,058	100	47,186	548	329	4,200	1,614	100,254	52,668
38 25,417	57,479	2,610	320	16,104	680	34,723	414	198	500	1,930	62,054	29,651
39 23,161,830	29,163,923	343,693	619,553	1,918,033	122,953	13,693,115	109,809	5,020,412	3,509	7,332,596	35,956,639	22,170,571
40 158,716	534,127	2,360	1,380	28,242	4,018	478,918	25	767	.....	18,427	673,954	191,018
41 73,409	76,460	6,540	1,650	7,069	2,799	55,219	.....	259	.....	2,924	82,548	24,530
42 204,837	87,553	14,140	4,710	15,598	7,256	26,051	.....	513	.....	19,685	104,241	70,334
43 1,159,005	593,465	31,110	5,700	116,331	14,431	377,538	50	6,265	.....	42,040	675,265	283,296
44 10,644,088	7,258,295	207,366	107,240	1,263,699	456,531	4,395,654	25,302	60,807	285,020	456,676	9,030,172	4,177,987

* All other industries embrace—Continued.

Liquors, vinous.....	4	Paint and varnish.....	4	Silk and silk goods, including throwsters.....	4
Looking-glass and picture frames.....	1	Paper and wood pulp.....	3	Slaughtering and meat packing.....	2
Millinery and lace goods.....	2	Peanuts, grading, roasting, cleaning, and shelling.....	2	Steam packing.....	1
Mineral and soda waters.....	113	Pottery, terra-cotta, and fire-clay products.....	17	Upholstering materials.....	2
Mucilage and paste.....	1	Pumps, not including steam pumps.....	1	Vinegar and cider.....	1
Musical instruments, pianos and organs and materials.....	1	Rice, cleaning and polishing.....	2	Window shades and fixtures.....	1
Optical goods.....	2	Roofing materials.....	2	Wood, turned and carved.....	27
		Shoddy.....	1		

MANUFACTURES—NORTH CAROLINA.

TABLE III.—DETAIL STATEMENT FOR CITIES OF 50,000 INHABITANTS OR MORE, BY INDUSTRIES,
CITIES OF 10,000 TO 50,000 INHABITANTS—ALL INDUSTRIES COMBINED.

CITY.	Number of establishments	PERSONS ENGAGED IN INDUSTRY.									WAGE EARNERS—NUMBER DEC. 15, OR NEAREST REPRESENTATIVE DAY.					Primary horse-power.
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks.		Wage earners (average number).			Total.	10 and over.		Under 16.			
					Male.	Female.	Total.	16 and over.			Under 16.	Male.	Female.	Male.	Female.	
								Male.	Female.							
1 ASHEVILLE	52	1,148	43	47	52	22	984	718	217	49	1,018	743	224	36	15	2,005
2 CHARLOTTE	108	4,705	54	179	225	48	4,199	2,930	950	313	4,276	2,983	974	198	121	12,384
3 DURHAM	61	4,030	45	91	129	47	3,718	1,770	1,080	868	3,940	1,876	1,144	521	399	5,237
4 GREENSBORO	61	1,132	45	67	52	16	952	602	271	79	1,068	675	304	45	44	1,545
5 RALEIGH	55	1,249	43	67	65	51	1,023	655	273	65	1,092	699	292	59	42	2,970
6 WILMINGTON	64	1,386	44	57	62	10	1,213	1,096	77	40	1,474	1,332	94	21	27	4,580
7 WINSTON	52	7,408	25	158	472	45	6,708	3,739	1,943	1,026	7,486	4,173	2,168	606	539	8,633

MANUFACTURES—NORTH CAROLINA.

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AND TOTALS FOR ALL INDUSTRIES IN CITIES OF 10,000 BUT LESS THAN 50,000 INHABITANTS: 1909.

CITIES OF 10,000 TO 50,000 INHABITANTS—ALL INDUSTRIES COMBINED.

	Capital.	EXPENSES.									Value of products.	Value added by manufacture.	
		Total.	Services.			Materials.		Miscellaneous.					
			Officials.	Clerks.	Wage earners.	Fuel and rent of power.	Other.	Rent of factory.	Taxes, including internal revenue.	Contract work.			Other.
1	\$2,827,265	\$2,966,173	\$83,648	\$56,585	\$358,931	\$53,209	\$2,241,559	\$13,796	\$16,717	\$5,722	\$136,006	\$3,249,684	\$954,016
2	9,451,463	9,069,850	303,300	218,466	1,557,203	220,900	6,310,599	27,536	59,913	46,995	324,872	10,459,684	3,923,125
3	15,388,914	18,630,427	151,127	150,994	1,080,840	115,585	9,694,134	113,012	2,023,745	206,110	5,088,850	23,271,525	13,461,806
4	1,096,232	1,767,591	74,093	66,082	337,971	41,315	1,065,045	10,795	47,868	683	133,159	2,031,606	925,246
5	2,027,385	2,125,380	102,522	71,535	383,866	63,417	1,212,242	17,996	17,104	43,739	212,959	2,375,872	1,100,213
6	2,021,916	2,716,779	70,923	51,882	470,419	51,650	1,851,309	26,844	16,230	720	182,796	3,004,717	1,101,752
7	12,856,283	14,146,126	285,292	478,109	1,580,258	101,461	6,794,324	8,020	2,605,899	600	2,292,163	16,778,072	9,882,287

NORTH DAKOTA.

INDUSTRIES IN GENERAL.

General character of the state.—North Dakota, with a gross area of 70,837 square miles, of which 654 represent water surface, ranks sixteenth in size among the states and territories of continental United States. Its population in 1910 was 577,056, as compared with 319,146 in 1900 and 190,983 in 1890. It ranked thirty-seventh among the 49 states and territories as regards population in 1910 and fortieth in 1900.

In 1910 only 11 per cent of the total population of the state resided in incorporated cities having a population of 2,500 or over, as compared with 7.3 per cent in 1900. Only two cities, Fargo and Grand Forks, have a population of more than 10,000.

The density of population in 1910 was 8.2 persons per square mile, as compared with 4.5 in 1900.

Several important railway systems traverse the state from east to west, and these lines, together with the connecting railways, provide excellent transportation facilities.

Importance and growth of manufactures.—Although North Dakota is primarily an agricultural community, the total value of manufactured products of the state has increased steadily at each census since 1899. Prior to that year manufacturing in the state was limited almost entirely to the so-called neighborhood, hand, and building industries; and, with the exception of the flour-mill and gristmill industry, practically the entire product was made for local consumption. The latter statement continued to be true to a great extent in 1909. In that year North Dakota ranked forty-fifth among the states of the Union in value of manufactures. The gross value of products per capita of the total population of the state increased from \$20 in 1899 to \$33 in 1909.

The following table gives the most important figures relative to all classes of manufactures combined for the state as returned at the censuses of 1909, 1904, and 1899, together with the percentages of increase from census to census:

	NUMBER OR AMOUNT.			PER CENT OF INCREASE.	
	1909	1904	1899	1904-1909	1899-1904
Number of establishments.....	752	507	337	48.3	50.4
Persons engaged in manufactures.....	4,148	2,545	(1)	63.0	.....
Proprietors and firm members.....	723	494	(1)	46.4	.....
Salaried employees.....	636	296	152	114.9	94.7
Wage earners (average number).....	2,789	1,755	1,358	58.9	29.2
Primary horsepower.....	13,196	9,873	7,351	33.7	34.3
Capital.....	\$11,585,000	\$5,704,000	\$3,512,000	103.1	62.4
Expenses.....	17,290,000	8,895,000	5,155,000	94.4	72.6
Services.....	2,416,000	1,289,000	801,000	87.4	60.9
Salaries.....	629,000	258,000	130,000	143.8	98.5
Wages.....	1,787,000	1,031,000	671,000	73.3	53.7
Materials.....	13,674,000	7,096,000	4,151,000	92.7	70.9
Miscellaneous.....	1,200,000	510,000	203,000	135.3	151.2
Value of products.....	19,138,000	10,218,000	6,260,000	87.3	63.2
Value added by manufacture (value of products less cost of materials).....	5,464,000	3,122,000	2,109,000	75.0	48.0

(1) Figures not available.

In 1909 the state of North Dakota had 752 manufacturing establishments, which gave employment to an average of 4,148 persons during the year and paid out \$2,416,000 in salaries and wages. Of the persons employed, 2,789 were reported as wage earners. These establishments turned out products to the value of \$19,138,000, to produce which materials costing \$13,674,000 were consumed. The value added by manufacture was thus \$5,464,000, which figure, as explained in the Introduction, best represents the net wealth created by manufacturing operations during the year.

In general, this table brings out the fact that the marked development in the manufacturing industries of North Dakota which took place from 1899 to 1904 continued even to a greater degree in the following five years. From 1899 to 1904 the value of products increased 63.2 per cent, and from 1904 to 1909, 87.3 per cent. As pointed out in the Introduction, it would be improper to infer that manufactures increased in volume to the full extent indicated by these figures regarding values, since the increase shown is certainly due, in part, to the increase that has taken place in the price of commodities.

It is a matter of interest to note that the percentages of increase shown for salaries and wages show a greater proportionate increase than those for numbers of sala-

ried employees and wage earners. The relative importance and growth of the leading manufacturing industries of the state are shown in the following table:

INDUSTRY.	Number of establishments.	WAGE EARNERS.		VALUE OF PRODUCTS.		VALUE ADDED BY MANUFACTURE.		PER CENT OF INCREASE. ¹			
		Average number.	Per cent distribution.	Amount.	Per cent distribution.	Amount.	Per cent distribution.	Value of products.		Value added by manufacture.	
								1904-1909	1899-1904	1904-1909	1899-1904
All industries.....	752	2,789	100.0	\$19,138,000	100.0	\$5,464,000	100.0	87.3	63.2	75.0	48.0
Flour-mill and gristmill products.....	84	435	15.6	11,685,000	61.1	1,030,000	29.8	80.8	67.9	68.0	33.7
Printing and publishing.....	330	788	28.3	1,910,000	10.0	1,470,000	26.9	72.1	54.2	68.4	58.7
Butter, cheese, and condensed milk.....	68	62	2.2	1,029,000	5.4	138,000	2.5	83.1	360.7	64.3	223.1
Leather goods.....	19	98	3.5	638,000	3.6	221,000	4.0				
Cars and general shop construction and repairs by steam-railroad companies.....	5	463	16.6	680,000	3.6	380,000	7.0	236.6	43.3	214.0	59.2
Bread and other bakery products.....	67	146	5.2	601,000	3.1	255,000	4.7	98.2	284.0	100.8	188.6
Brick and tile.....	13	188	6.7	287,000	1.5	214,000	3.9	63.8	28.8	57.4	33.3
Gas, illuminating and heating.....	6	28	1.0	199,000	1.0	121,000	2.2	95.1		77.9	
Tobacco manufactures.....	28	34	1.2	98,000	0.5	61,000	1.1	28.9	10.1	29.8	9.3
All other industries.....	132	547	19.6	1,966,000	10.3	974,000	17.8				

¹ Percentages are based on figures in Table I. Where the percentages are omitted, comparable figures can not be given.

It should be borne in mind, in considering this table, that the value of products in some of the industries involves a certain amount of duplication due to the use of the product of one establishment in the industry as material for another establishment.

The most important industries presented in this table, in which they are arranged in the order of the value of products, call for brief consideration.

Flour-mill and gristmill products.—North Dakota is one of the leading wheat-growing states; and, measured by the value of products, milling is the state's most important manufacturing industry. The value of products for this industry in 1909 formed 61.1 per cent of the total value of all manufactured products for the state. From 1904 to 1909 the value of products in the industry increased 80.8 per cent, while the value added by manufacture increased 63 per cent.

Printing and publishing.—In 1909 over one-fourth, 28.3 per cent, of the total average number of wage earners of all manufacturing industries in the state were employed in this industry. The establishments were principally small newspaper and job printing offices.

Butter, cheese, and condensed milk.—Butter was reported almost exclusively as the product of this industry at the last two censuses. Reports were received from four cheese factories in 1904 and from only one in 1909. No condensed-milk establishment was reported at either census. The growth of the butter and cheese industry from 1904 to 1909 was marked; the value of products increased 83.1 per cent and the value added by manufacture 64.3 per cent; the growth was more pronounced from 1899 to 1904, when the value of products increased 360.7 per cent and the value added by manufacture 223.1 per cent.

Leather goods.—This industry, which was represented by 19 establishments, embraces the manufac-

ture of saddlery, harness, trunks, and valises. There were five establishments in the industry in 1904, but the statistics for these can not be presented separately without disclosing the operations of individual establishments.

Measured by value added by manufacture, the industries in the preceding table show considerable change in their order from that when measured by value of products. The butter and cheese industry, which is third in value of products, is seventh in value added by manufacture; the leather-goods industry, which is fourth in value of products, is fifth in value added by manufacture; while the industries, cars and general shop construction and repairs by steam-railroad companies and bread and other bakery products, which are fifth and sixth, respectively, in value of products, are third and fourth, respectively, in value added by manufacture. This table also shows the percentages of increase for these leading industries in respect to value of products and value added by manufacture where the statistics are comparable. The railroad repair shop industry showed a greater rate of increase from 1904 to 1909 in value of products and value added by manufacture than any of the other specified industries, namely, 236.6 per cent and 214 per cent, respectively.

In the rate of increases, both in value of products and value added by manufacture, from 1899 to 1904, as compared with those for 1904 to 1909, some striking differences may be noted, especially in the case of the creameries, the bakeries, and the steam-railroad repair shops.

In addition to the nine industries presented separately, there are six industries which had a value of products in 1909 in excess of \$100,000. One of these, the mineral and soda-water industry, is not shown, because the

returns do not properly present the true condition of the industry, for the reason that bottling is also done largely in connection with other industries. The artificial-stone, confectionery, copper, tin, and sheet-iron, foundry and machine-shop, and lumber and timber industries are not shown separately, because in some cases the operations of individual establishments would thus be disclosed; in others, because the data for prior censuses are not available, and in still others, because there has been a change in classification. The 1909 statistics, however, for four of these industries are presented in Table II.

Persons engaged in manufacturing industries.—The following table shows, for 1909, the distribution of the number of persons engaged in manufactures, the average number of wage earners being distributed by sex and age. It should be borne in mind, however, that the sex and age classification of the average number of wage earners in this and other tables is an estimate obtained by the method described in the Introduction.

CLASS.	PERSONS ENGAGED IN MANUFACTURES.		
	Total.	Male.	Female.
All classes.....	4,148	3,777	371
Proprietors and officials.....	965	936	29
Proprietors and firm members.....	723	697	26
Salaried officers of corporations.....	64	64	.....
Superintendents and managers.....	178	175	3
Clerks.....	394	303	91
Wage earners (average number).....	2,789	2,538	251
16 years of age and over.....	2,732	2,489	243
Under 16 years of age.....	57	49	8

The average number of persons engaged in manufactures during 1909 was 4,148, of whom 2,789 were wage earners. Of the remainder, 965 were proprietors and officials and 394 were clerks. Corresponding figures for individual industries will be found in Table II.

The table following shows for 1909 the percentage of proprietors and officials, clerks, and wage earners, respectively, among the total number of persons employed in manufactures. It covers all industries combined and seven important industries individually.

Of the total number of persons engaged in all manufacturing industries, 23.3 per cent were proprietors and officials, 9.5 per cent clerks, and 67.2 per cent wage earners. In the bakery, butter, and printing and publishing industries the majority of the establishments are small and to a large extent the work is done by the proprietors or their immediate representatives, so that the proportion of persons falling in the class of proprietors and officials is higher than for such an industry as railroad repair shops, which are operated by corporations, for which no proprietors are reported, and whose general officials

are not, as a rule, assigned to the supervision of this particular branch of the work.

INDUSTRY.	PERSONS ENGAGED IN MANUFACTURES.			
	Total number.	Per cent of total.		
		Proprietors and officials.	Clerks.	Wage earners (average number).
All industries.....	4,148	23.3	9.5	67.2
Bread and other bakery products.....	242	31.8	7.9	60.3
Brick and tile.....	214	11.2	0.9	87.8
Butter, cheese, and condensed milk.....	106	39.6	1.9	58.5
Cars and general shop construction and repairs by steam-railroad companies.....	494	3.0	3.2	93.7
Flour-mill and gristmill products.....	710	21.7	17.0	61.3
Leather goods.....	157	20.4	17.2	62.4
Printing and publishing.....	1,294	30.3	8.8	60.9
All other industries.....	931	24.6	10.0	65.4

The following table shows, in percentages, for 1909, for all industries combined the distribution of the average number of wage earners by age periods, and for those 16 years of age and over by sex, calculated in the manner described in the Introduction. It also shows for some of the important industries separately a similar distribution of wage earners as reported for December 15, or the nearest representative day. As a means of judging the importance of the several industries the average total number employed for the year is also given in each case.

INDUSTRY	WAGE EARNERS.			
	Average number. ¹	Per cent of total.		
		16 years of age and over.		Under 16 years of age.
		Male.	Female.	
All industries.....	2,789	89.3	8.7	2.0
Bread and other bakery products.....	146	77.4	19.9	2.7
Brick and tile.....	188	97.3	.....	2.7
Butter, cheese, and condensed milk.....	62	98.4	.....	1.6
Cars and general shop construction and repairs by steam-railroad companies.....	463	100.0	.....	.....
Flour-mill and gristmill products.....	435	99.8	0.2	.....
Leather goods.....	98	99.0	.....	1.0
Printing and publishing.....	788	77.4	17.3	5.3
All other industries.....	809	87.0	12.5	0.5

¹ For method of estimating the distribution, by sex and age periods, of the average number in all industries combined, see Introduction.

For all industries combined, 89.3 per cent of the average number of wage earners were males 16 years of age and over; 8.7 per cent, females 16 years of age and over; and 2 per cent, persons under the age of 16.

The larger part of the total number of female wage earners is made up of those employed in the printing and publishing industry. Among the industries not shown in the table, the confectionery industry also employed a large number of women. These two industries combined reported four-fifths of all female employees 16 years of age and over. The printing and publishing industry also includes the larger part of the

small total number of wage earners under 16 years of age.

In order to compare the distribution of persons engaged in manufactures in 1909 with that shown at the census of 1904, it is necessary to use the classification employed at the earlier census. (See Introduction.) The following table makes this comparison according to occupational status:

CLASS.	PERSONS ENGAGED IN MANUFACTURES.				
	1909		1904		Per cent of increase, 1904-1909.
	Number.	Per cent distribution.	Number.	Per cent distribution.	
Total.....	4,148	100.0	2,545	100.0	63.0
Proprietors and firm members...	723	17.4	494	19.4	46.4
Salaried employees.....	936	15.3	296	11.6	114.9
Wage earners (average number)...	2,789	67.2	1,755	69.0	58.9

Comparable figures are not obtainable for 1899. The table shows a greater percentage of increase in the salaried employees than in the other two classes.

The following table shows the average number of wage earners, distributed according to age periods, and in the case of those 16 years of age and over according to sex, for 1909, 1904, and 1899. The averages for 1909 are estimated on the basis of the actual number reported for a single representative day. (See Introduction.)

CLASS.	AVERAGE NUMBER OF WAGE EARNERS.					
	1909		1904		1899	
	Number.	Per cent distribution.	Number.	Per cent distribution.	Number.	Per cent distribution.
Total.....	2,789	100.0	1,755	100.0	1,358	100.0
10 years of age and over	2,732	98.0	1,720	98.0	1,324	97.5
Male.....	2,489	89.2	1,521	86.7	1,232	90.7
Female.....	243	8.7	199	11.3	92	6.8
Under 16 years of age..	57	2.0	35	2.0	34	2.5

The present proportion of children is slightly less than it was 10 years ago; and while in 1909 the proportion of women employed was greater than in 1899, it was less than in 1904. In 1909 males 16 years of age and over formed 89.2 per cent of all wage earners, as compared with 86.7 per cent in 1904 and 90.7 per cent in 1899.

Wage earners employed, by months.—The following table gives the number of wage earners employed on the 15th of each month during the year 1909 for all industries combined, for the brick and tile industry, and for all other industries combined; it also gives the percentage which the number reported for each month is of the greatest number reported for any

month. In Table II, page 930, is shown, for practically all of the important industries in the state, the largest number and also the smallest number of wage earners reported for any month. The figures are for the 15th day, or the nearest representative day, of the month.

MONTH.	WAGE EARNERS.					
	All industries.		Brick and tile.		All other industries.	
	Number.	Per cent of maximum.	Number.	Per cent of maximum.	Number.	Per cent of maximum.
January.....	2,356	77.2	40	10.4	2,316	80.3
February.....	2,389	78.2	49	12.7	2,337	81.1
March.....	2,443	80.0	82	21.3	2,361	81.9
April.....	2,680	84.5	134	34.8	2,446	84.8
May.....	2,816	92.3	256	66.5	2,560	88.8
June.....	3,041	99.0	385	100.0	2,656	92.1
July.....	3,004	98.4	386	100.0	2,619	90.4
August.....	2,880	94.4	248	64.4	2,632	91.3
September.....	2,927	95.9	196	50.9	2,731	94.7
October.....	3,033	99.4	194	50.4	2,839	98.5
November.....	3,052	100.0	169	43.9	2,883	100.0
December.....	2,950	90.7	117	30.4	2,833	98.3

For all industries combined the number of wage earners employed was lowest in January and highest in November. Considerable irregularity in employment is shown, however, for the several months, which is due somewhat to the fluctuation in the number of wage earners employed in the brick and tile industry. During the first six months of the year there was a steady increase in the number of wage earners in this industry, from 40 in January to 385 in June and July. From this time the number fell continuously until in December it was 117. Outside of this industry the number of wage earners employed underwent no great change, the number increasing steadily from January to November, with the exception of July and August, when slightly smaller numbers were employed than in June.

In the table following wage earners have been classified according to the hours of labor prevailing in the establishments in which they are employed. In making this classification the average number of wage earners employed during the year is used, and the number employed in each establishment is classified as a total according to the hours prevailing in that establishment, even though some few employees work a greater or less number of hours.

Almost one-half of the total number of wage earners employed in the manufacturing industries of North Dakota were in establishments where the prevailing hours of labor were 60 per week or 10 per day; 3.9 per cent were reported in establishments where more than 60 hours per week prevail and 49.4 per cent in those where less than 60 hours per week prevail.

INDUSTRY.	AVERAGE NUMBER OF WAGE EARNERS IN ESTABLISHMENTS GROUPED ACCORDING TO PREVAILING HOURS OF WORK PER WEEK.								
	Total.	48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72.	Over 72.
All industries.....	2,789	423	186	542	227	1,803	59	30	19
Bread and other bakery products.....	140	1		2	33	103	2		
Brick and tile.....	183			4		184			
Butter, cheese, and condensed milk.....	62	7		3		50		2	
Cars and general shop construction and repairs by steam-railroad companies.....	403		124	216		123			
Flour-mill and gristmill products.....	435	3	1		3	348	52	28	
Leather goods.....	93			2	67	29			
Printing and publishing.....	738	377	46	268	53	39			
All other industries.....	609	35	15	47	60	422	5		19

Location of establishments.—Fargo with 14,331 and Grand Forks with 12,478 inhabitants are the only cities which had a population of over 10,000 in 1910. Prior to this census there were no cities in the state having over 10,000 inhabitants. The 1909 totals given in Table I (p. 929) show that the two cities combined, although having slightly less than one-twentieth of the population of the state, reported nearly one-third of the total number of wage earners and almost one-fourth of the value of the manufactured products. In the former city the manufacture of saddlery and harness and the printing and publishing industry predominate. In Grand Forks the flour-mill and gristmill and printing and publishing industries are among the most important. Comparable data for earlier censuses are available for the city of Fargo

only. The total value of manufactured products in this city, which showed a decrease from 1899 to 1904, increased 113.4 per cent from 1904 to 1909.

Character of ownership.—The table that follows has for its purpose the presentation of conditions in respect to the character of ownership, or legal organization, of manufacturing enterprises. For all industries combined comparative figures are given covering the censuses of 1909 and 1904. Comparative data for 1899 are not available. Figures for 1909 only are presented for several important industries individually.

In order to avoid disclosing the operations of individual concerns reporting, it is necessary to omit several important industries from this table and the one following.

INDUSTRY AND CHARACTER OF OWNERSHIP.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.	INDUSTRY AND CHARACTER OF OWNERSHIP.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.
ALL INDUSTRIES:									
1909.....	752	2,789	\$19,137,508	\$5,463,916	Butter, cheese, and condensed milk, 1909.....	68	62	\$1,023,135	\$137,806
1904.....	507	1,755	10,217,914	3,121,323	Individual.....	14	10	217,593	31,399
Individual:					Firm.....	9	7	132,198	19,044
1909.....	472	775	3,555,937	1,561,752	Corporation.....	16	13	297,249	33,390
1904.....	205	505	2,546,425	1,045,945	Other.....	29	27	412,125	53,403
Firm:					Per cent of total.....	100.0	100.0	100.0	100.0
1909.....	112	233	1,570,604	483,322	Individual.....	20.6	16.1	21.1	22.8
1904.....	61	331	2,264,145	625,611	Firm.....	13.2	11.3	12.8	14.3
Corporation:					Corporation.....	23.5	29.0	26.0	24.2
1909.....	133	1,752	13,586,608	3,356,970	Other.....	42.6	43.5	40.0	38.8
1904.....	81	826	5,146,817	1,407,935	Flour-mill and gristmill products, 1909.....	84	435	\$11,685,116	\$1,630,202
Other:					Individual.....	32	52	1,268,595	233,200
1909.....	35	29	424,357	61,872	Firm.....	17	41	835,135	120,443
1904.....	40	33	260,527	42,437	Corporation.....	35	342	9,581,383	1,276,559
Per cent of total:					Per cent of total.....	100.0	100.0	100.0	100.0
1909.....	100.0	100.0	100.0	100.0	Individual.....	38.1	12.0	10.9	14.3
1904.....	100.0	100.0	100.0	100.0	Firm.....	20.2	9.4	7.1	7.4
Individual:					Corporation.....	41.7	78.6	82.0	78.3
1909.....	62.8	27.8	18.6	28.6	Leather goods, 1909.....	19	93	\$683,273	\$221,326
1904.....	53.2	32.2	24.9	33.5	Individual.....	11	14	106,442	30,897
Firm:					Firm.....	5	8	30,510	16,134
1909.....	14.9	8.4	8.2	8.8	Corporation.....	3	76	546,321	165,295
1904.....	17.9	18.9	22.2	20.0	Per cent of total.....	100.0	100.0	100.0	100.0
Corporation:					Individual.....	57.9	14.3	15.6	13.0
1909.....	17.7	62.8	71.0	61.4	Firm.....	26.3	8.2	4.5	7.3
1904.....	16.0	47.1	50.4	45.1	Corporation.....	15.8	77.6	80.0	74.7
Other:					Printing and publishing, 1909.....	330	733	\$1,909,514	\$1,489,733
1909.....	4.7	1.0	2.2	1.1	Individual.....	257	389	897,030	713,023
1904.....	7.9	1.9	2.5	1.4	Firm.....	37	71	176,733	138,699
Bread and other bakery products, 1909.....	67	146	\$600,621	\$254,706	Corporation.....	31	327	829,231	611,880
Individual.....	55	96	485,369	179,323	Other.....	5	1	6,420	6,251
Firm.....	9	10	52,185	23,931	Per cent of total.....	100.0	100.0	100.0	100.0
Corporation.....	3	40	113,067	51,447	Individual.....	77.9	49.4	47.0	48.5
Per cent of total.....	100.0	100.0	100.0	100.0	Firm.....	11.2	9.0	9.3	9.4
Individual.....	82.1	65.8	72.5	70.4	Corporation.....	9.4	41.5	43.4	41.6
Firm.....	13.4	6.8	8.7	9.4	Other.....	1.5	0.1	0.3	0.4
Corporation.....	4.5	27.4	18.8	20.2					

From 1904 to 1909 the proportionate number of establishments under the different kinds of ownership

shows no pronounced change, although in this respect there were small increases in the proportion of estab-

lishments under individual and corporate ownership and slight decreases in the proportion of those under other forms. In the average number of wage earners employed, however, in the value of products and in the value added by manufacture, establishments operated by corporations reported a much larger proportion of the total in 1909 than in 1904. In 1909, of the total value of products of the bakeries, 72.5 per cent was reported by establishments under individual ownership. In the manufacture of butter and cheese, "Other" forms of ownership showed the largest value of products, because of the large number of cooperative organizations which are peculiar to this industry. In the flour-mill and gristmill and in the leather industries four-fifths of the value of products were reported by corporations.

Size of establishment.—The tendency for manufacturing to become concentrated in large establishments, or the reverse, is a matter of interest from the standpoint of industrial organization. In order to throw some light upon it the table which follows groups the establishments according to the value of their products. The table also shows the average size of establishments for all industries combined and for important industries separately, as measured by number of wage earners, value of products, and value added by manufacture. The totals for all industries are shown for the last two censuses, while for certain important industries figures are given for 1909 only.

This table shows that, in 1909, of the 752 establishments only 33, or 4.4 per cent, had a value of products exceeding \$100,000. These establishments, however, had an average number of wage earners of 859, or 30.8 per cent of the total number in all establishments, and reported 58 per cent of the total value of products and 36.6 per cent of the total value added by manufacture.

On the other hand, the very small establishments—that is, those having a value of products of less than \$5,000—represented more than one-half, 50.8 per cent, of the total number of establishments, but the average number of wage earners employed in them represented only 12.6 per cent, the value of their products only 4.8 per cent, and the value added by manufacture only 12.1 per cent of the corresponding totals for the state.

The increase from \$20,154 to \$25,449 in the average value of products per establishment, and from \$6,158 to \$7,266 in average value added by manufacture per establishment, is due to the greater proportion of the totals shown for these items in the establishments having products valued at over \$100,000. The average number of wage earners per establishment remained practically the same.

INDUSTRY AND VALUE OF PRODUCTS.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.
ALL INDUSTRIES:				
1909.....	752	2,789	\$19,137,509	\$5,489,916
1904.....	597	1,765	10,217,914	3,121,828
Less than \$5,000:				
1909.....	382	351	915,406	659,337
1904.....	285	290	669,773	469,202
\$5,000 and less than \$20,000:				
1909.....	238	628	2,350,795	1,103,010
1904.....	132	439	1,282,776	641,385
\$20,000 and less than \$100,000:				
1909.....	99	951	4,767,125	1,709,216
1904.....	66	501	2,798,317	1,024,540
\$100,000 and less than \$1,000,000:				
1909.....	33	859	11,104,180	1,999,593
1904.....	24	435	6,487,043	886,801
Per cent of total:				
1909.....	100.0	100.0	100.0	100.0
1904.....	100.0	100.0	100.0	100.0
Less than \$5,000:				
1909.....	50.8	12.6	4.8	12.1
1904.....	56.2	16.5	6.6	15.0
\$5,000 and less than \$20,000:				
1909.....	31.6	22.5	12.3	20.2
1904.....	20.0	25.0	12.4	20.5
\$20,000 and less than \$100,000:				
1909.....	13.2	34.1	24.0	31.2
1904.....	13.0	33.7	27.4	32.8
\$100,000 and less than \$1,000,000:				
1909.....	4.4	30.8	58.0	36.6
1904.....	4.7	24.8	53.7	31.6
Average per establishment:				
1909.....	4	4	\$25,449	\$7,266
1904.....	3	3	20,154	6,158
Bread and other bakery products, 1909.....	67	146	\$600,621	\$254,706
Less than \$5,000.....	31	14	82,071	38,331
\$5,000 and less than \$20,000.....	30	68	290,463	124,138
\$20,000 and less than \$100,000.....	6	64	228,087	91,837
Per cent of total.....	100.0	100.0	100.0	100.0
Less than \$5,000.....	46.3	9.6	13.7	15.3
\$5,000 and less than \$20,000.....	44.8	46.6	48.4	48.8
\$20,000 and less than \$100,000.....	9.0	43.8	38.0	36.0
Average per establishment.....	2	2	\$8,964	\$3,802
Butter, cheese, and condensed milk, 1909.....	68	62	\$1,029,135	\$137,806
Less than \$5,000.....	10	7	30,705	7,031
\$5,000 and less than \$20,000.....	41	32	469,737	67,065
\$20,000 and less than \$100,000.....	17	23	528,693	63,710
Per cent of total.....	100.0	100.0	100.0	100.0
Less than \$5,000.....	14.7	11.3	3.0	5.1
\$5,000 and less than \$20,000.....	60.3	51.6	45.6	46.7
\$20,000 and less than \$100,000.....	25.0	37.1	51.4	48.2
Average per establishment.....	1	1	\$15,134	\$2,027
Flour-mill and gristmill products, 1909.....	84	435	\$11,685,118	\$1,630,202
Less than \$5,000.....	3	2	11,123	1,899
\$5,000 and less than \$20,000.....	22	14	282,060	46,980
\$20,000 and less than \$100,000.....	35	105	2,029,191	282,469
\$100,000 and less than \$1,000,000.....	24	314	9,362,736	1,318,854
Per cent of total.....	100.0	100.0	100.0	100.0
Less than \$5,000.....	3.6	0.5	0.1	0.1
\$5,000 and less than \$20,000.....	26.2	3.2	2.4	2.9
\$20,000 and less than \$100,000.....	41.7	24.1	17.4	22.2
\$100,000 and less than \$1,000,000.....	28.6	72.2	80.1	74.8
Average per establishment.....	5	5	\$139,109	\$19,407
Leather goods, 1909.....	19	98	\$693,279	\$221,326
Less than \$5,000.....	5	5	18,162	10,779
\$5,000 and less than \$20,000.....	11	24	112,975	46,931
\$20,000 and less than \$100,000.....	3	69	552,130	164,616
Per cent of total.....	100.0	100.0	100.0	100.0
Less than \$5,000.....	26.3	5.1	2.7	4.9
\$5,000 and less than \$20,000.....	57.0	24.6	16.5	20.8
\$20,000 and less than \$100,000.....	15.8	70.4	80.8	74.4
Average per establishment.....	5	5	\$36,962	\$11,649
Printing and publishing, 1909.....	330	788	\$1,909,514	\$1,469,733
Less than \$5,000.....	248	264	599,352	486,455
\$5,000 and less than \$20,000.....	69	246	559,883	439,454
\$20,000 and less than \$100,000.....	13	238	750,279	543,824
Per cent of total.....	100.0	100.0	100.0	100.0
Less than \$5,000.....	75.2	32.2	31.4	33.3
\$5,000 and less than \$20,000.....	20.9	31.2	29.3	29.9
\$20,000 and less than \$100,000.....	3.9	36.5	39.3	36.8
Average per establishment.....	2	2	\$5,786	\$4,454

¹ Includes the group of "\$1,000,000 and over."

² Includes the group "\$100,000 and less than \$1,000,000."

In some respects, and especially from the standpoint of conditions under which persons engaged in manufactures work, the best classification of establishments to bring out the feature of size is a classification according to the number of wage earners employed.

The following table shows for 1909 such a classification for all industries combined and for seven important industries individually, and gives not only the number of establishments falling in each group but also the average number of wage earners employed:

INDUSTRY.	Total.	ESTABLISHMENTS EMPLOYING—								
		No wage earners.	1 to 5 wage earners.	6 to 20 wage earners.	21 to 50 wage earners.	51 to 100 wage earners.	101 to 250 wage earners.	251 to 500 wage earners.	501 to 1,000 wage earners.	Over 1,000 wage earners.
NUMBER OF ESTABLISHMENTS.										
All industries	752	125	537	64	21	3	2			
Bread and other bakery products.....	97	17	40	3	1					
Brick and tile.....	13		5	6						
Butter, cheese, and condensed milk.....	93	8	60							
Cars and general shop construction and repairs by steam-railroad companies.....	5				1	2	2			
Flour-mill and gristmill products.....	84	12	51	15	5	1				
Leather goods.....	19		16	1	2					
Printing and publishing.....	330	60	248	17						
All other industries.....	166	28	111	22	5					
AVERAGE NUMBER OF WAGE EARNERS.										
All industries	2,789		956	654	708	228	247			
Bread and other bakery products.....	146		92	23	31					
Brick and tile.....	188		13	90	85					
Butter, cheese, and condensed milk.....	62		62							
Cars and general shop construction and repairs by steam-railroad companies.....	463				42	174	247			
Flour-mill and gristmill products.....	435		116	140	127	52				
Leather goods.....	98		22	9	67					
Printing and publishing.....	788		431	152	205					
All other industries.....	609		220	240	149					
PER CENT OF AVERAGE NUMBER OF WAGE EARNERS.										
All industries	100.0		34.3	23.4	25.3	8.1	8.9			
Bread and other bakery products.....	100.0		63.0	16.8	21.2					
Brick and tile.....	100.0		6.9	47.9	45.2					
Butter, cheese, and condensed milk.....	100.0		100.0							
Cars and general shop construction and repairs by steam-railroad companies.....	100.0				9.1	37.6	53.3			
Flour-mill and gristmill products.....	100.0		26.7	32.2	29.2	12.0				
Leather goods.....	100.0		22.4	9.2	68.4					
Printing and publishing.....	100.0		54.7	19.3	26.0					
All other industries.....	100.0		36.1	39.4	24.5					

The per cent distribution of the number of establishments is not shown in this table; of the 752 establishments reported for all industries, 16.6 per cent employed no wage earners; 71.4 per cent, 1 to 5; 8.5 per cent, 6 to 20; and 2.8 per cent, 21 to 50. The most numerous single group consists of the 537 establishments employing 1 to 5 wage earners, and the next of the 125 establishments employing no wage earners.

Of the total number of wage earners, 34.3 per cent were in establishments employing from 1 to 5 wage earners; 23.4 per cent were in establishments employing from 6 to 20 wage earners; 25.3 per cent were in establishments employing from 21 to 50 wage earners; while 17 per cent were in the 5 establishments employing over 50 wage earners each.

Expenses.—As stated in the Introduction, the census does not purport to furnish figures that can be used for determining the cost of manufacture and profits. Facts of interest can, however, be brought out concerning the relative importance of the different classes of expenses which make up the total.

The following table shows, in percentages, the dis-

tribution of expenses among the classes indicated for all industries combined and for certain important industries separately. The figures on which the percentages are based appear in Table II.

INDUSTRY.	PER CENT OF TOTAL EXPENSES REPORTED.			
	Salaries.	Wages.	Materials.	Miscellaneous expenses.
All industries	8.6	10.3	79.1	6.9
Bread and other bakery products.....	3.4	16.9	69.2	10.4
Brick and tile.....	10.6	36.9	30.6	22.0
Butter, cheese, and condensed milk.....	0.8	4.7	91.5	2.9
Cars and general shop construction and repairs by steam-railroad companies.....	4.9	50.1	44.1	1.0
Flour-mill and gristmill products.....	1.8	2.6	91.3	4.4
Leather goods.....	7.2	8.6	75.3	8.9
Printing and publishing.....	11.1	38.5	31.7	18.6
All other industries.....	7.8	19.1	58.8	14.2

This table shows that, for all industries combined, 79.1 per cent of the total expenses was incurred for materials, 13.9 per cent for services—that is, salaries and wages—and but 6.9 per cent for other purposes. As would be expected, these proportions vary greatly in the different industries.

SUPPLEMENTARY DATA REGARDING IMPORTANT INDUSTRIES.

(With statistics for laundries and custom gristmills.)

For certain industries the Census Bureau collects, by means of special schedules, details regarding the quantity and value of materials and products which do not appear on the general schedule. Certain data of this character for three important industries in North Dakota are here presented.

Flour-mill and gristmill products.—The tabular statement following gives the quantity and value of products for the last two census years.

From 1904 to 1909 there was an increase of 80.8 per cent in the value of products. While every product shared in this increase, the most important change was in the production of grits, which increased from 22,068 to 9,029,862 pounds. The value of wheat flour showed a gain of 63.9 per cent in 1909, compared with 1904, although its proportion of the total value of all products of the industry decreased from 85.3 per cent in 1904 to 77.3 per cent in 1909.

PRODUCT.	QUANTITY.		VALUE.	
	1909	1904	1909	1904
Total value.....			\$11,685,116	\$6,463,228
Wheat flour..... barrels	1,325,920	1,223,219	9,034,418	5,513,554
White..... barrels	1,816,738	1,221,416	8,996,038	5,506,935
Graham..... barrels	9,182	1,803	38,380	6,619
Corn meal..... barrels	1,626		5,124	
Rye flour..... barrels	153	50	581	300
Grits..... pounds	9,029,862	22,068	261,844	417
Feed..... tons	30,575	11,220	805,888	189,230
Offal..... tons	76,357	52,904	1,554,283	755,846
All other products.....			22,978	3,881

Butter, cheese, and condensed milk.—There were only four cheese factories in 1904 and only one in 1909, and the value of their products, which was comparatively small at both censuses, is included under "All other products" in the following table:

PRODUCT.	QUANTITY AND VALUE.		
	1909	1904	1899
Total value.....	\$1,029,135	\$562,481	\$122,128
Butter:			
Packed solid—			
Pounds.....	2,873,519	2,657,328	361,224
Value.....	\$756,158	\$485,758	\$74,839
Prints or rolls—			
Pounds.....	810,100	355,823	101,964
Value.....	\$225,197	\$70,650	\$20,393
Cream sold:			
Pounds.....	3,348	120	2,400
Value.....	\$496	\$12	\$120
All other products.....	\$47,284	\$6,061	\$26,776

There was an increase of 83 per cent in the total value of products from 1904 to 1909. This increase is due largely to an advance in the price of butter.

Printing and publishing.—The following shows the number of publications and the aggregate circulation per issue for 1909, 1904, and 1899, distributed according to period of issue.

In 1909 the aggregate circulation per issue of the newspapers and periodicals of the state combined

was 372,642, which represents an increase of 51.7 per cent over the corresponding figure for 1904. Weekly publications had a circulation of 259,675 per issue.

PERIOD OF ISSUE.	NUMBER OF PUBLICATIONS			AGGREGATE CIRCULATION PER ISSUE.		
	1909	1904	1899	1909	1904	1899
Total.....	333	235	143	372,642	245,711	138,890
Daily.....	12	9	9	56,954	21,458	18,021
Sunday.....	4	2	4	23,900	9,550	(1)
Semiweekly.....	1	3	2	613	5,000	7,100
Weekly.....	310	212	126	259,675	175,513	106,219
Monthly.....	5	6	2	26,000	19,630	7,550
All other classes.....	1	3		5,500	14,500	

¹ Included in circulation of dailies.

Of the 333 newspapers and periodicals published in 1909, 310, or 93.1 per cent, were published weekly. There was an increase of three in the number of dailies from 1904 to 1909, and during the same period the combined total circulation of the daily publications increased 165.4 per cent. All of the publications were in the English language, except 10, 5 of which were in German, 2 in German and English, and 3 in Norwegian.

Laundries.—Statistics for steam laundries are not included in the general tables or in the totals for manufacturing industries. There were 34 establishments in the state of North Dakota, 6 of which were in Fargo and 4 in Grand Forks.

The following statement summarizes the statistics:

Number of establishments.....	34
Persons engaged in the industry.....	508
Proprietors and firm members.....	39
Salaried employees.....	30
Wage earners (average number).....	434
Primary horsepower.....	606
Capital.....	\$444,817
Expenses.....	413,161
Services.....	208,492
Materials.....	102,412
Miscellaneous.....	102,257
Amount received for work done.....	548,175

Twenty establishments were operated by individuals, five by corporations, and nine by general partnerships. Six establishments had receipts for the year's business of less than \$5,000; 17, \$5,000 but less than \$20,000; and 11, \$20,000 but less than \$100,000.

The number of wage earners employed each month and the per cent which this number represented of the greatest number employed in any month were as follows:

MONTH.	WAGE EARNERS.		MONTH.	WAGE EARNERS.	
	Number.	Per cent of maximum.		Number.	Per cent of maximum.
January.....	394	85.7	July.....	457	99.3
February.....	400	87.0	August.....	460	100.0
March.....	435	94.6	September.....	445	96.7
April.....	437	95.0	October.....	430	93.5
May.....	417	90.7	November.....	446	97.0
June.....	440	95.7	December.....	451	98.0

MANUFACTURES—NORTH DAKOTA.

The different kinds of primary power, the number of engines or motors, and the horsepower used in 1909 are shown in the following tabular statement:

KIND.	Number of engines or motors.	Horse-power.
Primary power, total.....		608
Owned.....	32	599
Steam.....	29	485
Gas.....	3	15
Rented—Electric.....	20	109

The kind and amount of fuel used are shown in the following statement:

KIND.	Unit.	Quantity.
Anthracite coal.....	Tons.....	161
Bituminous coal.....	Tons.....	5,888
Wood.....	Cords.....	1,767
Oil.....	Barrels.....	130
Gas.....	1,000 feet.....	1,840

Custom gristmills.—Statistics for custom gristmills are not included in the general tables, or in the totals for manufacturing industries, but are presented in the following summary:

Number of establishments.....	58
Persons engaged in the industry.....	79
Proprietors and firm members.....	60
Salaried employees.....	2
Wage earners (average number).....	17
Primary horsepower.....	1,270
Capital.....	\$168,192
Expenses.....	746,119
Services.....	8,860
Materials.....	¹ 730,458
Miscellaneous.....	6,801
Value of products.....	¹ 824,782

¹ Includes estimate of all grain ground.

MANUFACTURES—NORTH DAKOTA.

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TABLE I.—COMPARATIVE SUMMARY FOR 1909, 1904, AND 1899.

THE STATE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES.

INDUSTRY AND CITY.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
			Total.	Proprietors and firm members.	Salaries employed.	Wage earners (average number).							
			Expressed in thousands.										
STATE—All industries	1909	752	4,148	723	636	2,789	13,196	\$11,585	\$629	\$1,787	\$13,674	\$19,138	\$5,464
	1904	507	2,545	494	298	1,755	9,873	5,704	258	1,031	7,096	10,218	3,122
	1899	337	.....	.....	152	1,358	7,351	3,512	130	671	4,151	6,280	2,108
Bread and other bakery products.....	1909	67	242	74	22	146	88	337	17	84	346	601	255
	1904	39	137	43	8	85	14	107	6	44	184	311	127
	1899	11	49	12	.....	37	.....	21	.....	13	37	81	44
Brick and tile.....	1909	13	214	11	15	188	668	769	25	88	73	287	214
	1904	14	142	10	15	117	407	204	10	60	34	170	136
	1899	12	132	20	4	108	165	174	3	48	30	132	102
Butter, cheese, and condensed milk.....	1909	68	106	32	12	62	854	312	8	46	891	1,029	138
	1904	60	98	18	25	55	618	202	2	38	478	562	84
	1899	21	31	13	5	13	191	52	1	8	96	122	26
Cars and general shop construction and repairs by steam-railroad companies.....	1909	5	494	.....	31	463	332	745	33	340	300	680	380
	1904	3	166	.....	20	146	98	137	19	102	81	202	121
	1899	3	133	.....	7	126	197	171	7	68	65	141	76
Flour-mill and gristmill products.....	1909	84	710	70	196	435	8,907	4,427	199	283	10,055	11,685	1,630
	1904	56	454	66	76	312	5,770	2,384	85	200	5,463	6,463	1,000
	1899	58	.....	53	.....	272	.....	1,144	46	149	3,102	3,850	748
Gas, illuminating and heating.....	1909	6	49	1	20	28	52	861	18	13	78	199	121
	1904	4	23	1	12	10	1,825	432	11	6	34	102	68
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Printing and publishing.....	1909	330	1,294	333	173	788	948	1,955	154	533	440	1,910	1,470
	1904	229	834	243	76	515	392	1,079	69	313	237	1,110	873
	1899	140	578	148	48	382	.....	626	42	177	170	720	550
Tobacco manufactures.....	1909	28	68	31	3	34	.....	53	1	20	37	98	61
	1904	27	60	30	.....	30	.....	35	.....	16	29	76	47
	1899	26	61	28	.....	33	.....	24	.....	17	20	69	43
All other industries.....	1909	151	971	162	164	645	1,347	2,126	174	380	1,454	2,649	1,195
	1904	75	631	83	64	484	749	1,124	56	252	556	1,222	666
	1899	66	.....	.....	35	387	.....	1,300	31	191	625	1,145	520

CITIES OF 10,000 TO 50,000 INHABITANTS—ALL INDUSTRIES COMBINED.

Fargo	1909	61	746	43	193	510	789	\$2,077	\$192	\$325	\$1,410	\$2,477	\$1,067
	1904	47	522	47	89	386	.....	884	76	219	555	1,161	606
	1899	36	.....	.....	37	307	.....	846	33	163	783	1,231	448
Grand Forks	1909	38	473	31	92	350	773	1,376	112	218	1,251	1,910	659
	1904	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

¹ Figures can not be shown without disclosing individual operations.
² Excluding statistics for one establishment, to avoid disclosure of individual operations.
³ Figures not available.

TABLE II.—DETAIL STATEMENT FOR

INDUSTRY.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.										WAGE EARNERS—NUMBER DEC. 15, OR NEAREST REPRESENTATIVE DAY.					Primary horse-power.
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks.		Wage earners.			Total.	16 and over.		Under 16.				
					Male.	Female.	Average number.	Number.			Male.	Female.	Male.	Female.			
								Maximum month.	Minimum month.								
1 All industries.....	752	4,148	723	242	303	91	2,789	No 3,052	Ja 2,356	(1)	(1)	(1)	(1)	(1)	13,186		
2 Artificial stone.....	31	116	34	3	3	76	76	Je ² 138	Ja 10	119	119				101		
3 Bread and other bakery products.....	67	242	74	3	12	7	146	Jy 158	Mh 120	157	122	31	4		88		
4 Brick and tile.....	13	214	11	13	1	1	188	Je ² 385	Ja 40	284	277		7		638		
5 Butter, cheese, and condensed milk.....	68	106	32	10		2	62	Je 72	Ja 40	67	66		1		384		
6 Carriages and wagons and materials.....	3	12	3				9	Mh ² 10	Jy ² 8	10	10				14		
7 Cars and general shop construction and repairs by steam-railroad companies.	5	494		15	14	2	463	De 517	Ap 424	527	527				332		
8 Confectionery.....	3	127		7	18	4	98	No 134	Ja ² 82	115	45	70			60		
9 Copper, tin, and sheet-iron products.....	8	82	6	5	6	2	63	Oc 78	Ja 41	66	66				36		
10 Flour-mill and gristmill products.....	84	710	79	75	99	22	435	Oc 560	Au 365	561	560	1			8,307		
11 Fur goods.....	4	19	5			1	13	No ² 22	Ap 7	22	5	17			7		
12 Gas, illuminating and heating.....	6	49	1	10	7	3	28	My 32	Fe 23	28	28				52		
13 Leather goods.....	19	157	22	10	23	4	98	De 111	Jy ² 94	111	110		1		93		
14 Lumber and timber products.....	8	80	8	6	3		63	No 77	Ja 40	71	71				249		
15 Marble and stone work.....	7	31	9		6	1	15	Se 19	Ja ² 8	16	16				13		
16 Patent medicines and compounds and druggists' preparations.	3	8	4	1	1		2	Ja ² 2	Jy ² 2	2	2				9		
17 Printing and publishing.....	330	1,204	333	59	81	33	788	De 822	Mh 769	832	644	144	36	8	948		
18 Tobacco manufactures.....	28	68	31	1	2		34	No 43	Je 27	44	37	5	2		765		
19 All other industries ⁴	65	339	71	24	27	9	208										

¹ No figures given for reasons explained in the Introduction.

² Same number reported for one or more months.

³ Same number reported throughout the year.

⁴ All other industries embrace—

Agricultural implements.....	2	Canning and preserving.....	1	Coffee and spice, roasting and grinding.....	1
Awnings, tents, and sails.....	1	Carpets, rag.....	1	Flax and hemp, dressed.....	6
Bluing.....	1	Cars and general shop construction and repairs by street-railroad companies.....	2		
Brooms.....	2				

TABLE III.—DETAIL STATEMENT FOR CITIES OF 50,000 INHABITANTS OR MORE, BY INDUSTRIES, CITIES OF 10,000 TO 50,000 INHABITANTS—ALL INDUSTRIES COMBINED.

CITY.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.										WAGE EARNERS—NUMBER DEC. 15, OR NEAREST REPRESENTATIVE DAY.					Primary horse-power.
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks.		Wage earners (average number).			Total.	16 and over.		Under 16.				
					Male.	Female.	Total.	16 and over.			Under 16.	Male.	Female.	Male.	Female.		
								Male.	Female.								
1 FARGO.....	61	746	43	58	110	25	510	434	72	4	548	468	78	4	789		
2 GRAND FORKS.....	38	473	31	32	46	14	350	275	61	14	416	326	73	17	773		

MANUFACTURES—NORTH DAKOTA.

THE STATE, BY INDUSTRIES: 1909.

Capital.	EXPENSES.										Value of products.	Value added by manufacture.	
	Total.	Services.			Materials.		Miscellaneous.						
		Officials.	Clerks.	Wage earners.	Fuel and rent of power.	Other.	Rent of factory.	Taxes, including internal revenue.	Contract work.	Other.			
1	\$11,584,747	\$17,290,381	\$320,815	\$307,915	\$1,787,405	\$453,420	\$13,220,170	\$84,175	\$75,612	\$21,323	\$1,019,496	\$19,137,506	\$5,463,916
2	165,701	140,918	2,620	1,839	48,607	2,439	72,427	520	689	.....	11,777	183,769	108,903
3	337,417	499,541	4,940	12,248	84,491	18,350	327,565	11,090	3,891	.....	36,960	600,621	264,706
4	769,367	238,175	17,714	7,504	87,795	46,798	25,990	1,100	2,420	.....	48,854	286,921	214,133
5	312,246	973,917	7,592	450	45,943	13,890	877,439	1,530	2,087	77	24,999	1,029,135	187,806
6	23,685	15,165	.....	.....	6,940	787	6,700	.....	168	.....	570	18,885	11,398
7	744,651	679,613	20,085	13,070	340,186	58,925	240,620	.....	.....	.....	6,727	679,612	380,067
8	206,009	424,183	13,864	24,986	88,423	4,397	293,768	1,856	1,372	.....	45,522	454,516	156,356
9	204,719	238,723	6,408	8,327	40,502	1,304	126,140	1,500	1,026	.....	53,510	288,283	130,839
10	4,427,320	11,017,142	102,759	90,418	283,063	185,891	9,869,323	1,203	26,487	.....	452,298	11,685,116	1,630,202
11	51,827	37,679	.....	384	7,290	348	22,844	2,520	377	.....	3,916	48,011	24,819
12	800,894	132,823	11,747	5,919	13,162	56,983	20,849	500	6,156	2,767	14,740	198,633	120,801
13	526,881	613,507	13,100	26,069	52,947	3,537	458,410	5,380	3,373	.....	45,061	683,273	221,326
14	177,587	161,074	8,700	3,250	80,162	5,108	83,478	8	1,987	.....	8,381	186,645	65,059
15	96,402	76,648	.....	4,650	11,429	650	42,026	591	637	.....	16,665	96,160	53,474
16	6,673	9,442	600	1,012	1,312	96	5,466	60	42	140	714	11,451	5,889
17	1,955,261	1,386,077	76,345	78,036	583,432	42,868	396,893	45,378	15,147	17,856	180,102	1,909,514	1,469,733
18	52,565	69,970	300	1,090	20,102	365	37,070	2,021	6,165	.....	2,837	98,178	60,743
19	665,542	575,734	29,131	22,663	121,619	10,964	313,167	8,918	3,588	483	65,201	708,793	384,662

4 All other industries embrace—Continued.

Food preparations.....	1	Leather, tanned, curried, and finished.....	2	Upholstering materials.....	2
Foundry and machine-shop products.....	12	Mattresses and spring beds.....	1	Wirework, including wire rope and cable.....	1
Hair work.....	1	Mineral and soda waters.....	26		
Hand stamps and stencils and brands.....	1	Show cases.....	1		

AND TOTALS FOR ALL INDUSTRIES IN CITIES OF 10,000 BUT LESS THAN 50,000 INHABITANTS: 1909.

CITIES OF 10,000 TO 50,000 INHABITANTS—ALL INDUSTRIES COMBINED.

Capital.	EXPENSES.										Value of products.	Value added by manufacture.	
	Total.	Services.			Materials.		Miscellaneous.						
		Officials.	Clerks.	Wage earners.	Fuel and rent of power.	Other.	Rent of factory.	Taxes, including internal revenue.	Contract work.	Other.			
1	\$2,077,185	\$2,232,000	\$86,052	\$105,565	\$325,052	\$57,371	\$1,352,902	\$17,075	\$13,011	\$17,301	\$257,671	\$2,478,845	\$1,066,572
2	1,375,525	1,742,238	53,418	58,729	218,084	59,183	1,191,385	11,186	12,062	1,650	136,536	1,910,062	656,489

OHIO.

INDUSTRIES IN GENERAL.

General character of the state.—Ohio, with a gross area of 41,040 square miles, of which 300 represent water surface, and a population in 1910 of 4,767,121, ranks thirty-fifth in area and fourth in population among the states of the Union. Its population was 4,157,545 in 1900 and 3,672,329 in 1890. In 1910 the density of population for the entire state was 117 per square mile, the corresponding figure for 1900 being 102.1. Fifty-five and nine-tenths per cent of the entire population of the state resided in 1910 in incorporated cities and villages having a population of 2,500 or over as against 48.1 per cent in 1900.

In 1910 eight cities in the state had a population of over 50,000, as follows: Cleveland, 560,663; Cincinnati, 363,591; Columbus, 181,511; Toledo, 168,497; Dayton, 116,577; Youngstown, 79,066; Akron, 69,067; and Canton, 50,217. There were also 29 cities having a population of over 10,000 but less than 50,000. (See table on page 944.) These 37 cities contained 45 per cent of the total population of the state and, excluding Lakewood, were credited in 1909 with 74.9 per cent of the total value of its manufactures. Apart from these cities, only 10.9 per cent of the population resided in incorporated places of 2,500 inhabitants or over.

The industrial prominence of Ohio is due in the main to its many natural resources, among the most important of which are a fertile soil, extensive hardwood forests, and abundant supplies of coal, natural gas, and petroleum. Furthermore, the splendid advantages afforded for transportation by water as well as by rail can not be overestimated. Lake Erie and the Erie Canal make a direct outlet to the Atlantic seaboard, and the western Great Lakes and the Sault Ste. Marie Canal furnish a water route to the Northwest states, while the Ohio River, which forms 436 miles of the southern boundary of the state, and its tributary, the Muskingum River, furnish communication with Pennsylvania and the states of the Mississippi Valley.

Two canals, one from Cleveland to Portsmouth and the other from Toledo to Cincinnati, connect Lake Erie with the Ohio River. In 1909 there were 9,079¹ miles of main and branch lines of steam railroad within the borders of the state. The growth of interurban electric systems in the state has stimulated its manufactures and has added greatly to its facilities for local trade. Ohio is the fifth state of the Union in the mileage of steam railways and second in the mileage of electric railways.

¹ Interstate Commerce Commission, Statistics of Railways in the United States, 1909.

Importance and growth of manufactures.—Although mining and agriculture are important, Ohio is largely a manufacturing state. Its early industrial development was due in part to its excellent location, since its manufactures received an impetus from the rapid settlement of the Mississippi Valley, which opened a market for manufactured products in which the Eastern states were unable to compete with success. The growth of manufactures in the state has been substantial. In 1849 the total value of products for Ohio, including the products of the neighborhood and hand industries, amounted to \$62,692,279, while in 1909, exclusive of the value of the products of the neighborhood and hand industries, it reached \$1,437,935,817, a figure about twenty-three times that of 60 years before. During the same period the population of the state increased 140.7 per cent and the gross value of products per capita of the total population of the state increased from \$32 to \$302. However, the proportion of the total value of the products of manufacturing industries in the United States which is contributed by Ohio has changed but slightly, having been 6.2 per cent in 1849 and 7 per cent in 1909. In 1849 an average of 51,491 wage earners, representing 2.6 per cent of the total population, were engaged in manufactures, and in 1909 an average of 446,934 wage earners, or 9.4 per cent of the total population, were so engaged. The state ranked fourth among the states of the Union in gross value of manufactured products at each census from 1849 to 1869. In 1879, however, it dropped to the fifth place, a position which it has retained at each subsequent census.

The first table on the following page gives the most important figures relative to all classes of manufactures combined for 1909, 1904, and 1899, together with the percentages of increase from census to census.

In 1909 the state of Ohio had 15,138 manufacturing establishments, which gave employment to an average of 523,004 persons during the year and paid out \$317,597,000 in salaries and wages. Of the persons employed, 446,934 were wage earners. These establishments turned out products to the value of \$1,437,936,000, to produce which materials costing \$824,202,000 were utilized. The value added by manufacture was thus \$613,734,000, which figure, as explained in the Introduction, best represents the net wealth created by manufacturing operations during the year.

The totals presented in the tables of this report do not include the statistics for an establishment operated by the Federal Government, the National Home for

Disabled Volunteer Soldiers, located outside the corporate limits of Dayton, in Montgomery County. In 1909 this establishment employed an average of 228

wage earners and turned out products, such as uniform clothing, underwear, and bedding, equivalent to \$217,622 in value.

	NUMBER OR AMOUNT.			PER CENT OF INCREASE. ¹	
	1909	1904	1899	1904-1909	1899-1904
	Number of establishments.....	15,138	13,785	13,868	9.8	-0.6
Persons engaged in manufactures.....	523,004	417,948	(²)	25.1	
Proprietors and firm members.....	14,719	13,657	(²)	7.8	
Salaried employees.....	61,851	39,991	28,109	53.4	42.3
Wage earners (average number).....	446,934	364,298	308,109	22.7	18.2
Primary horsepower.....	1,583,155	1,116,932	783,665	41.7	42.5
Capital.....	\$1,300,733,000	\$856,989,000	\$570,909,000	51.8	50.1
Expenses.....	1,282,845,000	856,206,000	637,576,000	49.8	34.3
Services.....	317,597,000	225,864,000	164,579,000	40.6	37.2
Salaries.....	72,147,000	43,435,000	28,151,000	66.1	54.3
Wages.....	245,450,000	182,429,000	136,428,000	34.5	33.7
Materials.....	824,202,000	527,637,000	409,303,000	56.2	28.9
Miscellaneous.....	141,046,000	102,705,000	63,694,000	37.3	61.2
Value of products.....	1,437,936,000	960,812,000	748,671,000	49.7	28.3
Value added by manufacture (value of products less cost of materials).....	613,734,000	433,175,000	339,368,000	41.7	27.6

¹ A minus sign (-) denotes decrease.

² Figures not available.

In general, this table brings out the fact that the manufacturing industries of Ohio as a whole showed a greater development during the more recent five-year period, 1904-1909, than during the preceding five-year period, 1899-1904. During the later period the number of establishments increased 9.8 per cent and the average number of wage earners 22.7 per cent, while the value of products increased 49.7 per cent and the value added by manufacture 41.7 per cent. As pointed out in the Introduction, it would be improper to infer that manufactures had increased in vol-

ume to the full extent indicated by these figures representing values, since a considerable part of the increase shown is certainly due to the increase that has taken place in the price of commodities during the period covered by the statistics. The only decrease shown in the table is in the number of establishments during the period 1899-1904, amounting to six-tenths of 1 per cent.

The relative importance and growth of the leading manufacturing industries of the state are shown in the following table:

INDUSTRY.	Number of establishments.	WAGE EARNERS.		VALUE OF PRODUCTS.		VALUE ADDED BY MANUFACTURE.		PER CENT OF INCREASE. ¹			
		Average number.	Per cent distribution.	Amount.	Per cent distribution.	Amount.	Per cent distribution.	Value of products.		Value added by manufacture.	
								1904-1909	1899-1904	1904-1909	1899-1904
All industries.....	15,138	446,934	100.0	\$1,437,936,000	100.0	\$613,734,000	100.0	49.7	28.3	41.7	27.6
Iron and steel, steel works and rolling mills.....	75	38,586	8.6	197,780,000	13.8	58,537,000	9.5	76.6	13.6	73.3	9.8
Foundry and machine-shop products.....	1,218	64,817	14.5	145,837,000	10.1	81,277,000	13.2	40.6	17.3	37.4	19.9
Iron and steel, blast furnaces.....	40	7,295	1.6	83,699,000	5.8	15,274,000	2.5	104.8	1.2	82.2	-53.2
Slaughtering and meat packing.....	168	3,085	0.7	50,804,000	3.5	6,457,000	1.1	74.3	40.4	68.0	39.2
Flour-mill and gristmill products.....	673	2,585	0.6	48,093,000	3.4	6,740,000	1.1	17.7	16.5	28.9	2.7
Printing and publishing.....	1,655	15,756	3.5	41,657,000	2.9	29,753,000	4.8	33.0	31.4	31.4	34.3
Automobiles, including bodies and parts.....	75	12,130	2.7	38,839,000	2.7	20,317,000	3.3	510.9	4,284.8	434.0	4,376.5
Lumber and timber products.....	1,390	13,456	3.0	34,597,000	2.4	14,625,000	2.4	5.1	0.3	-3.7	-3.2
Boots and shoes, including cut stock and findings.....	72	16,026	3.6	31,551,000	2.2	12,679,000	2.1	22.6	41.0	18.0	54.9
Tobacco manufactures.....	1,146	12,631	2.8	28,907,000	2.0	16,832,000	2.7	41.1	20.6	29.0	14.4
Cars and general shop construction and repairs by steam-railroad companies.....	71	20,728	4.6	28,690,000	2.0	14,424,000	2.4	33.9	65.1	28.8	59.8
Liquors, malt.....	105	4,356	1.0	25,332,000	1.8	18,769,000	3.1	17.2	19.0	19.8	12.2
Clothing, men's, including shirts.....	342	9,950	2.2	24,869,000	1.7	11,049,000	1.9	28.5	11.7	27.0	20.0
Bread and other bakery products.....	1,497	5,972	1.3	23,007,000	1.6	9,341,000	1.5	47.1	58.7	41.9	48.6
Carriages and wagons and materials.....	407	8,815	2.0	21,949,000	1.5	10,535,000	1.7	-8.6	5.3	-5.5	4.9
Pottery, terra-cotta, and fire-clay products.....	186	16,519	3.7	21,173,000	1.5	14,712,000	2.4	14.1	56.5	7.2	59.2
Clothing, women's.....	153	8,843	2.0	19,493,000	1.4	9,202,000	1.5	52.2	64.7	52.5	81.6
Copper, tin, and sheet-iron products.....	221	6,598	1.5	13,086,000	1.3	7,464,000	1.2	102.7	75.1	83.3	87.6
Electrical machinery, apparatus, and supplies.....	115	8,073	1.8	18,777,000	1.3	11,551,000	1.9	70.4	69.4	82.8	99.6
Soap.....	44	1,774	0.4	17,077,000	1.2	5,416,000	0.9	44.8		59.5	
Paper and wood pulp.....	47	4,673	1.0	16,965,000	1.2	6,067,000	1.0	54.8	67.5	26.2	73.3
Furniture and refrigerators.....	228	8,232	1.8	16,259,000	1.1	9,017,000	1.5	17.6	46.3	8.9	51.3
Stoves and furnaces, including gas and oil stoves.....	102	7,274	1.6	15,358,000	1.1	9,058,000	1.5	50.7		46.4	
Agricultural implements.....	55	5,997	1.3	14,440,000	1.0	8,121,000	1.3	12.0	-7.8	12.8	-9.0
Glass.....	45	10,159	2.3	14,358,000	1.0	9,070,000	1.6	59.1	98.5	56.2	87.9
Paint and varnish.....	87	1,535	0.3	13,617,000	1.0	5,047,000	0.8	59.6	27.2	88.7	3.3
Liquors, distilled.....	17	374	0.1	12,011,000	0.8	9,497,000	1.5	-24.8	28.4	-24.4	14.2
Coffee and spice, roasting and grinding.....	39	762	0.2	11,224,000	0.8	2,947,000	0.5	12.7	70.2	26.4	104.4
Petroleum, refining.....	10	1,659	0.4	10,754,000	0.8	2,669,000	0.4	-1.8	30.4	-20.6	48.1
Leather, tanned, curried, and finished.....	36	1,884	0.4	10,128,000	0.7	2,408,000	0.4	55.5	25.7	17.4	45.7

¹ Percentages are based on figures in Table I; a minus sign (-) denotes decrease. Where the percentages are omitted, comparable figures can not be given.

INDUSTRY.	Number of establishments.	WAGE EARNERS.		VALUE OF PRODUCTS.		VALUE ADDED BY MANUFACTURE.		PER CENT OF INCREASE. ¹			
		Average number.	Per cent distribution.	Amount.	Per cent distribution.	Amount.	Per cent distribution.	Value of products.		Value added by manufacture.	
								1904-1909	1899-1904	1904-1909	1899-1904
Butter, cheese, and condensed milk.....	325	1,067	0.2	\$9,690,000	0.7	\$2,005,000	0.3	111.0	20.6	132.1	14.6
Brick and tile.....	517	7,466	1.7	9,358,000	0.7	7,154,000	1.2	31.1	54.1	30.0	50.8
Tin plate and terneplate.....	4	676	0.2	7,889,000	0.5	794,000	0.1	68.7	28.4	88.7	6.4
Chemicals.....	33	1,132	0.3	7,742,000	0.5	2,994,000	0.5	114.4	26.9	112.0	26.6
Woolen, worsted, and felt goods, and wool hats.....	20	2,566	0.6	7,690,000	0.5	3,074,000	0.5	55.1	23.2	31.9	34.0
Confectionery.....	114	2,493	0.6	7,307,000	0.5	3,218,000	0.5	99.4	48.0	68.6	43.7
Brass and bronze products.....	82	2,232	0.5	6,572,000	0.5	3,039,000	0.5	16.5	40.5	3.4	80.7
Cars, steam-railroad, not including operations of railroad companies.....	6	2,282	0.5	6,451,000	0.4	2,256,000	0.4	60.9	152.2	41.9	134.8
Hosiery and knit goods.....	39	3,149	0.7	6,433,000	0.4	2,582,000	0.4	58.7	47.6	34.4	63.4
Paper goods, not elsewhere specified.....	28	2,040	0.5	6,307,000	0.4	2,873,000	0.5	53.8	32.8	66.1	40.8
Sewing machines, cases, and attachments.....	4	3,831	0.9	5,972,000	0.4	3,454,000	0.6	20.5	52.2	-24.4	54.6
Patent medicines and compounds and druggists' preparations.....	261	905	0.2	5,859,000	0.4	3,971,000	0.6	12.1	103.3	16.8	121.6
Safes and vaults.....	10	2,014	0.5	5,488,000	0.4	3,326,000	0.5	41.2	46.1	46.5	47.1
Cutlery and tools, not elsewhere specified.....	70	2,820	0.6	5,036,000	0.4	3,386,000	0.6	-9.3	19.4	-17.2	40.4
Leather goods.....	86	1,890	0.4	4,939,000	0.3	2,080,000	0.3	3.8	38.3	-13.0	36.0
Canning and preserving.....	107	2,009	0.4	4,660,000	0.3	1,568,000	0.3	93.8	38.1	110.4	41.1
Fertilizers.....	27	841	0.2	4,485,000	0.3	1,903,000	0.3	6.6	153.9	-2.7	177.9
Musical instruments, pianos and organs and materials.....	30	1,841	0.4	3,926,000	0.3	2,004,000	0.3	-20.9	59.0	-23.4	62.5
Marble and stone work.....	193	2,012	0.5	3,847,000	0.3	2,397,000	0.4	70.4	51.5	60.6	34.6
Boxes, fancy and paper.....	46	2,530	0.6	3,635,000	0.3	1,704,000	0.3	51.1	-23.0	106.0	17.3
Oil, lincsed.....	4	213	(²)	3,627,000	0.3	546,000	0.1	177.5	22.8	123.2	27.6
Gas and electric fixtures and lamps and reflectors.....	56	1,437	0.3	3,563,000	0.2	1,786,000	0.3	-1.2	36.3	-18.3	26.5
Coverage and wooden goods, not elsewhere specified.....	113	1,663	0.4	3,516,000	0.2	1,300,000	0.2	135.5	79.8	128.3	13.8
Mattresses and spring beds.....	38	961	0.2	3,307,000	0.2	1,625,000	0.3	-36.0	22.4	-35.0	13.8
Gas, illuminating and heating.....	38	666	0.1	3,080,000	0.2	2,253,000	0.4	21.3	40.1	28.9	45.1
Coffins, burial cases, and undertakers' goods.....	24	1,245	0.3	3,061,000	0.2	1,737,000	0.3	34.1	25.7	22.9	57.4
Flags, banners, regalia, society badges, and emblems.....	13	1,262	0.3	3,026,000	0.2	1,517,000	0.2	303.8	248.2	225.1	340.8
Pumps, not including steam pumps.....	20	897	0.2	2,747,000	0.2	1,476,000	0.2	360.4	8.8	317.2	37.5
Millinery and lace goods.....	31	1,357	0.3	2,744,000	0.2	1,285,000	0.2	-16.1	0.9	1.6	15.8
Cordage and twine and jute and linen goods.....	8	791	0.2	2,728,000	0.2	744,000	0.1	58.2	110.4	35.3	168.3
Bags, paper.....	8	557	0.1	2,393,000	0.2	755,000	0.1	121.7	-74.6	112.7	-63.4
Bicycles, motorcycles, and parts.....	6	942	0.2	2,308,000	0.2	1,242,000	0.2	86.5	108.7	84.4	107.9
Ice, manufactured.....	97	892	0.2	2,270,000	0.2	1,706,000	0.3	15.4	130.8	32.0	162.2
Firearms and ammunition.....	5	813	0.2	2,215,000	0.2	924,000	0.2	6.0	27.4	26.0	16.4
Clocks and watches, including cases and materials.....	9	1,456	0.3	1,981,000	0.1	1,455,000	0.2	6.9	239.8	13.4	147.2
Cars, street-railroad, not including operations of railroad companies.....	4	734	0.2	1,955,000	0.1	861,000	0.1	44.6	86.6	20.4	174.7
Ink, printing.....	8	183	(²)	1,907,000	0.1	1,098,000	0.2	54.7	42.8	42.0	23.2
Salt.....	8	648	0.1	1,807,000	0.1	717,000	0.1	-6.7	38.6	8.3	2.0
Explosives.....	11	358	0.1	1,719,000	0.1	615,000	0.1	883.1	-30.9	600.7	-24.5
Cars and general shop construction and repairs by street-railroad companies.....	49	1,318	0.3	1,691,000	0.1	890,000	0.1	21.4	27.4	27.4	.....
Lime.....	39	1,273	0.3	1,620,000	0.1	1,022,000	0.2	189.7	-42.9	197.6	-46.5
Grindstones.....	9	1,277	0.3	1,498,000	0.1	1,113,000	0.2	-2.9	.....	-15.1	.....
Cement.....	9	887	0.2	1,465,000	0.1	827,000	0.1	209.0	.....	215.1	.....
Artificial stone.....	209	802	0.2	1,378,000	0.1	879,000	0.1	28.7	.....	-33.0	.....
Butter, reworking.....	5	47	(²)	1,356,000	0.1	128,000	(²)	.....	.....	.....	.....
Liquors, vinous.....	29	149	(²)	1,304,000	0.1	586,000	0.1	-2.3	60.5	-9.0	72.7
Shoddy.....	4	438	0.1	1,257,000	0.1	515,000	0.1	1.5	-16.2	77.0	-27.4
Jewelry.....	35	356	0.1	1,255,000	0.1	636,000	0.1	92.2	-24.4	50.0	21.5
Dairymen's, poulterers', and apiarists' supplies.....	18	479	0.1	1,149,000	0.1	622,000	0.1	34.9	.....	43.6	.....
Beltng and hose, leather.....	8	107	(²)	1,080,000	0.1	285,000	(²)	43.4	-9.9	40.4	2.5
Umbrellas and canes.....	15	287	0.1	1,005,000	0.1	398,000	0.1	20.6	67.9	15.4	72.5
Wall plaster.....	23	259	0.1	935,000	0.1	501,000	0.1	-9.8	.....	-23.5	.....
Coke.....	4	246	0.1	851,000	0.1	211,000	(²)	228.6	1.6	137.1	-23.9
Hats and caps, other than felt, straw, and wool.....	25	406	0.1	804,000	0.1	382,000	0.1	25.2	-30.1	3.2	14.2
Boxes, cigar.....	31	531	0.1	711,000	(²)	351,000	0.1	6.3	3.7	19.0	-3.3
Blackng and cleansing and polishing preparations.....	49	103	(²)	672,000	(²)	375,000	0.1	342.1	-3.2	316.7	(³)
Models and patterns, not including paper patterns.....	74	441	0.1	670,000	(²)	511,000	0.1	73.6	-5.2	55.8	-0.9
Show cases.....	14	349	0.1	668,000	(²)	361,000	0.1	-10.8	296.3	-17.0	302.8
Screws, machine.....	6	324	0.1	598,000	(²)	420,000	0.1	-24.6	.....	-14.6	.....
Photo-engraving.....	20	277	0.1	576,000	(²)	467,000	0.1	79.4	33.4	63.9	54.1
All other industries.....	1,586	53,162	11.9	185,872,000	12.9	82,608,000	13.5	.....	.....	.....	.....

¹ Percentages are based on figures in Table I; a minus sign (-) denotes decrease. Where the percentages are omitted, comparable figures can not be given.
² Less than one-tenth of 1 per cent. ³ Value added by manufacture the same both years.

It should be borne in mind, in considering this table, that the value of products in some of the industries involves a certain amount of duplication, due to the use of the product of one establishment in the industry as material for another establishment.

The foregoing table specifies 90 industries or industry groups which had in 1909 a product in excess of \$500,000 in value. Of these industries there are 4 whose product exceeds \$50,000,000 in value; 8, with

a product between \$25,000,000 and \$50,000,000 in value; and 18, with a product between \$10,000,000 and \$25,000,000 in value, making an aggregate of 30 industries each of which had a product exceeding \$10,000,000 in value. Mention is also made of 14 other industries with a product between \$5,000,000 and \$10,000,000 in value; 37, with a product of \$1,000,000 to \$5,000,000 in value; and 9, with a product between \$500,000 and \$1,000,000 in value..

Of the industries included under the head of "All other industries," rubber goods, "not elsewhere specified," which covers the manufacture of rubber tires, clothing, mats, type, springs, tubing, brushes, bands, etc., is the most important. It is shown separately for 1909 in Table II, page 984, but comparative statistics for the different census years can not be given on account of changes in classification. The classification as used at the census of 1904 was "Rubber and elastic goods," but in 1909 the same classes of establishments were distributed and included with other establishments under two headings: "Rubber goods, not elsewhere specified," and "Suspenders, garters, and elastic woven goods," the latter being a subclass of men's furnishing goods. A total of 37 establishments in the state were engaged primarily during 1909 in the manufacture of rubber goods, employing an average of 10,382 wage earners and turning out products valued at \$53,911,000. These figures represent 2.3 per cent of the wage earners and 3.7 per cent of the products reported for all industries in the state combined. This industry ranked fourth in 1909, as measured by value of products, among the industries in the state, having grown decidedly during recent years, mainly on account of the increased demand for rubber tires, the value of which represented over one-half of the total value of products reported for the industry.

In addition to the industries presented separately in the foregoing table and the manufacture of rubber goods, there are 34 important industries in the state which had a value of product in 1909 in excess of \$1,000,000, distributed as follows: Twenty-nine, with \$1,000,000 but less than \$5,000,000; 3, with \$5,000,000 but less than \$10,000,000; and 2, with \$10,000,000 and over.¹ These industries are included under the head of "All other industries" in the table, in some instances because the operations of individual establishments would be disclosed if they were shown separately; in others, because the returns do not properly present the true condition of the industry, for the reason that it is more or less interwoven with one or more industries of similar character; and for still others, because comparative statistics can not be presented for either 1904 or 1899 on account of changes in classification or because such figures would disclose the operations of individual establishments. However, for several of these industries, namely, the manufacture of babbitt

¹ These industries are:

Awnings, tents, and sails.
Babbitt metal and solder.
Bags, other than paper.
Belting and hose, woven and rubber.
Brooms.
Brushes.
Carriages and sleds, children's.
Cash registers and calculating machines.
Clothing, horse.
Cordials and sirups.
Flavoring extracts.
Food preparations.
Furnishing goods, men's.
Galvanizing.
Grease and tallow.
House-furnishing goods, not elsewhere specified.
Iron and steel, bolts, nuts, washers, and rivets, not made in steel works or rolling mills.

Iron and steel forgings.
Iron and steel pipe, wrought.
Locomotives, not made by railroad companies.
Matches.
Mineral and soda waters.
Oil, cottonseed, and cake.
Ollcloth and linoleum.
Roofing materials.
Scales and balances.
Shipbuilding, including boat building.
Signs and advertising novelties.
Stationery goods, not elsewhere specified.
Waste.
Wire.
Wirework, including wire rope and cable.
Wood, turned and carved.

metal and solder, woven and rubber belting and hose, brooms, brushes, men's furnishing goods, shipbuilding, including boat building, and the manufacture of signs and advertising novelties, the statistics for 1909 are presented separately in Table II, page 984.

The first 11 industries noted in the preceding table represent about one-half of the gross value of manufactured products in the state, but there are a large number which are of considerable importance. Furthermore, it will be seen from Table II that there is a wide diversity in the manufacturing activities of the state, since of the 264 classifications used for compiling statistics of manufactures for 1909 in the United States, 218 were represented in Ohio. The leading products of the state for which comparable figures are presented are those of steel works and rolling mills, foundries and machine shops, blast furnaces, and slaughtering and meat-packing establishments. Fourteen industries or groups of industries important in Ohio call for special consideration.

Iron and steel.—The steel works and rolling mills and the blast furnaces rank first and third, respectively, among the industries of the state. With these may be grouped, for convenience of presentation, the tin-plate and terneplate industry. Combined, the three allied industries gave employment in 1909 to an average of 46,557 wage earners, and turned out products valued at \$289,368,000, or 10.4 per cent and 20.1 per cent of the respective totals for all manufactures in the state. These figures also represent an increase over 1899 in the number of wage earners of 12,183, or 35.4 per cent, and in the value of products of \$144,409,000, or 99.6 per cent. The classification "Steel works and rolling mills" includes establishments engaged in the manufacture of steel and the hot rolling of iron and steel. It also includes the making of forgings and castings and the manufacture of rolled iron and steel into more highly finished forms when conducted as a part of the rolling-mill operations, as well as the few forges and bloomeries which are still extant. Blast furnaces include establishments engaged in the manufacture of pig iron from the ore.

The plating of sheet metal with tin or with terne mixture (an alloy of lead and tin) is treated as a separate industry, notwithstanding the fact that nearly all of the establishments so engaged roll their plates. The tin-plate and terneplate departments of the steel works and rolling mills, however, have been treated as separate establishments. Measured by value of products, Ohio ranks second among the states of the Union in the combined industries, and also in each of the two leading branches, and third in tin plate and terneplate, contributing \$197,780,000, or 20.1 per cent of the total value reported in 1909 for all steel works and rolling mills in the United States; \$83,699,000, or 21.4 per cent of the total for all blast furnaces; and \$7,889,000, or 16.4 per cent of the total for all tin-plate and terneplate mills. In the value of products each of the three industries showed remark-

able gains from 1899 to 1909, the largest percentage of increase, 107.3 per cent, being shown for blast furnaces. Ohio is not important in the production of iron ore, but the output of the great ore mines of the Lake Superior region is handled largely at the state's lake ports and the necessary coke required for the operation of blast furnaces is readily procurable from the near-by Connellsville (Pa.) ovens.

Foundry and machine-shop products.—Products of great diversity enter into the group of foundry and machine-shop products, which includes not only the output of general foundries and machine shops, but also that of establishments engaged in the manufacture of bells, gas machines and gas and water meters, hardware, plumbers' supplies, steam fittings and heating apparatus, structural ironwork, and cast-iron and cast-steel pipe, all of which, with the exception of the last named, were shown under separate headings at the census of 1904. The foundry and machine-shop industry in its broadest sense is of even greater importance in the state than is indicated by the statistics placed under this specific title, for the reason that some machine shops manufacture a special product, such as locomotives, electrical machinery, stoves and furnaces, cash registers and calculating machines, and sewing machines, which are assigned to other classifications. A number of the most important establishments included under this head were engaged in the manufacture of machinery and appliances for handling coal, ore, dirt, and stone, and the manufacture of steam boilers, air and gas compressors and pumping machinery, cast-iron pipe and fittings, and structural and ornamental ironwork. The foundry and machine-shop industry gave employment to an average of 64,817 wage earners in 1909, which was 14.5 per cent of the total reported for all manufactures, and was the largest number shown for any of the industries specified in the table. The total value of products, \$145,837,000, in 1909 was \$42,124,000, or 40.6 per cent, more than that reported in 1904. Ohio is the third state of the Union in manufactures of this class.

Slaughtering and meat packing.—This classification includes establishments doing wholesale slaughtering and meat packing and those engaged in the manufacture of sausage only. It does not include the numerous slaughterhouses killing for the retail trade, which slaughter a large number of animals. The earliest packing houses in the state were flatboats on the Ohio River, and, as early as 1803 beef and pork were shipped from Cincinnati to New Orleans.¹ The pioneer establishment of the western packing industry, as now understood, was founded in Cincinnati about 1818.² Cincinnati has long been the chief center of the slaughtering and meat-packing industry in the state, but the proportion of the total value of such products for the state which this city contributed

has been growing smaller during the last decade, being 49.9 per cent in 1899, 46.3 per cent in 1904, and 38 per cent in 1909. Cleveland ranked second, with products in 1909 valued at \$17,192,000, or 33.8 per cent of the total for the industry in the state. The value of products for this industry in Ohio increased from \$20,768,000 in 1899 to \$29,155,000 in 1904, and \$50,804,000 in 1909, when the total was \$30,036,000, or 144.6 per cent, greater than in 1899. The percentages of increase during the five-year period 1904-1909 in value of products and value added by manufacture were nearly twice as great as during the preceding five-year period, 1899-1904. Of the 158 establishments reported for the industry as a whole in 1909, 68 were engaged in both wholesale slaughtering and meat packing, 69 in slaughtering only, and 21 in the manufacture of sausage only, the value of the output of these three branches representing 83.4 per cent, 14.6 per cent, and 2 per cent, respectively, of the total value for the combined industry. For the last two censuses Ohio has ranked eighth among the states in this industry, having risen from ninth place in 1899.

Flour-mill and gristmill products.—The statistics for all merchant mills grinding wheat, rye, buckwheat, corn, or other grain are included in this classification. It does not, however, include factories making fancy cereals or other food preparations as a chief product or mills doing custom grinding exclusively, the statistics for the latter mills being presented separately on page 968. Flour and grist milling is one of the oldest industries in Ohio, flour having been sent to New Orleans from this state as early as 1803.¹ Owing to the large quantities of cereals raised in Ohio and its close proximity to the other great grain-growing states, this industry has retained its prominence among the manufacturing industries of the state. As early as 1849 there were 1,062 flour mills and gristmills in the state and the total output was valued at \$14,372,000. In 1899 the value of the output had reached \$35,078,000, an increase for the 50 years of \$20,706,000, or 144.1 per cent. The value of flour-mill and gristmill products was \$40,856,000 in 1904 and \$48,093,000 in 1909, representing an increase of \$5,778,000, or 16.5 per cent, for the five-year period 1899-1904, and one of \$7,237,000, or 17.7 per cent, for the five-year period 1904-1909. Notwithstanding these gains, the rank of Ohio among the states in this industry, as measured by value of products, dropped from third place in 1899 to fourth place in 1904 and to fifth place in 1909.

Clothing.—While neither the manufacture of men's clothing nor of women's clothing is among the first twelve industries of Ohio, the two industries considered together had a combined output for 1909 valued at \$44,362,000, which was more than that reported for printing and publishing, the sixth industry presented separately in the preceding table.

¹ The Journal of a Tour into the Territory Northwest of the Allegheny Mountains in the year 1803, by T. M. Harris, p. 146.

² Philip D. Armour, in One Hundred Years of American Commerce, vol. 2, p. 383.

The increase in value of products from 1904 to 1909 was \$12,212,000, or 38 per cent, and that from 1899 to 1904, \$7,065,000, or 28.2 per cent. In 1849 Ohio, with a total of \$2,765,232, which includes the value of the output for custom tailoring, dressmaking, and repairing establishments, was the fourth state in the Union in the manufacture of clothing, as measured by value of products. At the census of 1889, when the first attempt was made to segregate the statistics in order to show separately the establishments manufacturing clothing under the factory system, the output was valued at \$25,525,751, Ohio was the fifth state of the United States in the combined industries, but it advanced to fourth place in 1899 and has retained this position at each subsequent census. The value of men's clothing has represented more than half of the total value of all clothing manufactured at each census year, but since 1889 the proportion which was contributed by this branch has decreased constantly. The manufacture of women's clothing has increased rapidly; the total value was \$4,352,000 in 1889, \$7,773,000 in 1899, and \$19,493,000 in 1909.

Printing and publishing.—Under this head are included job-printing establishments, the printing and publishing of books, newspapers and periodicals, and of music, bookbinding and blank-book making, steel engraving, and lithographing. Of the 1,655 establishments reported in 1909, a larger number than was shown for any other single industry in the state (890) were engaged primarily in printing and publishing newspapers and periodicals and employed an average of 6,462 wage earners and reported products valued at \$21,453,000. These totals represent increases over the corresponding figures for 1904 of 4.3 per cent in wage earners and 30.7 per cent in the value of products. The industry as a whole shows an advance of 33 per cent in the value of products from 1904 to 1909, which was slightly more than the relative gain shown for the preceding five-year period. The absolute increase in the value of products from 1904 to 1909 was \$10,330,000, and from 1899 to 1904 was \$7,494,000.

Automobiles, including bodies and parts.—This classification includes, besides the articles mentioned in the industry designation, the manufacture of automobile accessories, but this latter branch of the industry covers a wide field and is to a considerable extent interwoven with other industries. A number of foundries and machine shops incidentally manufactured automobile accessories and parts, and a number of establishments classified under the head of "Rubber goods, not elsewhere specified," manufactured automobile tires. Furthermore, many electrical attachments and motors for automobiles were made in establishments engaged in the general manufacture of electrical machinery, apparatus, and supplies, and considerable quantities of brass fixtures used in connection with the manufac-

ture of automobiles were produced in establishments engaged primarily in the manufacture of brass and bronze products. The decided growth from 1904 to 1909 of each of these three industries was due in large measure to the remarkable development in the automobile industry. In 1899 there were only three establishments in the state engaged in the manufacture of automobiles, and the total value of their products for that year was only \$145,000. In 1904, 22 establishments, with products valued at \$6,358,000, were reported, while in 1909 there were 75 establishments the output of which was valued at \$38,839,000. Measured by value of products, Ohio was, in 1899, the sixth state in the Union in the manufacture of automobiles, but advanced to second place in 1904, a position which was retained in 1909. The proportion which Ohio contributed of the total value of products reported for the automobile industry in the United States was 3.1 per cent in 1899, 21.2 per cent in 1904, and 15.6 per cent in 1909.

Liquors.—The manufacture of distilled, malt, and vinous liquors forms a very important group of industries in Ohio. The combined output for 1909 was valued at \$38,647,000, and \$28,852,000 (including \$12,560,000 for internal-revenue tax) was added to the materials by the process of manufacture. These figures, however, represent decreases over the corresponding totals for 1904 of seven-tenths of 1 per cent and one-tenth of 1 per cent, respectively. Of the three industries comprising this group, the manufacture of malt liquors was by far the most important, the total output being valued at \$25,332,000 in 1909, an increase over 1904 of \$3,711,000, or 17.2 per cent. This gain was not large enough to overcome the losses of the other two industries in this group in respect to value of products. The value of distilled liquors was \$12,011,000 in 1909 and \$15,977,000 in 1904, showing a decrease of \$3,966,000, or 24.8 per cent, for the five-year period. The value of vinous liquors, the least important of the liquor group, was \$1,304,000 in 1909, showing a decrease compared with 1904 of \$31,000, or 2.3 per cent. In 1909 Ohio ranked sixth among the states of the Union in the manufacture of malt liquors, fifth in distilled liquors, and third in vinous liquors.

Lumber and timber products.—This industry includes the timber plants whose chief products are logs, as well as the sawmills, shingle mills, and planing mills which produce rough and dressed lumber, lath, shingles, cooperage stock, sash, doors, blinds, interior finishing, and other millwork, and also wooden packing-box factories. The industry as a whole has been practically at a standstill in Ohio during the last decade, 1899-1909, the total output for 1909 being valued at \$34,597,000, compared with \$32,926,000 for 1904 and \$32,812,000 for 1899. The timber and sawmill branch of the industry shows quite a decline for this 10-year period, which, however, was offset by the increased production of the planing mills and

the packing-box factories. The 1,390 establishments reported in 1909 for the entire industry were distributed as follows: 411 independent planing mills, reporting 54.1 per cent of the value of products; 900 saw-mills and timber plants, reporting 37.2 per cent; and 79 packing-box factories, reporting 8.7 per cent. The corresponding percentages of the total value of products contributed by these three branches in 1899 were 33.7, 60.3, and 6, respectively.

Boots and shoes, including cut stock and findings.—Of the 72 establishments included in this classification in 1909, 63 were engaged primarily in the manufacture of boots and shoes, 5 in the production of boot and shoe findings, and 4 in the manufacture of boot and shoe cut stock. There is some overlapping between these three branches, which makes it desirable to combine them in presenting these statistics. In 1849 there were 805 establishments reported for this industry in Ohio, with an output valued at \$2,328,896, but it was not until recent years that the industry showed its most marked development. In 1899 the output of this class of establishments was valued at \$18,246,000, in 1904 it was \$25,735,000, and in 1909 it reached \$31,551,000, an increase for the decade of \$13,305,000, or 72.9 per cent, and for the more recent five-year period, 1904–1909, of \$5,816,000, or 22.6 per cent. Of the total value of products reported for the industry in the United States, these figures represented 6.3 per cent in 1899, 7.2 per cent in 1904, and 6.2 per cent in 1909, Ohio ranking fourth, third, and fifth, respectively, at the three censuses.

Clay products.—The total output of pottery, terra-cotta, and fire-clay products and brick and tile reported for 1909 was valued at \$30,531,000, an increase over 1904 of \$4,844,000, or 18.9 per cent, and over 1899 of \$14,050,000, or 85.2 per cent. The importance of Ohio in the manufacture of clay products is due very largely to the development of its extensive deposits of suitable clays. In 1909 Ohio ranked first among the states of the Union in this industry, contributing 18.1 per cent of the total value of products in the United States, the proportion for 1904 having been 19 per cent and for 1899, 17.3 per cent. The manufacture of pottery, terra-cotta, and fire-clay products, in which Ohio outranks all other states, is by far the most important branch of the clay manufactures in the state, the value of the output having been 69.3 per cent of the total for the combined industries in 1909, 72.2 per cent in 1904, and 71.9 per cent in 1899. There were 248 such establishments in the state in 1899, and the total output was valued at \$11,851,000, whereas in 1904 there were 205, with products valued at \$18,551,000, and in 1909, 186, with products valued at \$21,173,000. In the manufacture of brick and tile Ohio ranks second among the states, a position which it has held for a number of years.

Tobacco manufactures.—The statistics included in this industry include those for the establishments en-

gaged in the manufacture of chewing and smoking tobacco and snuff, as well as the cigar and cigarette factories. The industry in the state, if measured by number of plants, seems to be very largely confined to the latter class of establishments, for of the 1,146 reported for the entire industry in 1909, 1,124 were cigar and cigarette factories, but the value of their output represented only about half of the total. For the industry as a whole, the total value of the product in 1909 was \$28,907,000, an increase over 1904 of \$8,418,000, or 41.1 per cent, the absolute gain being more than double that for the preceding five-year period. Ohio ranked fifth in 1909, when measured by value of products, among the states of the Union in this class of manufacture.

Cars and general shop construction and repairs by steam-railroad companies.—The statistics for this industry represent the work done in car shops by steam-railroad companies, and exclude minor repairs in roundhouses. The operations consist almost exclusively of repairs to rolling stock and equipment. Although the number of establishments decreased from 91 in 1899 to 71 in 1909, chiefly through the elimination of a few roundhouses which were included in the prior census, the value of the work performed increased from \$12,975,000 to \$28,690,000 during that period. The growth of the industry, however, as measured by the value of products, during the five years 1904–1909, was slightly less than during the preceding five-year period. In 1909 employment was given to an average of 20,728 wage earners, this being the third largest number reported by any of the industries of the state specified in the table, and representing an increase over the number reported in 1899 of 9,194, or 79.7 per cent.

Carriages and wagons and materials.—This classification includes establishments which made five or more horse-drawn vehicles during the year, as well as those engaged in the manufacture of carriage or wagon bodies, tops, and other parts and accessories. In contrast to the great increase noted in the automobile industry from 1904 to 1909, there has been a decline in the manufacture of carriages and wagons during the same period. While the value of products of this industry increased from \$22,803,000 in 1899 to \$24,003,000 in 1904, it decreased to \$21,949,000 in 1909, a loss of 8.6 per cent in the last five years. As this decrease was general throughout the country, Ohio retained first place among the states of the Union in this class of manufactures.

In the table on pages 934 and 935 statistics are presented for five other industries which, though not among the leading ones of the state, are noteworthy in that Ohio ranks first among the states in each when measured by the value of products. These industries, together with the percentage contributed by Ohio in 1909 of the total value for each in the United States, are: Stoves and furnaces, including gas and oil stoves, 19.5 per cent; safes and vaults, 64.6 per cent; flags,

banners, regalia, society badges, and emblems, 37.3 per cent; pumps, not including steam pumps, 49.2 per cent; and grindstones, 88.7 per cent. Ohio holds second place among the states in the manufacture of glass; sewing machines and attachments; mattresses and spring beds; coffins, burial cases, and undertakers' goods; bicycles, motorcycles, and parts; street-railroad cars; printing ink; lime; and machine screws.

The rank of the industries when measured by value added by manufacture differs considerably from the rank by value of products, which is the order in which they are shown in the table on pages 934 and 935. Of all the industries listed in the table, only five hold the same position when ranked according to the value added by manufacture. Noticeable changes in rank are found in the case of tin plate and terneplate, which drops from thirty-third place in gross value to seventy-first place in added value; in linseed oil, which falls from fifty-first to seventy-seventh place; in slaughtering and meat packing, which drops from fourth to twenty-fifth place; and in the manufacture of flour-mill and gristmill products, which falls from fifth to twenty-fourth place. On the other hand, the manufacture of patent medicines and compounds advances from forty-second to twenty-ninth place; the manufacture of cutlery and tools, from forty-fourth to thirty-first; liquor distilling, from twenty-seventh to sixteenth; and the manufacture of safes and vaults, from forty-third to thirty-second.

The table on pages 934 and 935 also shows the percentages of increase or decrease for each industry in respect to value of products and value added by manufacture in all cases where comparative figures are presented in Table I. Several of the industries show exceptionally large percentages of increase during both of the five-year periods, while others show marked decreases. From 1904 to 1909 the largest increases in both items are shown for street-railroad repair shops; for the manufacture of automobiles; millinery and lace goods; blacking and cleansing and polishing preparations; and pumps, not including steam pumps. From 1899 to 1904 the largest gains in both items are shown for the manufacture of automobiles, including bodies and parts; show cases; pumps, not including steam pumps; street-railroad cars; musical instruments; and hosiery and knit goods.

The largest percentage of increase in value of products during the more recent five-year period was 883.1 in street-railroad repair shops, and for the preceding five-year period was 4,284.8 in the manufacture of automobiles, including bodies and parts. In value of products 15 of the 90 industries presented separately in the table show a decrease from 1904 to 1909, and 11 a decrease from 1899 to 1904, while in value added by manufacture decreases are shown for 17 industries from 1904 to 1909, and for 10 from 1899 to 1904. The largest relative decreases in value of products from 1904 to 1909 were in the manufacture of illumina-

nating and heating gas (36 per cent), and in the manufacture of distilled liquors (24.8 per cent).

Persons engaged in manufacturing industries.—The following table shows, for 1909, the distribution of the number of persons engaged in manufactures, the average number of wage earners being distributed by sex and age. It should be borne in mind, however, that the sex and age classification of the average number of wage earners in this and other tables is an estimate obtained by the method described in the Introduction.

CLASS.	PERSONS ENGAGED IN MANUFACTURES.		
	Total.	Male.	Female.
All classes.....	523,004	439,811	83,193
Proprietors and officials.....	31,213	30,341	872
Proprietors and firm members.....	14,719	14,141	578
Salariated officers of corporations.....	6,371	6,258	113
Superintendents and managers.....	10,123	9,942	181
Clerks.....	44,857	34,101	10,756
Wage earners (average number).....	446,934	375,369	71,565
16 years of age and over.....	441,690	372,694	68,996
Under 16 years of age.....	5,244	2,675	2,569

The average number of persons engaged in manufactures during 1909 was 523,004, of whom 446,934 were wage earners. Of the remainder, 31,213 were proprietors and officials and 44,857 were clerks. Corresponding figures for individual industries will be found in Table II, page 984.

The next table shows, for 1909, the percentage of proprietors and officials, clerks, and wage earners, respectively, among the total number of persons employed in manufactures. It covers all industries combined and 40 important industries individually.

Of the total number of persons engaged in all manufacturing industries, 6 per cent were proprietors and officials, 8.6 per cent clerks, and 85.5 per cent wage earners. The highest percentage of proprietors and officials shown for any industry, 51.9, was for establishments engaged in the manufacture of butter, cheese, and condensed milk. In this, as well as in the flour-mill and gristmill industry and in the manufacture of bread and other bakery products, the majority of the establishments are small, and the work is to a large extent done by the proprietors or their immediate representatives, so that the proportion of persons engaged in these industries falling into the class of proprietors and officials is very much higher than for the other industries shown separately or for all industries combined. Somewhat analogous conditions prevail in the lumber industry and in printing and publishing, in which proprietors and officials formed 13.6 per cent and 12.1 per cent, respectively, of the total number of persons engaged in each industry.

Tin-plate and terneplate mills, steam-railroad repair shops, glass factories, and steel works and rolling mills which are for the most part large establishments, show very small proportions of proprietors and officials.

INDUSTRY.	PERSONS ENGAGED IN MANUFACTURES.			
	Total number.	Per cent of total.		
		Proprietors and officials.	Clerks.	Wage earners (average number)
All industries.....	523,004	6.0	8.6	85.5
Agricultural implements.....	6,972	3.2	10.8	86.0
Automobiles, including bodies and parts.....	13,458	2.3	7.6	90.1
Boots and shoes, including out stock and findings.....	17,007	2.5	6.5	91.0
Brass and bronze products.....	2,650	6.9	8.8	84.2
Bread and other bakery products.....	8,758	20.1	11.7	68.2
Brick and tile.....	8,575	10.9	2.1	87.1
Butter, cheese, and condensed milk.....	2,494	51.9	5.3	42.8
Carrriages and wagons and materials.....	10,350	8.2	6.6	85.2
Cars and general shop construction and repairs by steam-railroad companies.....	22,102	1.5	4.7	93.8
Cars, steam-railroad, not including operations of railroad companies.....	2,477	3.4	4.5	92.1
Chemicals.....	1,346	5.7	10.2	84.1
Clothing, men's, including shirts.....	11,813	5.1	10.6	84.2
Clothing, women's.....	10,191	3.6	9.6	80.8
Coffee and spice, roasting and grinding.....	1,586	0.5	45.5	48.0
Confectionery.....	3,012	0.7	10.6	82.8
Copper, tin, and sheet-iron products.....	7,085	5.9	8.2	85.9
Electrical machinery, apparatus, and supplies.....	9,005	3.8	12.1	84.0
Flour-mill and gristmill products.....	4,164	28.0	9.9	62.1
Foundry and machine-shop products.....	74,887	4.5	8.0	86.6
Furniture and refrigerators.....	9,449	5.7	7.2	87.1
Glass.....	10,030	1.8	2.6	95.6
Hosiery and knit goods.....	3,412	3.4	4.3	92.3
Iron and steel, blast furnaces.....	8,278	2.5	9.4	88.1
Iron and steel, steel works and rolling mills.....	41,912	1.9	6.0	92.1
Leather, tanned, carried, and finished.....	2,028	4.3	2.8	92.9
Liquors, distilled.....	434	0.7	7.1	86.2
Liquors, malt.....	5,275	7.0	10.4	82.6
Lumber and timber products.....	10,445	13.6	4.6	81.8
Paint and varnish.....	2,587	9.8	30.9	59.3
Paper and wood pulp.....	4,972	2.6	3.4	94.0
Paper goods, not elsewhere specified.....	2,264	4.2	5.7	90.1
Petroleum, refining.....	2,039	2.1	16.6	81.4
Pottery, terra-cotta, and fire-clay products.....	17,751	3.0	3.9	93.1
Printing and publishing.....	22,754	12.1	18.6	69.2
Slaughtering and meat packing.....	3,864	8.1	12.1	79.9
Soap.....	2,280	4.9	17.3	77.8
Stoves and furnaces, including gas and oil stoves.....	8,352	3.6	9.4	87.1
Tin plate and terneplate.....	742	1.3	7.5	91.1
Tobacco manufactures.....	14,081	10.3	3.7	86.0
Woolen, worsted, and felt goods, and wool hats.....	2,711	2.4	3.0	94.7
All other industries.....	120,412	6.1	9.8	84.1

Among the industries shown separately in the table, the largest proportion of wage earners, 95.6 per cent, was reported for the glass factories, while the smallest, 42.8 per cent, was for the manufacture of butter, cheese, and condensed milk. Among the industries specified, the roasting and grinding of coffee and spice shows the largest proportion of clerks, 45.5 per cent.

The next table shows, for 1909, in percentages, for all industries combined, the distribution of the average number of wage earners, by age periods, and for those 16 years of age and over by sex, calculated in the manner described in the Introduction. It also shows, for some of the important industries separately, a similar distribution of wage earners as reported for December 15, or the nearest representative day. As a means of judging the importance of the several industries the average number employed for the year is also given in each case.

For all industries combined, 83.4 per cent of the average number of wage earners were males 16 years of age and over; 15.4 per cent, females 16 years of age and over; and 1.2 per cent, children under the age of 16. The larger part of the total number of female wage earners 16 years of age and over was made up of those employed in the boot and shoe, clothing, hosiery and knit-goods, and pottery industries, printing and publishing, and

tobacco manufactures. In the manufacture of hosiery and knit goods over three-fourths of the wage earners were women 16 years of age and over; in the manufacture of men's clothing and women's clothing and in tobacco manufactures, about two-thirds; in the boot and shoe industry, over two-fifths; in printing and publishing, nearly one-fourth; and in the pottery industry, nearly one-fifth. In the manufacture of confectionery and in the woolen and worsted goods industry the proportion of female wage earners was also large, being 59.5 per cent and 59.3 per cent, respectively.

The boot and shoe, men's clothing, confectionery, glass, hosiery and knit-goods, pottery, woolen and worsted goods industries, printing and publishing, and the manufacture of copper, tin, and sheet-iron products include the larger part of the total number of wage earners under 16 years of age. Of this class of employees the largest absolute number, 552, was in the boot and shoe industry, and the largest proportion, 10.1 per cent, in the manufacture of confectionery.

INDUSTRY.	WAGE EARNERS.			
	Average number. ¹	Per cent of total.		
		16 years of age and over.		Under 16 years of age.
Male.	Female.			
All industries.....	446,934	83.4	15.4	1.2
Agricultural implements.....	5,997	99.1	0.7	0.2
Automobiles, including bodies and parts.....	12,130	98.6	1.1	0.2
Boots and shoes, including out stock and findings.....	16,026	55.5	41.0	3.4
Brass and bronze products.....	2,232	97.5	2.2	0.3
Bread and other bakery products.....	5,972	80.7	18.5	0.9
Brick and tile.....	7,466	89.3	(²)	0.7
Butter, cheese, and condensed milk.....	1,067	89.7	9.0	1.3
Carrriages and wagons and materials.....	8,815	96.8	2.7	0.6
Cars and general shop construction and repairs by steam-railroad companies.....	20,728	99.3	0.2	(²)
Cars, steam-railroad, not including operations of railroad companies.....	2,282	99.6	0.4	.....
Chemicals.....	1,132	96.4	3.6	.....
Clothing, men's, including shirts.....	9,950	30.0	66.5	3.5
Clothing, women's.....	8,843	35.0	63.6	1.3
Coffee and spice, roasting and grinding.....	762	49.7	50.1	0.1
Confectionery.....	2,493	30.4	59.5	10.1
Copper, tin, and sheet-iron products.....	6,598	78.7	16.3	5.0
Electrical machinery, apparatus, and supplies.....	8,073	67.6	31.5	0.9
Flour-mill and gristmill products.....	2,585	96.0	4.0	.....
Foundry and machine-shop products.....	64,817	98.3	1.3	0.4
Furniture and refrigerators.....	8,232	96.7	2.4	0.9
Glass.....	10,159	87.6	8.2	4.3
Hosiery and knit goods.....	3,149	18.5	76.5	7.0
Iron and steel, blast furnaces.....	7,295	100.0	(²)	.....
Iron and steel, steel works and rolling mills.....	38,586	99.2	0.8	(²)
Leather, tanned, carried, and finished.....	1,884	99.5	0.5	.....
Liquors, distilled.....	374	97.3	2.7	.....
Liquors, malt.....	4,356	99.8	0.2	(²)
Lumber and timber products.....	13,450	98.8	1.1	0.2
Paint and varnish.....	1,535	88.5	11.5	0.1
Paper and wood pulp.....	4,973	84.5	15.4	0.1
Paper goods, not elsewhere specified.....	2,040	47.8	51.5	0.7
Petroleum, refining.....	1,959	98.7	1.0	0.3
Pottery, terra-cotta, and fire-clay products.....	16,519	79.9	19.0	1.0
Printing and publishing.....	15,750	73.7	24.9	1.4
Slaughtering and meat packing.....	3,080	97.8	2.2	.....
Soap.....	1,774	74.0	24.2	1.8
Stoves and furnaces, including gas and oil stoves.....	7,274	99.5	0.3	0.2
Tin plate and terneplate.....	676	85.6	14.3	.....
Tobacco manufactures.....	12,031	32.3	66.8	0.9
Woolen, worsted, and felt goods, and wool hats.....	2,506	31.9	59.3	8.8
All other industries.....	101,286	80.2	18.3	1.5

¹ For method of estimating the distribution, by sex and age periods, of the average number in all industries combined, see Introduction.

² Less than one-tenth of 1 per cent.

In order to compare the distribution of persons engaged in manufactures in 1909 with that shown at the census of 1904 it is necessary to use the classifica-

tion employed at the earlier census. (See Introduction.) The following table makes this comparison according to occupational status:

CLASS.	PERSONS ENGAGED IN MANUFACTURES.				
	1909		1904		Per cent of increase, 1904-1909.
	Number.	Per cent distribution.	Number.	Per cent distribution.	
Total.....	523,004	100.0	417,946	100.0	25.1
Proprietors and firm members.....	14,719	2.8	13,657	3.3	7.8
Salaried employees.....	61,351	11.7	39,991	9.6	53.4
Wage earners (average number).....	446,934	85.5	364,298	87.2	22.7

Comparable figures are not obtainable for 1899. The table shows a greater percentage of increase in the salaried employees than in the two other classes.

The following table shows the average number of wage earners, according to age periods, and in the case of those 16 years of age and over according to sex, for 1909, 1904, and 1899. The averages for 1909 are estimated on the basis of the actual number reported for a single representative day. (See Introduction.)

CLASS.	AVERAGE NUMBER OF WAGE EARNERS.					
	1909		1904		1899	
	Number.	Per cent distribution.	Number.	Per cent distribution.	Number.	Per cent distribution.
Total.....	446,934	100.0	364,298	100.0	308,109	100.0
16 years of age and over.....	441,690	98.8	359,203	98.6	304,050	98.7
Male.....	372,694	83.4	303,828	83.4	258,778	84.0
Female.....	68,996	15.4	55,375	15.2	45,272	14.7
Under 16 years of age.....	5,244	1.2	5,095	1.4	4,059	1.3

This table indicates that for all industries combined there has been an increase during the 10 years in the number of children under 16 years of age employed, although in 1909 the proportion which such employees formed of all wage earners engaged in manufactures was less than in 1904. There has been little change during the decade in the proportion of male and female wage earners. In 1909 and 1904 males 16 years of age and over formed 83.4 per cent of all wage earners, as compared with 84 per cent in 1899.

Wage earners employed, by months.—The next table gives the number of wage earners employed on the 15th of each month during the year 1909, for all industries combined; it gives also the percentage which the number reported for each month is of the greatest number reported for any month. In Table II, page 984, is shown, for practically all of the important industries in the state, the largest number and also the smallest number of wage earners reported for any month. The figures are for the 15th day, or the nearest representative day, of the month.

There were no seasonal industries of importance which gave employment to large numbers of persons at certain seasons of the year only. Most of the industries showed comparatively little fluctuation throughout the year in the number of wage earners employed.

The greatest relative variation was in the foundry and machine-shop industry, in which the minimum number, 57,555, was employed in January, and the maximum number, 74,069, in December. The steel works and rolling mills had the next largest relative variation, with a minimum of 33,845 wage earners in February and 45,151 in December. For all industries combined, the smallest number, 414,278, was employed in the month of January. The number increased steadily month by month until July, when a slight decrease occurred. Thereafter the number increased constantly until in December 480,405 wage earners were employed, the largest number reported for any month. The difference between the figures for the months of greatest and of least activity was thus 66,127, or 13.8 per cent of the maximum.

MONTH.	WAGE EARNERS.		MONTH.	WAGE EARNERS.	
	Number.	Per cent of maximum.		Number.	Per cent of maximum.
January.....	414,278	86.2	July.....	435,241	90.6
February.....	421,945	87.8	August.....	448,898	93.4
March.....	432,343	90.0	September.....	465,351	96.9
April.....	432,828	90.1	October.....	474,448	93.8
May.....	436,480	90.8	November.....	476,023	99.1
June.....	444,698	92.6	December.....	480,405	100.0

Prevailing hours of labor.—In the next table wage earners have been classified according to the hours of labor prevailing in the establishments in which they are employed. In making this classification the average number of wage earners employed during the year is used, and the number employed in each establishment is classified as a total, according to the hours prevailing in that establishment, even though a few employees work a greater or less number of hours.

It is evident from the figures that for the great majority of wage earners employed in the manufacturing industries of Ohio the prevailing hours of labor range from 54 to 60 a week, only 13.7 per cent of the total being employed in establishments where the prevailing hours were less than 54 a week, and only 7.6 per cent in establishments where they were more than 60 a week.

It will be noted that for the wage earners in 33 of the 89 industries shown separately in the table the most common period of employment was a week of between 54 and 60 hours, while in 32 industries the most common period was a week of 60 hours. The largest proportion of wage earners shown in the first of these groups was for the manufacture of flags and banners and in the second for liquor distilling, the proportions being 88.8 per cent and 90.1 per cent, respectively. The majority of wage earners engaged in the manufacture of cement, and illuminating and heating gas, and in blast furnaces were employed in establishments where the prevailing hours of labor were over 72 per week, while in the manufacture of malt liquors and in photo-engraving, the prevailing hours for the greater part of the wage earners were 48 or less per week.

AVERAGE NUMBER OF WAGE EARNERS IN ESTABLISHMENTS GROUPED ACCORDING TO PREVAILING HOURS OF WORK PER WEEK.

INDUSTRY.	AVERAGE NUMBER OF WAGE EARNERS IN ESTABLISHMENTS GROUPED ACCORDING TO PREVAILING HOURS OF WORK PER WEEK.								
	Total.	48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72.	Over 72.
All Industries.....	446,934	31,977	29,296	88,915	130,852	131,853	14,484	8,714	10,843
Agricultural implements.....	5,997	195	1,294	387	2,354	1,767			
Artificial stone.....	802	34	13	170	71	514			
Automobiles, including bodies and parts.....	12,130	2	64	4,469	6,055	1,051		459	
Bags, paper.....	557			134	387	66			
Belt and hose, leather.....	107			1	54	52			
Bicycles, motorcycles, and parts.....	942			209	54	670			
Blackening and polishing preparations.....	103	42	1	33	4	22		1	
Boots and shoes, including cut stock and findings.....	16,026	190	305	2,608	9,106	8,817			
Boxes, cigar.....	531	89	84	97	139	122			
Boxes, fancy and paper.....	2,530	112	430	339	1,208	441			
Brass and bronze products.....	2,232	30	36	831	1,114	94	127		
Bread and other bakery products.....	5,972	589	149	1,007	512	3,244	299	132	40
Brick and tile.....	7,498	355	65	852	529	5,576	22		67
Butter, cheese, and condensed milk.....	1,067	64	9	27	53	401	470	11	27
Canning and preserving.....	2,009	208	18	79	149	1,555			
Carriages and wagons and materials.....	8,815	641	651	1,634	1,993	3,896			
Cars and general shop construction and repairs by steam-railroad companies.....	20,728	1,718	2,660	3,057	6,273	4,094	1,509		1,417
Cars and general shop construction and repairs by street-railroad companies.....	1,318	2		50	331	381	550		4
Cars, steam-railroad, not including operations of railroad companies.....	2,282		121	279	1,830	52			4
Cars, street-railroad, not including operations of railroad companies.....	734				488	246			
Cement.....	887	19				122			746
Chemicals.....	1,132	2		3	164	596	13	34	350
Clocks and watches, including cases and materials.....	1,456			25	173	1,258			
Clothing, men's, including shirts.....	9,950	1,300	2,023	5,428	1,090	109			
Clothing, women's.....	8,843	456	1,146	5,242	1,952	47			
Coffee and spice, roasting and grinding.....	762	46	87	133	252	244			
Coffins, burial cases, and undertakers' goods.....	1,245		255	226	640	124			
Coke.....	246	31				3	212		
Confectionery.....	2,493	322	342	280	280	1,266		3	
Cooperage and wooden goods, not elsewhere specified.....	1,663	181	476	256	269	479	2		
Copper, tin, and sheet-iron products.....	6,598	549	167	1,384	1,250	3,000			248
Cordage and twine and jute and linen goods.....	791				637	154			
Cutlery and tools, not elsewhere specified.....	2,820	40	11	118	2,007	644			
Dairymen's, poultrymen's, and apiarists' supplies.....	479			20	111	129	219		
Electrical machinery, apparatus, and supplies.....	8,073	20	1,086	2,430	3,071	1,452		14	
Explosives.....	358	19		106		233			
Fertilizers.....	841			60	26	755			
Firearms and ammunition.....	813		48	48	700	17			
Flags, banners, regalia, society badges, and emblems.....	1,262	4	5	77	1,121	65			
Flour-mill and gristmill products.....	2,585	207	53	56	66	1,571	378	253	1
Foundry and machine-shop products.....	64,817	809	2,508	11,087	28,233	21,845	314	21	
Furniture and refrigerators.....	8,232	196	345	1,266	2,660	3,765			
Gas and electric fixtures and lamps and reflectors.....	1,437	39	201	452	402	136	147		
Gas, illuminating and heating.....	666	128	2		37	2	30	8	463
Glass.....	10,159	1,797	2,279	1,726	2,561	1,139	652	65	
Grindstones.....	1,277			71	94	1,112			
Hats and caps, other than felt, straw, and wool.....	400	3	112	268	2	21			
Hosiery and knit goods.....	3,149	10	45	921	1,019	1,154			
Ice, manufactured.....	892	8			47	109			
Ink, printing.....	183		121	25		37			
Iron and steel, blast furnaces.....	7,295						606	1	6,688
Iron and steel, steel works and rolling mills.....	38,586	1,483	44	5,442	7,260	13,352	6,296	4,709	
Jewelry.....	350	28	54	231	40	3			
Leather goods.....	1,890	24	24	405	861	515		1	
Leather, tanned, curried, and finished.....	1,884	95	1	815	307	606			
Lime.....	1,273	1	10	115	27	865	48	26	181
Liquors, distilled.....	374	12		25		337			
Liquors, malt.....	4,356	2,309	1	1,479	89	471	7		
Liquors, vinous.....	149	4	2	10		133			
Lumber and timber products.....	13,456	704	358	2,802	2,238	7,348	2	4	
Marble and stone work.....	2,012	341	61	478	19	1,061	44	68	
Mattresses and spring beds.....	961	59	205	68	451	178			
Millinery and lace goods.....	1,367	432	469	346	102	8			
Models and patterns, not including paper patterns.....	441	1	151	106	152	31			
Musical instruments, pianos and organs and materials.....	1,841		3	219	782	837			
Oil, linseed.....	213						88	125	
Paint and varnish.....	1,535	53	267	198	520	497			
Paper and wood pulp.....	4,673				468	1,493	1,233	1,456	18
Paper goods, not elsewhere specified.....	2,040	40	19	853	200	923			
Patent medicines and compounds and druggists' preparations.....	905	163	167	177	311	86			
Petroleum, refining.....	1,659			480	80	1,122	19	8	
Photo-engraving.....	277	262	15						
Pottery, terra-cotta, and fire-clay products.....	16,519	2,143	2,660	3,838	1,053	6,703	117		
Printing and publishing.....	15,756	6,888	1,951	4,670	1,485	744	18		
Pumps, not including steam pumps.....	897	3	70		89	60			
Safes and vaults.....	2,014		89	217	1,617	91			
Salt.....	648	21		57	110	127	93	240	
Screws, machine.....	324			45	33	246			
Sewing machines, cases, and attachments.....	3,831			623	1,667	1,551			
Shoddy.....	438					170	268		
Show cases.....	349			42	111	191	5		
Slaughtering and meat packing.....	3,086	26	6	484	80	2,333	67	80	
Soap.....	1,774	9		30	1,209	526			
Stoves and furnaces, including gas and oil stoves.....	7,274	330	350	1,539	3,116	1,933			
Tin plate and terneplate.....	676			461	137	78			
Tobacco manufactures.....	12,631	4,327	2,431	938	2,806	2,113	10	3	3
Umbrellas and canes.....	287		48	37	193	9			
Wall plaster.....	259		5	17	13	224			
Woolen, worsted, and felt goods, and wool hats.....	2,566	2	6		1,990	568			
All other industries.....	53,209	1,754	2,617	13,598	19,032	14,742	473	809	184

Location of establishments.—The following table shows the extent to which the manufactures of Ohio are centralized in cities of 10,000 population or over. (See Introduction.) Statistics for Lakewood, a city having

over 10,000 inhabitants in 1909, are not included in the city group, but are shown in those for districts outside of cities so as to avoid disclosing the operations of individual establishments.

ITEM.	Year.	Aggregate.	CITIES HAVING A POPULATION OF 10,000 AND OVER.								DISTRICTS OUTSIDE OF CITIES HAVING A POPULATION OF 10,000 AND OVER.	
			Total.		10,000 to 25,000.		25,000 to 100,000.		100,000 and over.		Number or amount.	Percent of total.
			Number or amount.	Percent of total.	Number or amount.	Percent of total.	Number or amount.	Percent of total.	Number or amount.	Percent of total.		
Population.....	1910	4,767,121	2,130,018	44.7	345,803	7.3	393,371	8.3	1,390,830	29.2	2,637,108	55.3
	1900	4,157,645	1,512,007	36.4	305,089	7.3	241,866	5.8	965,052	23.2	2,645,538	63.6
Number of establishments.....	1909	15,138	8,765	57.9	1,366	9.0	1,208	8.0	6,191	40.9	6,373	42.1
	1899	13,868	6,990	50.4	1,299	9.4	1,034	7.5	4,657	33.6	6,878	49.6
Average number of wage earners.	1909	446,934	323,359	72.4	53,624	12.0	67,960	15.2	201,775	45.1	123,575	27.6
	1899	308,109	220,141	71.4	40,530	13.2	42,794	13.9	136,817	44.4	87,968	28.6
Value of products.....	1909	\$1,437,935,817	\$1,077,616,658	74.9	\$156,321,801	10.9	\$284,178,542	19.8	\$637,116,315	44.3	\$360,319,169	25.1
	1899	748,670,855	540,823,420	72.2	84,434,570	11.3	108,630,809	14.5	347,758,032	46.4	207,847,435	27.8
Value added by manufacture.....	1909	613,733,870	471,430,081	76.8	68,825,229	11.2	108,036,568	17.6	294,568,294	48.0	142,303,789	23.2
	1899	339,368,354	251,523,607	74.1	40,462,166	11.9	48,808,752	14.4	162,262,680	47.8	87,844,747	25.9

In 1909, 74.9 per cent of the total value of products for all manufacturing industries in the state were reported from cities having over 10,000 inhabitants, and 72.4 per cent of the average number of wage earners were employed in such cities. During the 10 years from 1899 to 1909 the industries located in cities have gained somewhat on those in the remainder of the state. It should be understood that the places which had less than 10,000 inhabitants each in 1900 but more than that number in 1910, namely, Norwood, Alliance, Elyria, Middletown, Lancaster, Bellaire, Cambridge, and Warren, are included in the 1899 statistics for the districts outside of cities. The total value of products reported for these eight cities in 1909 was \$64,845,752, or 4.5 per cent of the total value for the state. If, therefore, the statistics for these cities in 1909 were eliminated from the totals of the cities having a population of 10,000 or over and added to those having less than 10,000 inhabitants, the proportion of the aggregate value of products credited to the former group would be 70.4 per cent and that credited to the latter 29.6 per cent, which figures represent the relative proportions of the total value of manufactured products for the state contributed by the same areas that are compared in the total for the prior census.

The composition of each of the groups of cities having more than 10,000 inhabitants has been affected by changes in the population of the different cities during the decade. In 1900 Hamilton, Lima, Lorain, Newark, and Zanesville had less than 25,000 inhabitants, but during the following decade the population of each increased, so that all now belong to the group comprising cities having between 25,000 and 100,000 inhabitants. Dayton had less than 100,000 in 1900, but it so gained in population that in 1910 it was included with Cleveland, Cincinnati, Columbus, and Toledo in the group of cities having more than 100,000 inhabitants.

Although each of the three groups into which the cities having over 10,000 inhabitants are divided shows a substantial absolute increase during the 10-year period in average number of wage earners, value of products, and value added by manufacture, the group comprising the cities having between 10,000 and 25,000 inhabitants had for each of these items a smaller proportion of the total in 1909 than 1899; the group having 100,000 and over had a smaller proportion of the value of products but a larger proportion of the wage earners and value added by manufacture; while the group comprising cities having between 25,000 and 100,000 inhabitants had larger proportions in each item. These changes are, of course, due in the main to the shifting of the cities among the different groups. Of the total value of products shown in the state at the census of 1909, 10.9 per cent was reported from the 22 cities (Lakewood excluded) having between 10,000 and 25,000 inhabitants, and 19.8 per cent from the 9 cities having between 25,000 and 100,000, and 44.3 per cent from the 5 cities having more than 100,000 inhabitants.

The population in 1910 and 1900 of the 37 cities which had 10,000 or more inhabitants in 1910 is given in the following table:

CITY.	1910	1900	CITY.	1910	1900
Cleveland.....	560,663	381,768	Ashtabula.....	18,266	12,949
Cincinnati.....	363,591	325,902	Marion.....	18,232	11,862
Columbus.....	181,511	125,560	Norwood.....	16,185	6,480
Toledo.....	168,497	131,822	Lakewood.....	15,181	3,355
Dayton.....	116,577	85,333	Alliance.....	15,088	8,974
Youngstown.....	79,066	44,885	Findlay.....	14,858	17,013
Akron.....	69,067	42,728	Elyria.....	14,825	8,791
Canton.....	50,217	30,697	Chillicothe.....	14,508	12,976
Springfield.....	46,921	38,253	Massillon.....	13,879	11,044
Hamilton.....	35,279	23,914	Piquette.....	13,388	12,172
Lima.....	30,508	21,723	Middletown.....	15,083	9,215
Lorain.....	28,883	10,028	Ironton.....	13,147	11,868
Zanesville.....	28,020	28,538	Lancaster.....	13,093	8,991
Newark.....	25,404	18,157	Bellaire.....	12,946	9,912
Portsmouth.....	23,481	17,870	Marietta.....	12,923	13,348
Staubenville.....	22,361	14,349	Tiffin.....	11,894	10,989
Mansfield.....	20,768	17,040	Cambridge.....	11,327	8,241
East Liverpool.....	20,337	16,435	Warren.....	11,081	8,529
Sandusky.....	19,989	19,664			

The relative importance in the manufactures of each of the foregoing cities (except Lakewood) is shown in the following table, in which the value of products and average number of wage earners are shown separately for 1909, 1904, and 1899, as far as comparative figures are available:

CITY. ¹	AVERAGE NUMBER OF WAGE EARNERS.			VALUE OF PRODUCTS.		
	1909	1904	1899	1909	1904	1899
Cleveland ²	84,728	64,041	55,341	\$271,960,833	\$171,923,636	\$130,355,508
Cincinnati.....	60,192	58,534	54,942	194,515,692	106,059,060	141,077,997
Youngstown ²	10,498	8,095	8,579	81,270,747	46,863,307	33,908,459
Akron ²	15,831	9,626	8,259	75,158,206	33,569,243	22,015,643
Toledo ²	18,878	15,697	12,747	61,229,542	44,501,292	31,976,094
Dayton.....	21,549	17,093	14,408	60,378,376	39,596,773	31,015,293
Columbus ²	16,428	14,350	13,787	49,031,872	39,530,132	34,745,433
Lorain.....	6,697	3,102	2,238	38,989,996	14,491,091	9,481,368
Canton.....	9,994	5,938	5,149	28,582,811	10,591,143	9,575,473
Steubenville.....	4,267	4,184	1,773	21,137,127	12,369,677	4,547,049
Springfield ²	7,405	6,268	6,299	19,240,141	13,381,707	12,115,941
Hamilton ²	6,895	6,107	5,147	18,185,693	13,810,901	10,555,486
Middletown.....	2,576	1,814	1,578	16,510,785	8,537,993	5,890,095
Bellaire.....	2,597	2,183	1,928	10,091,654	10,712,438	8,337,640
Norwood.....	3,907	(6)	(6)	9,684,322	(6)	(6)
Zanesville ²	3,150	3,098	3,405	9,144,955	6,347,387	5,708,137
Mansfield.....	3,204	3,021	2,622	8,172,911	7,363,578	6,076,124
Elyria.....	2,673	1,144	638	8,004,914	2,938,460	1,221,250
Nowark.....	3,913	3,627	2,075	7,851,118	5,612,587	2,879,368
Lima ²	3,607	2,738	1,980	7,753,877	4,827,550	6,222,432
Portsmouth ²	3,728	4,072	4,153	7,276,898	6,645,112	6,638,441
Ironton.....	1,920	1,890	1,577	7,113,259	4,755,304	5,410,523
Piqua.....	2,683	2,044	1,955	6,830,972	4,035,706	5,552,184
East Liverpool.....	4,873	5,228	4,171	6,629,076	6,437,900	4,749,165
Alliance ²	2,524	1,442	1,486	6,185,429	3,546,690	3,202,730
Warren.....	1,798	1,505	1,332	5,888,174	4,414,370	4,584,003
Sandusky.....	2,118	2,323	1,453	5,948,853	4,878,593	2,833,506
Marion.....	2,619	1,721	1,171	5,669,976	3,227,712	2,426,883
Massillon.....	1,934	1,995	1,474	4,787,772	3,707,013	2,743,999
Chillicothe.....	1,674	1,853	1,119	4,545,224	3,148,890	1,615,959
Cambridge.....	1,230	1,814	1,112	4,290,560	2,440,917	2,201,573
Lancaster ²	1,532	1,695	1,039	4,074,004	3,848,280	1,905,950
Findlay.....	1,376	1,343	1,107	3,486,793	2,925,309	1,685,418
Ashtabula.....	1,471	846	373	3,458,612	1,895,454	884,413
Tiffin.....	1,632	1,645	1,233	3,254,328	2,434,502	1,901,962
Marietta.....	1,288	1,314	1,511	3,214,553	2,599,287	2,398,137

¹ Exclusive of Lakewood, to avoid disclosure of the operations of individual establishments.
² Figures do not agree with those published in 1904, because it was necessary to revise the totals in order to include data only for those establishments located within the corporate limits of the city.
³ Figures not available.

Every city for which comparative statistics are given, except Bellaire, shows an increase in the value of products from 1904 to 1909, and all but Lima, Portsmouth, Ironton, Piqua, and Warren an increase from 1899 to 1904. The percentages of increase, however, were generally greater from 1904 to 1909 than from 1899 to 1904. The greatest percentage of gain from 1904 to 1909, 174.9 per cent, was made by Elyria, due largely to gains in the chemical, foundry and machine-shop, and steel works and rolling-mill industries, and to the establishment there, since 1904, of a new factory manufacturing automobile bodies and parts. In Canton there was an increase of 169.9 per cent for the five-year period, due in part to the establishment of such new industries as steel works and rolling mills, and the manufacture of tin plate and terneplate and stamped and enameled ware. Lorain showed the next largest increase, 169 per cent, mainly on account of the increased production of steel and pig iron. Akron is still another of the cities in which the value of products more than doubled during the five-year period, the gain, 118 per cent, being due largely to the increased output of rubber goods.

Cleveland, the largest and most important city in the state, with abundant facilities for commerce by

lake and land, shows an increase from 1904 to 1909 of \$100,037,197, or 58.2 per cent, in the value of manufactured products, and of 20,687, or 32.3 per cent, in the average number of wage earners. The growing importance of Cleveland as a manufacturing city is indicated by the fact that when ranked by value of products it was fifth among the cities of the United States in 1909, seventh in 1904, and eighth in 1899. Nineteen per cent of the wage earners and 18.9 per cent of the value of products shown for the state in 1909 were reported from Cleveland. The corresponding proportions for 1904 were 17.6 per cent and 17.9 per cent, respectively. As measured by value of products, the steel works and rolling mills, with products valued at \$38,463,000, was the most important industry of the city in 1909, while foundries and machine shops, with products valued at \$37,443,000, followed very closely. The value of products stated represents 19.4 per cent and 25.7 per cent of the respective totals for these industries in the state.

The third industry in the city was the manufacture of automobiles, including bodies and parts, the output of which was valued at \$21,404,000, which represents an increase over 1904 of over 360 per cent, and forms 55.1 per cent of the value reported for the state for this industry. The increase in the value of output for the three leading industries combined represents over one-third of the total increase for all manufacturing industries in the city. Other industries of importance for which statistics are shown separately for Cleveland in Table I, page 976, are slaughtering and meat packing, with products valued at \$17,192,000; the making of women's clothing, with \$12,789,000; printing and publishing, with \$9,635,000; the manufacture of paint and varnish, with \$6,138,000; that of men's clothing, with \$5,953,000; and that of malt liquors, with \$5,124,000. Of the remaining industries shown in that table, there are seven in which Cleveland contributed over one-third of the total value of products reported for the state in 1909, namely, the manufacture of blacking and cleansing and polishing preparations, brass and bronze products, confectionery, cutlery and tools, hosiery and knit goods, millinery and lace goods, and models and patterns.

In addition to the 48 industries presented separately for Cleveland in Table I, there are 105 others, which, for various reasons, are included in the group of "All other industries." Some of these were among the most important in the city; in fact, 17 reported products in 1909 exceeding \$1,000,000 in value, which were distributed as follows: Thirteen, with \$1,000,000 but less than \$5,000,000; 3, with \$5,000,000 but less than \$10,000,000; and 1, with \$10,000,000 and over.¹

¹ These industries are:

- | | |
|---|---|
| Bags, other than paper. | Rubber goods, not elsewhere specified. |
| Bicycles, motorcycles, and parts. | Sewing machines, cases, and attachments. |
| Coffee and spice, roasting and grinding. | Shipbuilding, including boat building. |
| Flour-mill and gristmill products. | Shoddy. |
| Gas, illuminating and heating. | Tin plate and terneplate. |
| Iron and steel, blast furnaces. | Wire. |
| Iron and steel, bolts, nuts, washers, and rivets, not made in steel works or rolling mills. | Wirework, including wire rope and cable. |
| Oil, linsed. | Woolen, worsted, and felt goods, and wool hats. |
| Petroleum, refining. | |

Cincinnati, the second city of the state in population, is the center of an important industrial district, which extends into Kentucky and Indiana. Its manufactures showed an increase from 1904 to 1909 of \$28,456,642, or 17.1 per cent, in value of products and of 1,608, or 2.7 per cent, in the average number of wage earners. Notwithstanding this gain in value of products, Cincinnati dropped from eighth place in 1904 to twelfth in 1909 among the manufacturing cities of the United States. In 1909 its leading industry was slaughtering and meat packing, with products valued at \$19,320,000, which constituted 9.9 per cent of the total for all industries in the city and 38 per cent of the total for this industry in the state. Foundries and machine shops were next in importance, with an output valued at \$18,380,000, followed by the manufacture of men's clothing, valued at \$16,975,000, representing 12.6 per cent and 68.3 per cent of the totals for the respective industries in the state. The output of boots and shoes in Cincinnati, valued at \$14,999,000, constituted nearly one-half of the total for the industry in the state; that of printing and publishing, \$11,519,000, over one-fourth; that of malt liquors, \$8,874,000, over one-third; and that of distilled liquors, \$8,745,000, nearly three-fourths. Carriages and wagons manufactured in this city, valued at \$6,825,000, represented nearly one-third of the total reported for such products in the state; bread and other bakery products, valued at \$5,103,000, nearly one-fourth; leather (tanned, curried, and finished), valued at \$5,059,000, about one-half; and lumber and timber products, valued at \$5,021,000, over one-seventh.

In addition to the 50 industries presented separately for Cincinnati in Table I, there are 104 others which, for various reasons, are included in the group of "All other industries." Some of these were among the most important in the city, 6 reporting products valued at more than \$1,000,000 but less than \$2,000,000 in 1909.¹

Youngstown, the third manufacturing city of the state as measured by the value of products, showed an increase of \$34,417,440, or 73.5 per cent, from 1904 to 1909, due primarily to the increased production of steel, in the manufacture of which the city outranks all others in the state. The output of steel works and rolling mills located in Youngstown in 1909 was valued at \$50,175,000, an increase over 1904 of \$20,437,000, or 68.7 per cent, and represented 61.7 per cent of the total reported for all manufacturing industries of the city. Blast furnaces, foundries and machine shops, and the planing-mill branch of the lumber industry are also important industries in Youngstown. The value of the output of the blast furnaces far exceeds the value of the other two classes of establishments, but the statistics for such concerns can not be presented sep-

arately for Youngstown in Table I, page 982, without disclosing the operations of individual establishments. Youngstown ranked twenty-third in 1909 and thirty-second in 1904 among the manufacturing cities of the United States, as measured by value of products.

Akron was the fourth city of the state in 1909, reporting products valued at \$73,158,206, having advanced from seventh place in 1904, when \$33,559,243 was reported. It held seventh place also in 1899, when the output of its manufactures was valued at \$22,015,643. The manufacture of rubber goods is by far the leading industry, Akron being not only the most prominent center of that industry in the state but also in the United States. The manufacture of food preparations is next in importance, followed in order of value of products by printing and publishing, foundries and machine shops, flour-mill and gristmill products, automobiles, including bodies and parts, and pottery, terra-cotta, and fire-clay products. The statistics, however, for rubber goods, food preparations, flour-mill and gristmill products, and automobiles, including bodies and parts, can not be presented separately for Akron in Table I, page 973, without disclosing the operations of individual establishments.

Toledo, with products valued at \$61,229,542, was the fifth manufacturing city of the state in 1909, having dropped from fourth place in 1904, although the value of products increased from \$44,501,292, a gain of \$16,728,250, or 37.6 per cent, for the five-year period. The city owes its position in manufacturing to a comparatively wide range of industries, among which may be mentioned foundries and machine shops, with products valued at \$7,024,000; and flour-mill and gristmill products, with \$5,662,000. In 1909, 16.9 per cent of the wage earners reported for all manufacturing industries of the city were employed in foundries and machine shops. Other industries of importance in Toledo in 1909 were the roasting and grinding of coffee and spice, the blast furnaces, the manufacture of automobiles, including bodies and parts, petroleum refining, the manufacture of women's clothing, tobacco products, and linseed oil, and printing and publishing. The statistics for four of these industries—the first three named and linseed oil—could not be presented separately for Toledo in Table I, page 980, without disclosing the operations of individual establishments. Ten other industries in the city each reported products in 1909 valued at more than \$1,000,000 but less than \$2,000,000.

Dayton, the sixth city in the state when ranked by value of products, holds third place in respect to average number of wage earners employed. The total value of its products was \$60,378,376 in 1909 and \$39,596,773 in 1904, an increase for the five-year period of \$20,781,603, or 52.5 per cent. The leading industry in the city in 1909 was the manufacture of cash registers and calculating machines, in which Dayton outranks all other cities of the United States. Other industries, named in order of their importance in the value of products, were foundries and machine shops,

¹ These industries are:

Babbitt metal and solder.
Coffins, burial cases, and undertakers' goods.
House-furnishing goods, not elsewhere specified.
Ink, printing.
Oil, cottonseed, and cake.
Waste.

steam-railroad car construction shops, the manufacture of automobiles, including bodies and parts, and slaughtering and meat packing. The aggregate output for 1909 for these five leading industries represented 52.9 per cent of the total for all manufacturing industries in the city. Of these five industries the statistics can not be presented separately for Dayton, since comparative data are not available for automobiles, including bodies and parts, as it is a new industry, and as separate statistics for cash registers and steam-railroad car construction shops would disclose the operations of individual establishments. There are 10 other industries in the city each of which reported products in excess of \$1,000,000, the most important being the roasting and grinding of coffee and spice, the manufacture of sewing machines and attachments, and tobacco manufactures.

Columbus shows an increase in value of products from 1904 to 1909 of \$9,501,740, or 24 per cent, and from 1899 to 1904 of \$4,781,699, or 13.8 per cent. The leading industry in the city is foundry and machine-shop products, which were valued at \$7,744,000 in 1909 and represented 15.8 per cent of the total value of manufactures in the city. Other important industries were: Boots and shoes, with products valued at \$5,436,000; malt liquors, with \$2,728,000; printing and publishing, with \$2,660,000; and slaughtering and meat packing, with \$2,354,000.

Lorain, with products valued at \$38,986,996 in 1909, owes practically its entire industrial activity to the operation of two establishments—a steel works and rolling mill and a blast furnace. The value of the output of the blast furnace, however, was less than half that of the steel plant. All other industries except shipbuilding, for which one establishment was reported in 1909, are insignificant.

For Canton the most important industries were steel works and rolling mills, foundries and machine shops, and the manufacture of copper, tin, and sheet-iron products. A factory manufacturing automobile bodies and parts, an establishment engaged in the manufacture of safes and vaults, one tin-plate and terneplate mill, and two watch and watch-case factories located in Canton contributed considerably to its prominence in manufacture. Foundries and machineshops constitute the only one of these seven industries for which statistics can be presented separately for Canton in Table I, page 973, without disclosing the operations of individual establishments.

There are five cities in Ohio for which the products reported for 1909 were valued at more than \$10,000,000 but less than \$25,000,000, namely, Steubenville, Springfield, Hamilton, Middletown, and Bellaire. In both Steubenville and Bellaire the iron and steel industries (including tin plate and terneplate) contributed considerably more than half of the total value of products reported for the city, there being four establishments in the former city and two in the latter. In Bellaire the manufacture of stamped

and enameled ware and of glass are also important industries. The manufacture of agricultural implements is the largest industry in Springfield, the value of the products for this industry forming somewhat less than one-third of the total value shown for the city. Foundry and machine-shop products, printing and publishing, flour-mill and gristmill products, and pianos and organs and materials were also important. In Hamilton the leading industries were the manufacture of paper and wood pulp and of foundry and machine-shop products, their combined value of products being more than half of that reported for the city. The manufacture of safes and vaults and of copper, tin, and sheet-iron products are also important. Tobacco manufactures is by far the most important industry in Middletown, while the combined output of the five paper and wood pulp mills and of the steel works and rolling mill located in this city represented about one-fourth of the total for the city.

Of the remaining cities in Ohio for which statistics are shown separately in the preceding table, two had one industry each which contributed more than one-half of its total value of products for 1909, these cities being important centers of the respective industries in the state. In Portsmouth the value of boots and shoes was \$5,300,000, representing 72.8 per cent of the total reported for all manufactures in the city, while in East Liverpool pottery, terra-cotta, and fire-clay products were manufactured to the value of \$5,452,000, which amount represents 82.2 per cent of the total for that city.

The other cities of the state having products valued at more than \$5,000,000 but less than \$10,000,000, together with the two leading industries in each, were as follows: Norwood, printing and publishing and foundry and machine-shop products; Zanesville, iron and steel pipe, wrought, and steel works and rolling mills; Mansfield, agricultural implements and brass and bronze products; Elyria, chemicals and foundry and machine-shop products; Newark, glass and steam-railroad repair shops; Lima, tobacco manufactures and locomotives; Ironton, blast furnaces and wire; Piqua, hosiery and knit goods and stoves and furnaces; Alliance, foundry and machine-shop products and cash registers and calculating machines; Warren, foundry and machine-shop products and electrical machinery, apparatus, and supplies; Sandusky, vinous liquors and paper goods; and Marion, foundry and machine-shop products and agricultural implements.

The leading industry in each of the remaining cities of the state having over 10,000 inhabitants was as follows: Foundry and machine-shop products, in Massillon and in Tiffin; flour mills and gristmills, in Chillicothe; steel works and rolling mills, in Cambridge; boots and shoes, in Lancaster; petroleum refining, in Findlay and in Marietta; leather (tanned, curried, and finished), in Ashtabula; and electrical machinery and apparatus, in Lakewood.

Character of ownership.—The table that follows has for its purpose the presentation of conditions in respect to the character of ownership, or legal organization, of manufacturing enterprises. For all industries combined comparative figures are given covering the censuses of 1909 and 1904. Comparative data for

1899 are not available. Figures for 1909 only are presented for several important industries individually. In order to avoid disclosing the operations of individual concerns it is necessary to omit several important industries from this table and the one following.

INDUSTRY AND CHARACTER OF OWNERSHIP.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.	INDUSTRY AND CHARACTER OF OWNERSHIP.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.
ALL INDUSTRIES:					Butter, cheese, and condensed milk, 1909—Con.				
1909.....	15,138	446,934	\$1,437,935,817	\$613,733,870	Per cent of total.....	100.0	100.0	100.0	100.0
1904.....	13,785	384,298	960,811,857	433,176,272	Individual.....	26.8	15.3	16.4	13.5
Individual:					Firm.....	16.3	8.3	11.8	7.4
1909.....	6,978	34,345	88,075,465	41,358,065	Corporation.....	22.2	65.7	60.0	70.5
1904.....	6,590	36,980	80,034,354	40,150,067	Other.....	34.8	10.7	11.1	8.6
Firm:					Carriages and wagons and materials, 1909.....				
1909.....	2,861	33,409	96,698,565	42,158,928	Individual.....	407	8,615	\$21,949,459	\$10,535,458
1904.....	3,002	38,519	101,947,038	47,273,310	Individual.....	1,256	2,345,765	1,348,446	1,348,446
Corporation:					Firm.....	1,164	2,858,841	1,312,027	1,312,027
1909.....	5,123	378,473	1,249,778,444	528,329,235	Corporation.....	97	6,895	16,744,853	7,874,816
1904.....	4,008	288,591	777,392,416	345,106,135	Per cent of total.....	100.0	100.0	100.0	100.0
Other:					Individual.....	45.0	14.2	10.7	12.8
1909.....	176	707	3,383,343	1,887,642	Firm.....	23.8	13.2	13.0	12.5
1904.....	185	208	1,438,049	645,770	Corporation.....	31.2	72.5	76.3	74.7
Per cent of total:					Clothing, men's, including shirts, 1909.....				
1909.....	100.0	100.0	100.0	100.0	Individual.....	342	9,950	\$24,869,437	\$11,949,357
1904.....	100.0	100.0	100.0	100.0	Individual.....	227	2,873	4,235,906	2,466,330
Individual:					Firm.....	70	4,254	13,387,356	6,201,928
1909.....	46.1	7.7	6.1	6.7	Corporation.....	45	2,823	7,246,115	3,221,099
1904.....	47.8	10.2	8.3	9.3	Per cent of total.....	100.0	100.0	100.0	100.0
Firm:					Individual.....	66.4	28.9	17.0	20.6
1909.....	18.9	7.5	6.7	6.9	Firm.....	20.5	42.8	53.8	52.4
1904.....	21.8	10.6	10.6	10.9	Corporation.....	13.2	28.4	29.1	27.0
Corporation:					Clothing, women's, 1909.....				
1909.....	33.8	84.7	85.9	86.1	Individual.....	153	8,843	\$19,493,080	\$9,202,477
1904.....	29.1	79.2	80.9	79.7	Individual.....	62	539	750,918	448,905
Other:					Firm.....	44	2,444	5,207,648	2,446,138
1909.....	1.2	0.2	0.2	0.3	Corporation.....	47	5,810	13,534,496	6,307,434
1904.....	1.3	0.1	0.1	0.1	Per cent of total.....	100.0	100.0	100.0	100.0
Agricultural implements, 1909.....					Individual.....	40.5	6.7	3.9	4.9
Individual.....	55	5,997	\$14,440,461	\$8,121,942	Firm.....	28.8	27.6	26.7	26.6
Individual.....	10	51	122,107	62,906	Corporation.....	30.7	65.7	69.4	68.5
Firm.....	4	148	525,896	237,763	Coffee and spice, roasting and grinding, 1909.....				
Corporation.....	41	5,798	13,792,468	7,791,273	Individual.....	39	762	\$11,224,437	\$2,947,098
Per cent of total.....	100.0	100.0	100.0	100.0	Individual.....	5	23	302,000	53,496
Individual.....	18.2	0.8	0.8	0.8	Firm.....	7	121	1,010,768	232,677
Firm.....	7.3	2.5	3.0	3.3	Corporation.....	27	618	9,911,669	2,610,955
Corporation.....	74.5	96.7	95.5	95.9	Per cent of total.....	100.0	100.0	100.0	100.0
Automobiles, including bodies and parts, 1909.....					Individual.....	12.8	3.0	2.7	1.8
Individual.....	75	12,130	\$38,838,754	\$20,316,756	Firm.....	17.9	15.9	9.0	9.6
Individual.....	10	147	227,816	137,171	Corporation.....	69.2	81.1	88.3	88.6
Firm.....	13	228	1,608,896	788,563	Confectionery, 1909.....				
Corporation.....	52	11,755	37,002,042	10,390,992	Individual.....	114	2,493	\$7,306,574	\$3,217,656
Per cent of total.....	100.0	100.0	100.0	100.0	Individual.....	41	380	909,891	426,178
Individual.....	13.3	1.2	0.6	0.7	Firm.....	26	337	917,611	422,453
Firm.....	17.3	1.9	4.1	3.9	Corporation.....	47	1,726	5,479,072	2,369,025
Corporation.....	69.3	96.9	95.3	95.4	Per cent of total.....	100.0	100.0	100.0	100.0
Boots and shoes, including cut stock and findings, 1909.....					Individual.....	36.0	15.2	12.5	13.2
Individual.....	72	16,026	\$31,550,957	\$12,678,950	Firm.....	22.8	15.5	12.6	13.1
Individual.....	8	307	514,920	218,034	Corporation.....	41.2	69.2	75.0	73.6
Firm.....	13	1,852	3,360,551	1,512,723	Flour-mill and gristmill products, 1909.....				
Corporation.....	51	13,867	27,675,438	10,948,103	Individual.....	673	2,585	\$48,093,353	\$6,740,746
Per cent of total.....	100.0	100.0	100.0	100.0	Individual.....	280	604	8,472,566	1,467,028
Individual.....	11.1	1.9	1.6	1.7	Firm.....	272	671	11,645,211	1,844,076
Firm.....	18.1	11.6	10.7	11.9	Corporation.....	121	1,310	27,975,576	3,429,643
Corporation.....	70.8	86.5	87.7	86.3	Per cent of total.....	100.0	100.0	100.0	100.0
Bread and other bakery products, 1909.....					Individual.....	41.6	23.4	17.6	21.8
Individual.....	1,467	5,972	\$23,007,131	\$9,340,898	Firm.....	40.4	28.0	24.2	27.4
Individual.....	1,232	2,824	10,381,455	4,182,351	Corporation.....	18.0	50.7	58.2	50.9
Firm.....	164	598	2,299,455	933,424	Foundry and machine-shop products, 1909.....				
Corporation.....	71	2,550	10,326,221	4,225,123	Individual.....	1,215	64,617	\$145,836,648	\$81,276,763
Per cent of total.....	100.0	100.0	100.0	100.0	Individual.....	283	2,108	4,727,124	2,685,005
Individual.....	84.0	47.3	45.1	44.8	Firm.....	173	2,871	6,350,524	3,465,944
Firm.....	11.2	10.0	10.0	10.0	Corporation.....	762	59,838	134,759,000	75,125,804
Corporation.....	4.8	42.7	44.9	45.2	Per cent of total.....	100.0	100.0	100.0	100.0
Brick and tile, 1909.....					Individual.....	23.2	3.3	3.2	3.3
Individual.....	517	7,466	\$9,357,730	\$7,153,387	Firm.....	14.2	4.4	4.4	4.3
Individual.....	211	994	1,200,580	934,044	Corporation.....	62.6	92.3	92.4	92.4
Firm.....	153	1,095	1,407,180	1,096,681	Furniture and refrigerators, 1909.....				
Corporation.....	153	5,377	6,749,970	5,122,662	Individual.....	228	8,232	\$16,258,757	\$9,016,312
Per cent of total.....	100.0	100.0	100.0	100.0	Individual.....	66	895	1,698,026	912,404
Individual.....	40.8	13.3	12.8	13.1	Firm.....	40	537	1,070,674	633,800
Firm.....	29.6	14.7	15.0	15.3	Corporation.....	122	0,800	13,490,057	7,470,103
Corporation.....	29.6	72.0	72.1	71.6	Per cent of total.....	100.0	100.0	100.0	100.0
Butter, cheese, and condensed milk, 1909.....					Individual.....	28.9	10.9	6.4	7.0
Individual.....	325	1,067	\$9,689,870	\$2,004,234	Firm.....	17.5	6.5	6.6	6.6
Individual.....	87	163	1,592,131	271,005	Corporation.....	53.5	82.6	83.0	82.9
Firm.....	53	89	1,144,155	148,102	Includes the group "Other," to avoid disclosure of individual operations.				
Corporation.....	72	701	5,874,514	1,413,458					
Other.....	113	114	1,078,870	171,669					

* Includes the group "Other," to avoid disclosure of individual operations.

INDUSTRY AND CHARACTER OF OWNERSHIP.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.	INDUSTRY AND CHARACTER OF OWNERSHIP.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.	
Liquors, malt, 1909	105	4,356	\$25,332,059	\$18,768,959	Printing and publishing, 1909—Continued. Per cent of total.....	100.0	100.0	100.0	100.0	
Individual.....	12	141	644,346	488,829		Individual.....	50.1	17.4	15.8	16.4
Firm.....	10	205	1,557,171	1,033,474		Firm.....	17.1	10.2	7.8	7.3
Corporation.....	83	4,010	23,130,542	17,216,656		Corporation.....	29.2	68.7	71.2	70.2
Per cent of total.....	100.0	100.0	100.0	100.0		Other.....	3.6	3.6	5.4	5.6
Individual.....	11.4	3.2	2.5	2.6		Slaughtering and meat packing, 1909	158	3,086	\$50,804,100	\$6,456,938
Firm.....	9.5	4.7	6.1	5.7		Individual.....	80	463	7,690,049	968,040
Corporation.....	79.0	92.1	91.3	91.7		Firm.....	31	148	4,044,496	416,638
Lumber and timber products, 1909	1,390	13,456	\$34,597,069	\$14,624,706		Corporation.....	47	2,475	39,069,555	5,071,360
Individual.....	753	3,797	7,708,569	3,896,347		Per cent of total.....	100.0	100.0	100.0	100.0
Firm.....	352	2,623	6,122,840	2,610,692	Individual.....	50.6	15.0	15.1	15.0	
Corporation.....	285	7,036	20,765,660	8,117,667	Firm.....	19.6	4.8	8.0	6.5	
Per cent of total.....	100.0	100.0	100.0	100.0	Corporation.....	29.7	80.2	76.9	78.5	
Individual.....	54.2	28.2	22.3	26.6	Tobacco manufactures, 1909	1,146	12,631	\$28,907,269	\$18,832,446	
Firm.....	25.3	19.5	17.7	17.9	Individual.....	963	3,269	5,121,142	3,272,670	
Corporation.....	20.5	52.3	60.0	55.5	Firm.....	137	2,751	3,715,795	2,378,108	
Printing and publishing, 1909	1,655	15,756	\$41,657,306	\$29,752,952	Corporation.....	46	6,621	20,070,332	11,181,668	
Individual.....	829	2,745	6,510,373	4,891,752	Per cent of total.....	100.0	100.0	100.0	100.0	
Firm.....	283	1,615	3,232,528	2,306,498	Individual.....	84.0	25.8	17.7	19.4	
Corporation.....	483	10,832	29,673,914	20,877,439	Firm.....	12.0	21.8	12.9	14.1	
Other.....	60	564	2,240,491	1,677,263	Corporation.....	4.0	52.4	69.4	66.4	

The most important distinction shown is that between corporate and all other forms of ownership. Of the total number of establishments in all industries combined, 33.8 per cent were under corporate ownership in 1909, as against 66.2 per cent under all other forms. The corresponding proportions for 1904 were 29.1 and 70.9 per cent, respectively. In respect to value of products, the diversity in the figures for the two classes was even more pronounced but in the opposite direction. In 1909 the establishments operated by corporations represented 86.9 per cent of the total value as against 13.1 per cent for establishments under all other forms of ownership, while in 1904 the corresponding figures were 80.9 per cent and 19.1 per cent, respectively. The establishments operated by firms decreased from 1904 to 1909 both in number and in the value of their products. They represented, in 1909, 18.9 per cent of the total number of establishments, as compared with 21.8 per cent in 1904, and contributed in 1909 only 6.7 per cent of the total value of products, as compared with 10.6 per cent in 1904.

Establishments under corporate ownership reported a larger proportion of the value of products (95.5 per cent), in the manufacture of agricultural implements than in any other industry shown separately in the table. The proportion of the total value of products reported for establishments under individual ownership was largest in the bakery industry (45.1 per cent), and that for establishments operated by firms greatest in the manufacture of men's clothing (53.8 per cent).

Size of establishment.—The tendency for manufacturing to become concentrated in large establishments, or the reverse, is a matter of interest from the standpoint of industrial organization. In order to throw some light upon it the table on the following page groups the establishments according to the value of their products. The table also shows the average size

of establishments for all industries combined and for important industries separately, as measured by number of wage earners, value of products, and value added by manufacture. The totals for all industries are shown for the last two censuses, while for certain important industries figures are given for 1909 only.

The table shows that in 1909, of the 15,138 establishments, only 245, or 1.6 per cent, had a value of products of \$1,000,000 and over. These establishments, however, employed an average of 142,832 wage earners, or 32 per cent of the total number in all establishments, and reported 46.3 per cent of the total value of products and 39.8 per cent of the total value added by manufacture.

On the other hand, the very small establishments—that is, those having a value of products of less than \$5,000—constituted a considerable proportion (33.7 per cent) of the total number of establishments, but the value of their products amounted to only eight-tenths of 1 per cent of the total. The great bulk of the manufacturing was carried on in establishments having a product valued at not less than \$100,000.

It will be seen from the table that during the five years from 1904 to 1909 there was a marked increase, as measured by average number of wage earners, value of products, and value added by manufacture, in the relative importance of the largest establishments—those reporting products of not less than \$1,000,000 in value—and a decrease in that of all other classes.

The fact that the average value of products per establishment increased from \$69,700 to \$94,988, and the value added by manufacture from \$31,424 to \$40,543, can not be taken as in itself indicating a tendency toward concentration. The increased values shown may be, and probably are, due in part to the increase that has taken place in the prices of com-

modities. The average number of wage earners per establishment increased from 26 in 1904 to 30 in 1909.

This table shows further that among the industries given separately in the table the average value of products per establishment was high in the manufacture of automobiles, the boot and shoe industry, and in slaughtering and meat packing, while the average was low in the bakery, brick and tile, and lumber

industries. The average value of products in the automobile factories was \$517,850 and in the bakeries \$15,683. In the steel works and rolling mills, blast furnaces, tin-plate and terneplate factories, and petroleum refineries, the average value of products per establishment exceeded \$1,000,000, but the statistics as required in this table can not be presented separately for these industries without disclosing the operations of individual establishments.

INDUSTRY AND VALUE OF PRODUCTS.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.	INDUSTRY AND VALUE OF PRODUCTS.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.
ALL INDUSTRIES:					Bread and other bakery products, 1909				
1909	15,138	446,934	\$1,437,835,817	\$613,733,870	Less than \$5,000	1,467	5,972	\$23,007,131	\$9,340,898
1904	13,785	364,288	860,811,957	493,175,272	\$5,000 and less than \$20,000	557	397	1,618,993	715,540
Less than \$5,000:					\$20,000 and less than \$100,000	720	1,854	6,087,277	2,750,504
1909	5,095	7,021	12,198,229	7,811,667	\$100,000 and less than \$1,000,000	151	1,458	5,621,220	2,038,762
1904	4,857	7,881	11,804,202	7,737,680	Average per establishment	33	2,263	9,179,541	3,810,032
\$5,000 and less than \$20,000:					Per cent of total	100.0	100.0	100.0	100.0
1909	4,474	23,571	46,028,999	26,309,694	Less than \$5,000	38.0	6.6	7.0	7.7
1904	4,147	24,003	42,532,930	24,242,565	\$5,000 and less than \$20,000	49.5	31.0	29.1	29.5
\$20,000 and less than \$100,000:					\$20,000 and less than \$100,000	10.3	24.4	24.0	22.0
1909	3,405	64,858	156,080,099	76,806,053	\$100,000 and less than \$1,000,000	2.2	37.9	39.9	40.8
1904	3,083	66,880	139,906,296	71,518,400	Average per establishment	4		\$15,683	\$6,367
\$100,000 and less than \$1,000,000:					Brick and tile, 1909				
1909	1,019	208,656	557,384,719	258,737,951	Less than \$5,000	517	7,466	\$9,357,730	\$7,153,387
1904	1,562	181,411	434,781,943	202,893,808	\$5,000 and less than \$20,000	240	646	670,208	631,882
\$1,000,000 and over:					\$20,000 and less than \$100,000	162	1,446	1,649,911	1,280,833
1909	245	142,833	666,243,771	244,068,505	\$100,000 and less than \$1,000,000	94	3,463	4,287,605	3,245,814
1904	136	84,173	331,726,477	126,782,819	\$1,000,000 and less than \$1,000,000	15	1,911	2,760,006	2,091,798
Per cent of total:					Per cent of total	100.0	100.0	100.0	100.0
1909	100.0	100.0	100.0	100.0	Less than \$5,000	47.6	8.7	7.2	7.4
1904	100.0	100.0	100.0	100.0	\$5,000 and less than \$20,000	31.3	19.4	17.6	17.9
Less than \$5,000:					\$20,000 and less than \$100,000	18.2	46.4	45.8	45.4
1909	33.7	1.6	0.8	1.3	\$100,000 and less than \$1,000,000	2.9	25.6	29.4	29.2
1904	35.2	2.1	1.2	1.8	Average per establishment	14		\$18,100	\$13,838
\$5,000 and less than \$20,000:					Butter, cheese, and condensed milk, 1909				
1909	29.6	5.3	3.2	4.3	Less than \$5,000	325	1,067	\$9,689,670	\$2,004,234
1904	30.1	6.6	4.4	5.6	Less than \$5,000	123	54	333,861	71,210
\$20,000 and less than \$100,000:					\$5,000 and less than \$20,000	104	112	1,059,718	105,725
1909	22.5	14.5	10.9	12.5	\$20,000 and less than \$100,000	77	282	2,890,024	512,951
1904	22.4	13.4	14.0	10.5	\$100,000 and less than \$1,000,000	21	619	5,406,067	1,224,343
\$100,000 and less than \$1,000,000:					Per cent of total	100.0	100.0	100.0	100.0
1909	12.7	46.7	38.8	42.2	Less than \$5,000	37.8	5.1	3.4	3.6
1904	11.3	49.8	45.3	46.8	\$5,000 and less than \$20,000	32.0	10.5	10.9	9.8
\$1,000,000 and over:					\$20,000 and less than \$100,000	23.7	29.4	29.8	25.6
1909	1.6	32.0	46.3	39.8	\$100,000 and less than \$1,000,000	6.5	58.0	55.8	61.1
1904	1.0	23.1	34.5	29.3	Average per establishment	3		\$29,814	\$6,167
Average per establishment:					Carriages and wagons and materials, 1909				
1909	30		\$94,988	\$40,543	Less than \$5,000	407	8,815	\$21,949,459	\$10,535,458
1904	26		69,700	31,424	Less than \$5,000	84	1,155	227,147	154,619
Agricultural implements, 1909					\$5,000 and less than \$20,000	172	1,073	1,788,714	1,118,304
Less than \$5,000	55	5,997	\$14,440,461	\$3,121,942	\$20,000 and less than \$100,000	89	1,968	4,250,008	2,092,609
Less than \$5,000	8	12	19,452	12,550	\$100,000 and less than \$1,000,000	62	5,619	15,683,590	7,170,026
\$5,000 and less than \$20,000	10	50	117,250	69,183	Per cent of total	100.0	100.0	100.0	100.0
\$20,000 and less than \$100,000	12	291	652,373	391,332	Less than \$5,000	20.6	1.8	1.0	1.5
\$100,000 and less than \$1,000,000	22	3,340	8,389,730	4,690,335	\$5,000 and less than \$20,000	42.3	12.2	8.1	10.6
\$1,000,000 and over	3	2,304	5,261,656	2,952,542	\$20,000 and less than \$100,000	21.9	22.3	19.4	19.9
Per cent of total	100.0	100.0	100.0	100.0	\$100,000 and less than \$1,000,000	15.2	63.7	71.5	68.1
Less than \$5,000	14.5	0.2	0.1	0.2	Average per establishment	22		\$59,930	\$25,880
\$5,000 and less than \$20,000	18.2	0.8	0.8	0.8	Clothing, men's, including shirts, 1909				
\$20,000 and less than \$100,000	21.8	4.9	4.5	4.8	Less than \$5,000	342	9,950	\$24,669,437	\$11,949,357
\$100,000 and less than \$1,000,000	40.0	55.7	55.1	57.8	Less than \$5,000	119	549	290,605	284,219
\$1,000,000 and over	5.5	33.4	36.4	36.4	\$5,000 and less than \$20,000	116	1,784	1,084,327	945,399
Average per establishment	109		\$262,554	\$147,672	\$20,000 and less than \$100,000	53	1,537	2,701,557	1,302,380
Automobiles, including bodies and parts, 1909					\$100,000 and less than \$1,000,000	54	6,080	20,786,948	9,417,359
Less than \$5,000	75	12,130	\$38,838,754	\$20,316,756	Per cent of total	100.0	100.0	100.0	100.0
Less than \$5,000	7	8	20,426	13,391	Less than \$5,000	34.8	5.5	1.2	2.4
\$5,000 and less than \$20,000	12	73	143,708	93,543	\$5,000 and less than \$20,000	33.9	17.9	4.4	7.9
\$20,000 and less than \$100,000	21	549	941,263	555,539	\$20,000 and less than \$100,000	15.5	15.4	10.9	10.9
\$100,000 and less than \$1,000,000	22	2,714	7,244,613	3,586,193	\$100,000 and less than \$1,000,000	15.8	61.1	59.9	78.8
\$1,000,000 and over	13	8,786	30,483,684	16,068,090	Average per establishment	29		\$72,718	\$34,940
Per cent of total	100.0	100.0	100.0	100.0	Clothing, women's, 1909				
Less than \$5,000	9.3	0.1	0.1	0.1	Less than \$5,000	153	8,843	\$10,493,060	\$9,202,477
\$5,000 and less than \$20,000	16.0	0.6	0.4	0.5	Less than \$5,000	42	154	103,484	88,862
\$20,000 and less than \$100,000	28.0	4.5	2.4	2.7	\$5,000 and less than \$20,000	27	310	286,802	209,521
\$100,000 and less than \$1,000,000	29.3	22.4	13.7	17.6	\$20,000 and less than \$100,000	42	1,234	2,162,544	969,594
\$1,000,000 and over	17.3	72.4	78.5	79.1	\$100,000 and less than \$1,000,000	39	5,095	11,562,057	5,277,791
Average per establishment	162		\$517,850	\$270,890	\$1,000,000 and over	3	2,044	6,878,173	2,656,709
Boots and shoes, including out stock and findings, 1909					Per cent of total	100.0	100.0	100.0	100.0
Less than \$5,000	72	16,026	\$31,550,957	\$12,678,950	Less than \$5,000	27.4	1.7	0.5	1.0
Less than \$5,000	4	17	9,827	5,272	\$5,000 and less than \$20,000	17.6	3.6	1.5	1.5
\$5,000 and less than \$20,000	9	75	94,097	54,113	\$20,000 and less than \$100,000	27.4	14.0	11.1	10.5
\$20,000 and less than \$100,000	9	334	404,621	199,611	\$100,000 and less than \$1,000,000	25.5	57.6	59.3	57.3
\$100,000 and less than \$1,000,000	40	7,368	14,136,417	5,555,195	\$1,000,000 and over	2.0	23.1	27.6	28.9
\$1,000,000 and over	10	8,232	16,905,995	6,864,759	Average per establishment	58		\$127,406	\$60,157
Per cent of total	100.0	100.0	100.0	100.0	Footwear, 1909				
Less than \$5,000	5.6	0.1	(¹)	(¹)	Less than \$5,000	27.4	1.7	0.5	1.0
\$5,000 and less than \$20,000	12.5	0.5	0.3	0.4	\$5,000 and less than \$20,000	17.6	3.6	1.5	1.5
\$20,000 and less than \$100,000	12.5	2.1	1.3	1.6	\$20,000 and less than \$100,000	27.4	14.0	11.1	10.5
\$100,000 and less than \$1,000,000	55.6	46.0	44.8	43.8	\$100,000 and less than \$1,000,000	25.5	57.6	59.3	57.3
\$1,000,000 and over	13.9	51.4	53.6	54.2	\$1,000,000 and over	2.0	23.1	27.6	28.9
Average per establishment	223		\$438,208	\$176,097	Average per establishment	58		\$127,406	\$60,157

¹ Less than one-tenth of 1 per cent.

² Includes the group "\$1,000,000 and over."

INDUSTRY AND VALUE OF PRODUCTS.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.	INDUSTRY AND VALUE OF PRODUCTS.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.
Coffee and spice, roasting and grinding, 1909.....	39	782	\$11,224,437	\$2,947,098	Liquors, malt, 1909.....	105	4,356	\$25,332,059	\$18,768,969
Less than \$5,000.....	3	2	9,465	9,845	Less than \$5,000.....	4	5	8,855	5,915
\$5,000 and less than \$20,000.....	4	10	45,975	11,485	\$5,000 and less than \$20,000.....	7	30	75,779	46,192
\$20,000 and less than \$100,000.....	10	45	446,753	113,144	\$20,000 and less than \$100,000.....	36	407	2,126,051	1,485,898
\$100,000 and less than \$1,000,000.....	18	407	4,819,723	1,354,060	\$100,000 and less than \$1,000,000.....	52	2,370	13,794,286	10,318,489
\$1,000,000 and over.....	4	298	5,902,621	1,464,564	\$1,000,000 and over.....	6	1,484	9,325,488	6,912,465
Per cent of total.....	100.0	100.0	100.0	100.0	Per cent of total.....	100.0	100.0	100.0	100.0
Less than \$5,000.....	7.7	0.3	0.1	0.1	Less than \$5,000.....	3.8	0.1	(¹)	(¹)
\$5,000 and less than \$20,000.....	10.3	1.3	0.4	0.4	\$5,000 and less than \$20,000.....	6.7	0.7	0.3	0.2
\$20,000 and less than \$100,000.....	25.6	5.9	4.0	3.8	\$20,000 and less than \$100,000.....	34.3	10.7	8.4	7.9
\$100,000 and less than \$1,000,000.....	46.2	53.4	42.9	45.9	\$100,000 and less than \$1,000,000.....	49.5	54.4	54.5	55.0
\$1,000,000 and over.....	10.3	39.1	52.6	49.7	\$1,000,000 and over.....	6.7	34.1	36.8	36.8
Average per establishment.....	20		\$287,800	\$75,567	Average per establishment.....	41		\$241,258	\$178,752
Confectionery, 1909.....	114	2,493	\$7,308,574	\$3,217,656	Lumber and timber products, 1909.....	1,390	13,456	\$34,597,069	\$14,624,706
Less than \$5,000.....	27	31	90,400	29,231	Less than \$5,000.....	574	1,121	1,370,723	888,599
\$5,000 and less than \$20,000.....	36	178	378,643	181,430	\$5,000 and less than \$20,000.....	453	2,561	4,565,738	2,504,581
\$20,000 and less than \$100,000.....	32	540	1,568,573	671,091	\$20,000 and less than \$100,000.....	284	4,901	12,920,125	5,425,620
\$100,000 and less than \$1,000,000.....	19	1,744	5,298,958	2,335,904	\$100,000 and less than \$1,000,000.....	79	4,873	15,740,483	5,825,906
Per cent of total.....	100.0	100.0	100.0	100.0	Per cent of total.....	100.0	100.0	100.0	100.0
Less than \$5,000.....	23.7	1.2	0.8	0.9	Less than \$5,000.....	41.3	8.3	4.0	5.9
\$5,000 and less than \$20,000.....	31.6	7.1	5.2	5.6	\$5,000 and less than \$20,000.....	32.0	19.0	13.2	17.1
\$20,000 and less than \$100,000.....	28.1	21.7	21.5	20.9	\$20,000 and less than \$100,000.....	20.4	36.4	37.3	37.1
\$100,000 and less than \$1,000,000.....	16.7	70.0	72.5	72.6	\$100,000 and less than \$1,000,000.....	5.7	36.2	45.5	39.8
Average per establishment.....	22		\$64,093	\$28,225	Average per establishment.....	10		\$24,890	\$10,521
Flour-mill and gristmill products, 1909.....	673	2,585	\$49,093,353	\$6,740,746	Printing and publishing, 1909.....	1,655	15,756	\$41,657,306	\$29,752,952
Less than \$5,000.....	41	33	125,064	30,114	Less than \$5,000.....	795	1,095	1,939,089	1,496,403
\$5,000 and less than \$20,000.....	191	207	2,368,342	460,475	\$5,000 and less than \$20,000.....	524	2,823	5,208,241	4,044,786
\$20,000 and less than \$100,000.....	368	1,051	15,827,039	2,719,774	\$20,000 and less than \$100,000.....	280	4,713	10,754,812	7,765,373
\$100,000 and less than \$1,000,000.....	64	760	16,641,107	1,954,400	\$100,000 and less than \$1,000,000.....	72	5,024	18,731,793	13,187,171
\$1,000,000 and over.....	9	544	13,191,741	1,575,982	\$1,000,000 and over.....	4	1,501	5,023,273	3,259,219
Per cent of total.....	100.0	100.0	100.0	100.0	Per cent of total.....	100.0	100.0	100.0	100.0
Less than \$5,000.....	6.1	1.3	0.3	0.4	Less than \$5,000.....	48.0	6.9	4.7	5.0
\$5,000 and less than \$20,000.....	28.4	8.0	4.8	6.8	\$5,000 and less than \$20,000.....	31.7	17.9	12.5	13.6
\$20,000 and less than \$100,000.....	54.7	40.7	32.9	40.4	\$20,000 and less than \$100,000.....	15.7	29.9	25.8	26.1
\$100,000 and less than \$1,000,000.....	9.5	29.0	34.6	29.0	\$100,000 and less than \$1,000,000.....	4.4	35.7	45.0	44.3
\$1,000,000 and over.....	1.3	21.0	27.4	23.4	\$1,000,000 and over.....	0.2	9.5	12.1	11.0
Average per establishment.....	4		\$71,461	\$10,016	Average per establishment.....	10		\$25,171	\$17,978
Foundry and machine-shop products, 1909.....	1,218	64,817	\$145,830,648	\$81,278,753	Slaughtering and meat packing, 1909.....	158	3,086	\$50,804,100	\$6,456,938
Less than \$5,000.....	198	280	481,119	317,218	Less than \$5,000.....	7	11	25,156	13,002
\$5,000 and less than \$20,000.....	303	1,830	3,347,103	2,172,448	\$5,000 and less than \$20,000.....	18	19	190,283	35,274
\$20,000 and less than \$100,000.....	401	9,752	19,627,401	11,223,823	\$20,000 and less than \$100,000.....	60	224	3,277,587	568,803
\$100,000 and less than \$1,000,000.....	293	38,563	89,934,104	47,427,402	\$100,000 and less than \$1,000,000.....	61	1,088	20,274,934	2,437,572
\$1,000,000 and over.....	23	14,392	65,446,631	20,135,862	\$1,000,000 and over.....	12	1,744	27,029,140	3,352,287
Per cent of total.....	100.0	100.0	100.0	100.0	Per cent of total.....	100.0	100.0	100.0	100.0
Less than \$5,000.....	16.3	0.4	0.3	0.4	Less than \$5,000.....	4.4	0.4	0.1	0.2
\$5,000 and less than \$20,000.....	24.9	2.8	2.3	2.7	\$5,000 and less than \$20,000.....	11.4	0.6	0.4	0.5
\$20,000 and less than \$100,000.....	32.9	15.0	13.5	13.8	\$20,000 and less than \$100,000.....	38.0	7.3	6.5	8.8
\$100,000 and less than \$1,000,000.....	24.1	59.5	59.6	58.3	\$100,000 and less than \$1,000,000.....	38.6	35.3	39.9	38.5
\$1,000,000 and over.....	1.0	22.2	24.3	24.8	\$1,000,000 and over.....	7.0	56.5	53.2	51.9
Average per establishment.....	53		\$119,735	\$60,730	Average per establishment.....	20		\$321,545	\$40,807
Furniture and refrigerators, 1909.....	228	8,232	\$16,258,757	\$9,016,312	Tobacco manufactures, 1909.....	1,146	12,631	\$28,907,289	\$16,822,446
Less than \$5,000.....	35	43	91,623	62,003	Less than \$5,000.....	800	808	1,658,381	1,104,749
\$5,000 and less than \$20,000.....	54	357	599,079	369,452	\$5,000 and less than \$20,000.....	184	1,263	1,702,071	1,129,261
\$20,000 and less than \$100,000.....	101	3,086	5,341,808	2,851,220	\$20,000 and less than \$100,000.....	64	2,218	2,900,171	1,840,402
\$100,000 and less than \$1,000,000.....	38	4,740	10,226,247	5,733,637	\$100,000 and less than \$1,000,000.....	34	6,010	8,617,942	4,926,900
Per cent of total.....	100.0	100.0	100.0	100.0	\$1,000,000 and over.....	4	2,332	14,028,704	7,831,134
Less than \$5,000.....	15.4	0.5	0.6	0.7	Per cent of total.....	100.0	100.0	100.0	100.0
\$5,000 and less than \$20,000.....	23.7	4.3	3.7	4.1	Less than \$5,000.....	75.0	6.4	5.7	6.6
\$20,000 and less than \$100,000.....	44.3	37.5	32.9	31.6	\$5,000 and less than \$20,000.....	16.1	10.0	5.9	6.7
\$100,000 and less than \$1,000,000.....	10.7	57.7	62.9	63.6	\$20,000 and less than \$100,000.....	5.6	17.6	10.0	10.9
Average per establishment.....	36		\$71,310	\$39,545	\$100,000 and less than \$1,000,000.....	3.0	47.6	29.8	29.3
					\$1,000,000 and over.....	0.3	18.5	48.5	46.5
					Average per establishment.....	11		\$25,234	\$14,688

¹ Includes the group "\$1,000,000 and over."

² Less than one-tenth of 1 per cent.

In some respects, and especially from the standpoint of conditions under which persons engaged in manufactures work, the best classification of establishments to bring out the feature of size is a classification according to the number of wage earners employed. The table on the following page shows, for 1909, such a classification for all industries combined and for 40 important industries individually, and gives not only the number of establishments falling into each group but also the average number of wage earners employed.

Of the 15,138 establishments reported for all industries, 10 per cent employed no wage earners; 48.4 per cent, from 1 to 5; 20.9 per cent, from 6 to 20; and 9.4 per cent, from 21 to 50. The most numerous single

group consists of the 7,320 establishments employing from 1 to 5 wage earners, and the next of the 3,163 establishments employing from 6 to 20 wage earners. There were 337 establishments that employed over 250 wage earners; 33 of these employed over 1,000, of which 8 were steel works and rolling mills and 4 automobile factories.

Of the total number of wage earners, 44 per cent were in establishments employing over 250 wage earners. The single group having the largest number of employees was the group comprising the establishments employing from 101 to 250 wage earners. This group employed 98,905 wage earners, or 22.1 per cent of the total. The average per establishment in this

group was 156. More than two-fifths of the total wage earners employed in the following industries were in this class of establishments: Hosiery and knit-goods mills; blast furnaces; distilleries; paint and varnish factories; pottery, terra-cotta, and fire-clay factories;

and tin-plate and terneplate mills. All of the individual industries listed in this table but not in the preceding one are those in which comparatively large establishments do most of the business, as appears from the classification according to the number of wage earners.

INDUSTRY.	Total.	ESTABLISHMENTS EMPLOYING—								
		No wage earners.	1 to 5 wage earners.	6 to 20 wage earners.	21 to 50 wage earners.	51 to 100 wage earners.	101 to 250 wage earners.	251 to 500 wage earners.	501 to 1,000 wage earners.	Over 1,000 wage earners.
		NUMBER OF ESTABLISHMENTS.								
All industries.....	15,138	1,521	7,320	3,163	1,429	733	635	199	105	33
Agricultural implements.....	55	3	12	8	10	3	13	4	1	1
Automobiles, including bodies and parts.....	75	1	14	17	9	0	10	9	2	4
Boots and shoes, including cut stock and findings.....	72	1	4	11	5	10	23	9	7	4
Brass and bronze products.....	82	3	31	29	9	5	2	3	2	2
Bread and other bakery products.....	1,467	220	1,055	151	22	13	6	.....	.....	.....
Brick and tile.....	517	4	276	141	59	27	10	.....	.....	.....
Butter, cheese, and condensed milk.....	325	27	266	24	3	4	1	.....	.....	.....
Carriages and wagons and materials.....	407	9	167	135	48	27	21	.....	.....	.....
Cars and general shop construction and repairs by steam-railroad companies.....	71	.....	2	5	6	8	13	23	13	1
Cars, steam-railroad, not including operations of railroad companies.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chemicals.....	33	2	13	12	2	1	1	1	.....	.....
Clothing, men's, including shirts.....	342	8	95	138	60	24	13	2	.....	.....
Clothing, women's.....	153	3	39	41	29	19	16	4	1	1
Coffee and spice, roasting and grinding.....	39	1	15	13	5	4	1	.....	.....	.....
Confectionery.....	114	12	42	30	14	9	7	.....	.....	.....
Copper, tin, and sheet-iron products.....	221	4	107	55	28	9	12	6	.....	.....
Electrical machinery, apparatus, and supplies.....	115	1	35	29	15	12	15	6	.....	.....
Flour-mill and gristmill products.....	673	59	520	68	13	3	1	.....	.....	.....
Foundry and machine-shop products.....	1,218	47	355	316	211	124	111	35	16	3
Furniture and refrigerators.....	228	7	51	62	67	24	14	2	1	1
Glass.....	45	.....	.....	3	5	8	16	6	1	.....
Hosiery and knit goods.....	39	.....	10	2	7	9	9	2	6	1
Iron and steel, blast furnaces.....	40	.....	1	.....	3	8	20	6	2	.....
Iron and steel, steel works and rolling mills.....	75	.....	.....	5	5	7	17	17	16	8
Leather, tanned, curried, and finished.....	36	1	11	5	12	3	3	.....	.....	.....
Liquors, distilled.....	17	3	5	5	2	1	1	.....	.....	.....
Liquors, malt.....	105	2	6	4	35	12	6	3	.....	.....
Lumber and timber products.....	1,890	28	831	376	114	30	11	.....	.....	.....
Paint and varnish.....	87	3	49	22	7	.....	6	.....	.....	.....
Paper and wood pulp.....	47	.....	.....	5	15	14	11	1	1	.....
Paper goods, not elsewhere specified.....	28	.....	9	7	5	3	1	2	1	.....
Petroleum, refining.....	10	.....	.....	2	3	1	2	1	1	.....
Pottery, terra-cotta, and fire-clay products.....	186	2	15	18	53	43	45	7	3	.....
Printing and publishing.....	1,655	326	817	351	101	88	18	3	1	.....
Slaughtering and meat packing.....	158	12	80	36	14	13	1	1	1	.....
Soap.....	44	6	16	11	5	3	1	1	1	.....
Stoves and furnaces, including gas and oil stoves.....	102	2	26	20	18	19	12	2	2	1
Tin plate and terneplate.....	4	.....	.....	.....	1	.....	3	.....	.....	.....
Tobacco manufactures.....	1,146	352	599	109	38	18	20	6	4	.....
Woolen, worsted, and felt goods, and wool hats.....	20	.....	.....	5	3	2	5	.....	.....	.....
All other industries.....	3,691	372	1,733	855	367	164	136	35	22	7
AVERAGE NUMBER OF WAGE EARNERS.										
All industries.....	446,934	17,097	35,261	46,960	52,186	98,905	69,553	70,883	56,089	1,342
Agricultural implements.....	5,997	33	90	318	227	1,270	1,287	530	1,351	4,898
Automobiles, including bodies and parts.....	12,130	36	204	336	586	1,421	3,243	1,351	4,898	2,901
Boots and shoes, including cut stock and findings.....	16,026	10	118	162	739	3,385	3,303	4,908	2,901	.....
Brass and bronze products.....	2,232	89	356	285	339	296	867	.....	.....	.....
Bread and other bakery products.....	5,972	2,119	1,389	723	920	821	.....	.....	.....	.....
Brick and tile.....	7,466	752	1,521	1,929	1,788	1,476	.....	.....	.....	.....
Butter, cheese, and condensed milk.....	1,067	329	249	82	289	118	.....	.....	.....	.....
Carriages and wagons and materials.....	8,815	511	1,440	1,706	1,983	3,166	.....	.....	.....	.....
Cars and general shop construction and repairs by steam-railroad companies.....	20,728	7	75	165	559	1,954	7,562	8,420	1,986	1,809
Cars, steam-railroad, not including operations of railroad companies.....	2,282	.....	.....	48	52	121	252	.....	.....	.....
Chemicals.....	1,132	27	160	57	58	126	704	.....	.....	.....
Clothing, men's, including shirts.....	9,950	308	1,706	1,935	1,716	2,044	618	550	1,073	.....
Clothing, women's.....	8,843	132	483	1,032	1,406	2,668	1,553	504	1,065	.....
Coffee and spice, roasting and grinding.....	762	41	162	168	280	111	.....	.....	.....	.....
Confectionery.....	2,493	110	305	455	646	977	.....	.....	.....	.....
Copper, tin, and sheet-iron products.....	6,598	281	561	895	634	2,106	2,121	.....	.....	.....
Electrical machinery, apparatus, and supplies.....	8,073	79	337	448	834	2,446	1,944	809	1,176	.....
Flour-mill and gristmill products.....	2,585	1,182	645	427	181	150	.....	.....	.....	.....
Foundry and machine-shop products.....	64,817	1,013	3,836	7,214	9,185	17,141	11,922	10,576	3,930	.....
Furniture and refrigerators.....	8,232	124	741	2,307	1,672	2,036	674	678	.....	.....
Glass.....	10,159	.....	54	164	544	2,659	2,260	3,440	1,038	.....
Hosiery and knit goods.....	3,149	25	29	229	672	1,550	644	.....	.....	.....
Iron and steel, blast furnaces.....	7,295	2	.....	112	632	3,155	2,198	1,196	.....	.....
Iron and steel, steel works and rolling mills.....	38,586	.....	66	157	534	2,867	6,780	12,149	16,033	.....
Leather, tanned, curried, and finished.....	1,884	26	53	366	219	452	.....	.....	.....	.....
Liquors, distilled.....	374	3	66	60	80	175	.....	.....	.....	.....
Liquors, malt.....	4,356	14	495	1,127	832	915	973	.....	.....	.....
Lumber and timber products.....	13,456	2,018	4,058	3,569	2,108	1,703	.....	.....	.....	.....
Paint and varnish.....	1,535	129	217	227	.....	962	.....	.....	.....	.....
Paper and wood pulp.....	4,673	88	496	88	955	1,695	439	1,000	.....	.....
Paper goods, not elsewhere specified.....	2,040	23	82	170	222	144	652	747	.....	.....
Petroleum, refining.....	1,659	.....	27	99	97	248	480	708	.....	.....
Pottery, terra-cotta, and fire-clay products.....	16,519	34	221	1,904	3,086	7,145	2,302	1,827	.....	.....
Printing and publishing.....	15,756	2,060	3,714	3,161	2,632	2,562	1,112	515	.....	.....
Slaughtering and meat packing.....	3,086	204	400	474	961	122	847	578	.....	.....
Soap.....	1,774	34	113	167	194	223	265	778	.....	.....
Stoves and furnaces, including gas and oil stoves.....	7,274	69	260	580	1,354	1,854	771	1,151	1,235	.....
Tin plate and terneplate.....	676	.....	.....	.....	78	598	.....	.....	.....	.....
Tobacco manufactures.....	12,631	1,137	1,164	1,266	1,226	2,979	2,295	2,574	.....	.....
Woolen, worsted, and felt goods, and wool hats.....	2,566	8	54	76	168	951	.....	.....	.....	.....
All other industries.....	101,286	4,128	9,733	11,814	11,498	20,713	11,980	15,126	16,284	.....

INDUSTRY.	Total.	ESTABLISHMENTS EMPLOYING—								
		No wage earners.	1 to 5 wage earners.	6 to 20 wage earners.	21 to 50 wage earners.	51 to 100 wage earners.	101 to 250 wage earners.	251 to 500 wage earners.	501 to 1,000 wage earners.	Over 1,000 wage earners.
PER CENT OF AVERAGE NUMBER OF WAGE EARNERS.										
All industries.....	100.0	3.8	7.9	10.5	11.7	22.1	15.6	15.9	12.5	
Agricultural implements.....	100.0	0.6	1.5	5.3	3.8	30.2	21.5	8.8	22.4	
Automobiles, including bodies and parts.....	100.0	0.3	1.7	3.2	4.8	11.7	26.8	11.1	40.4	
Boots and shoes, including cut stock and findings.....	100.0	0.1	0.7	1.0	4.0	24.2	20.6	30.6	18.1	
Brass and bronze products.....	100.0	4.0	15.9	12.8	15.2	13.3	38.8			
Bread and other bakery products.....	100.0	35.5	23.3	12.1	15.4	13.7				
Brick and tile.....	100.0	10.1	20.4	25.8	23.0	19.6				
Butter, cheese, and condensed milk.....	100.0	30.8	23.3	7.7	27.1	11.1				
Carriages and wagons and materials.....	100.0	5.8	16.4	19.4	22.5	35.9				
Cars and general shop construction and repairs by steam-railroad companies.....	100.0	(¹)	0.4	0.8	2.7	9.4	36.5	40.6	9.6	
Cars, steam-railroad, not including operations of railroad companies.....	100.0			2.1	2.3	5.3	11.0		79.3	
Chemicals.....	100.0	2.4	14.1	5.0	5.1	11.1	62.2			
Clothing, men's, including shirts.....	100.0	3.1	17.1	19.5	17.2	20.5	6.2	5.5	10.8	
Clothing, women's.....	100.0	1.5	5.5	11.7	15.9	30.2	17.6	5.7	12.0	
Coffee and spice, roasting and grinding.....	100.0	5.4	21.3	22.0	30.7	14.6				
Confectionery.....	100.0	4.4	12.2	18.3	25.9	30.2				
Copper, tin, and sheet-iron products.....	100.0	4.3	8.5	13.6	9.6	31.9	32.1			
Electrical machinery, apparatus, and supplies.....	100.0	1.0	4.2	5.5	10.3	30.3	24.1	10.0	14.6	
Flour-mill and gristmill products.....	100.0	45.7	25.0	10.5	7.0	5.8				
Foundry and machine-shop products.....	100.0	1.6	5.9	11.1	14.2	20.4	18.4	16.3	6.1	
Furniture and refrigerators.....	100.0	1.5	9.0	28.0	5.4	24.7	8.2	8.2		
Glass.....	100.0	0.5	0.5	1.6	20.3	26.2	22.2	33.9	10.2	
Hosiery and knit goods.....	100.0	0.8	0.9	7.3	21.3	49.2	20.5			
Iron and steel, blast furnaces.....	100.0	(¹)		1.5	3.7	43.2	30.1	16.4		
Iron and steel, steel works and rolling mills.....	100.0		0.2	0.4	1.4	7.4	17.6	31.5	41.6	
Leather, tanned, curried, and finished.....	100.0	1.4	2.8	19.4	11.6	24.0		40.8		
Liquors, distilled.....	100.0	0.8	15.0	18.0	21.4	46.8				
Liquors, malt.....	100.0	0.3	11.4	25.9	19.1	21.0	22.3			
Lumber and timber products.....	100.0	15.0	30.2	20.5	15.7	12.7				
Paint and varnish.....	100.0	8.4	14.1	14.3		62.7				
Paper and wood pulp.....	100.0		1.9	10.6	20.4	36.3	9.4	21.4		
Paper goods, not elsewhere specified.....	100.0	1.1	4.0	8.3	10.9	7.1	32.0	36.6		
Petroleum, refining.....	100.0	0.2	1.6	8.0	5.8	14.0	28.9	42.7		
Pottery, terra-cotta, and fire-clay products.....	100.0	13.1	23.6	20.1	18.7	43.3	13.9	11.1		
Printing and publishing.....	100.0	6.6	13.0	15.4	31.1	4.0	11.2	18.7		
Slaughtering and meat packing.....	100.0	1.9	6.4	9.4	10.9	12.6	14.9	43.9		
Soap.....	100.0	0.9	3.6	8.0	18.6	25.5	10.6	15.8	17.0	
Stoves and furnaces, including gas and oil stoves.....	100.0				11.5	88.5				
Tin plate and terneplate.....	100.0	9.0	9.1	10.0	9.7	23.6	18.2	20.4		
Tobacco manufactures.....	100.0	0.3	2.1	3.0	6.5	37.1			51.0	
Woolen, worsted, and felt goods, and wool hats.....	100.0	4.1	9.6	11.7	11.4	20.4	11.8	14.9	16.1	

¹ Less than one-tenth of 1 per cent.

Expenses.—As stated in the Introduction, the census does not purport to furnish figures that can be used for determining the cost of manufacture and profits. Facts of interest can, however, be brought out concerning the relative importance of the different classes of expenses which make up the total.

The table in the next column shows, for 1909, in percentages, the distribution of expenses among the classes indicated for all industries combined and for certain important industries separately. The figures on which the percentages are based appear in Table II, page 984.

The table shows that, for all industries combined, 64.2 per cent of the total expenses were incurred for materials, 24.7 per cent for services—that is, salaries and wages—and only 11 per cent for other purposes. As would be expected, these proportions vary greatly in the different industries. The large proportions shown for miscellaneous expenses for the manufacture of distilled and malt liquors and tobacco products are due to the inclusion of internal-revenue taxes. The highest percentage shown for materials, 92.7, is for flour mills and gristmills and the lowest percentage shown for salaries and wages, 2.8, is for distilleries, proportions which are due to the comparative simplicity of the manufacturing operations in each class of establishments. Other industries with a high percentage of expense for materials are: Tin plate and terneplate, slaughtering and meat packing, blast furnaces, and butter, cheese, and condensed milk.

INDUSTRY.	PER CENT OF TOTAL EXPENSES REPORTED.			
	Salaries.	Wages.	Materials.	Miscellaneous expenses.
All industries.....	5.6	19.1	64.2	11.0
Agricultural implements.....	9.3	25.6	51.2	13.9
Automobiles, including bodies and parts.....	4.4	24.1	57.5	14.0
Boots and shoes, including cut stock and findings.....	7.2	22.5	63.9	6.3
Brass and bronze products.....	7.2	23.7	61.1	8.0
Bread and other bakery products.....	5.5	17.0	68.8	8.7
Brick and tile.....	7.9	47.5	29.7	14.8
Butter, cheese, and condensed milk.....	1.9	6.2	86.0	5.9
Carriages and wagons and materials.....	6.6	24.1	59.1	10.2
Cars and general shop construction and repairs by steam-railroad companies.....	4.5	44.3	49.7	1.4
Cars, steam-railroad, not including operations of railroad companies.....	8.4	20.1	64.6	6.9
Chemicals.....	5.2	11.9	75.8	7.1
Clothing, men's, including shirts.....	7.5	18.1	57.6	16.8
Clothing, women's.....	9.2	23.7	57.1	10.0
Coffee and spice, roasting and grinding.....	7.8	3.4	79.9	8.9
Confectionery.....	7.3	13.8	67.1	11.8
Copper, tin, and sheet-iron products.....	5.6	18.5	68.1	7.7
Electrical machinery, apparatus, and supplies.....	9.9	24.8	46.6	18.7
Flour-mill and gristmill products.....	1.5	3.2	92.7	2.6
Foundry and machine-shop products.....	9.2	29.4	49.9	11.5
Furniture and refrigerators.....	7.4	29.0	50.7	13.0
Glass.....	5.6	45.9	36.8	10.8
Hosiery and knit goods.....	6.8	18.6	66.8	7.8
Iron and steel, blast furnaces.....	1.8	6.6	88.5	3.1
Iron and steel, steel works and rolling mills.....	2.3	16.1	78.2	3.5
Leather, tanned, curried, and finished.....	2.1	11.5	82.1	4.2
Liquors, distilled.....	0.8	2.0	21.8	75.4
Liquors, malt.....	8.0	15.6	31.2	45.2
Lumber and timber products.....	4.8	22.1	65.8	7.3
Paint and varnish.....	11.0	7.2	68.7	13.1
Paper and wood pulp.....	3.8	15.6	70.2	10.3
Paper goods, not elsewhere specified.....	5.7	16.1	62.7	15.5
Petroleum, refining.....	4.1	10.2	81.1	4.6
Pottery, terra-cotta, and fire-clay products.....	7.7	45.8	34.3	12.2
Printing and publishing.....	15.8	27.1	34.4	22.7
Slaughtering and meat packing.....	1.4	3.9	92.1	2.7
Soap.....	4.1	5.9	83.0	7.0
Stoves and furnaces, including gas and oil stoves.....	8.8	30.9	46.2	14.0
Tin plate and terneplate.....	1.0	5.8	92.5	0.7
Tobacco manufactures.....	3.8	17.6	47.2	31.3
Woolen, worsted, and felt goods, and wool hats.....	3.0	13.7	68.2	15.1
All other industries.....	6.6	19.1	60.4	13.9

Engines and power.—The following table shows, for all industries combined, the number of engines or other motors, according to their character, employed in generating power (including electric motors operated by purchased current), and their total horsepower at the censuses of 1909, 1904, and 1899. It also shows separately the number and horsepower of electric motors, including those operated by current generated in the manufacturing establishments.

POWER.	NUMBER OF ENGINES OR MOTORS.			HORSEPOWER.			PER CENT DISTRIBUTION OF HORSEPOWER.		
	1909	1904	1899 ¹	1909	1904	1899 ¹	1909	1904	1899
Primary power, total	25,970	11,598	11,548	1,583,155	1,116,932	783,665	100.0	100.0	100.0
Owned	13,012	11,598	11,548	1,483,628	1,088,030	767,051	93.7	97.4	97.9
Steam.....	9,246	9,063	9,739	1,362,134	1,028,665	732,006	86.0	92.1	93.4
Gas.....	3,354	2,004	1,203	103,801	35,101	14,230	6.6	3.1	1.8
Water wheels.....	373	449	556	15,777	17,781	17,848	1.0	1.6	2.3
Water motors.....	39	82	(²)	350	368	(²)	(²)	(²)	(²)
Other.....				1,850	6,116	2,067	0.1	0.5	0.4
Rented	12,958	(²)	(²)	99,527	28,002	16,614	6.3	2.6	2.1
Electric.....	12,958	(²)	(²)	93,592	23,159	8,768	5.9	2.1	1.1
Other.....				5,935	6,743	7,846	0.4	0.5	1.0
Electric motors	34,237	8,668	1,721	417,844	144,467	42,157	100.0	100.0	100.0
Run by current generated by establishment	21,279	8,668	1,721	324,252	121,308	33,389	77.6	84.0	79.2
Run by rented power	12,958	(²)	(²)	93,592	23,159	8,768	22.4	16.0	20.8

¹ Includes the neighborhood industries and hand trades, omitted in 1904 and 1909.
² Not reported. ³ Less than one-tenth of 1 per cent.

The amount of primary power used in the manufacturing industries of Ohio increased 333,267 horsepower, or 42.5 per cent, from 1899 to 1904, and 466,223 horsepower, or 41.7 per cent, from 1904 to 1909. The greater part of the increase was in owned steam and rented electric power. In 1909, as in 1904 and 1899, steam power formed the major part of the total power reported, but notwithstanding increases during the two five-year periods of 296,659 horsepower and 333,469 horsepower, respectively, the proportion which this kind of power formed of the total primary power decreased from 93.4 per cent in 1899 to 92.1 per cent in 1904, and to 86 per cent in 1909.

The more general use of gas engines in recent years is shown, there being 3,354 of such engines with an indicated capacity of 103,801 horsepower reported in 1909, as against 2,004 engines with 35,101 horsepower in 1904, and 1,203 engines with 14,230 horsepower in 1899. The figures also show that the practice of renting electric power is increasing rapidly, 93,592 horsepower, or 5.9 per cent of the total power, being of this character in 1909, as compared with 23,159 horsepower, or 2.1 per cent, in 1904, and 8,768 horsepower,

or 1.1 per cent, in 1899. The use of electric motors for the purpose of applying the power generated in the establishments is rapidly becoming more common, the horsepower of such motors increasing from 33,389 in 1899 to 121,308 in 1904 and 324,252 in 1909.

Fuel.—Closely related to the question of kind of power employed is that of the fuel consumed in generating this power, or otherwise used as material in the manufacturing processes. The following table shows the quantity of each kind of fuel used in 1909 for all industries combined and for certain selected industries:

INDUSTRY.	An-thra-cite coal (tons).	Bituminous coal (tons).	Coke (tons).	Wood (cords).	Oil, including gaso-line (barrels).	Gas (1,000 feet).
All industries	80,860	11,760,403	6,745,934	108,775	421,401	103,382,126
Agricultural implements.....		44,510	8,967	13	11,896	240,768
Automobiles, including bodies and parts.....	1,057	61,588	1,591	212	16,653	151,524
Boots and shoes, including cut stock and findings.....	844	31,722			31	68,168
Brass and bronze products.....		21,888	6,005	23	5,411	22,877
Bread and other bakery products.....	5,013	27,411	15,893	14,371	270	692,323
Brick and tile.....	2,957	953,209	1,577	43,685	1,068	1,780,136
Butter, cheese, and condensed milk.....	222	31,305	23	2,370	19	43,347
Carrriages and wagons and materials.....	204	81,415	5,986	101	4,833	63,790
Cars and general shop construction and repairs by steam-railroad companies.....	187	379,198	2,012	7,414	23,014	227,694
Cars, steam-railroad, not including operations of railroad companies.....	36	18,430	2,383		6,000	31,877
Chemicals.....		100,568	23,231	360	403	876,615
Clothing, men's, including shirts.....	35	5,470	89		808	71,453
Clothing, women's.....	889	1,983			28	44,165
Coffee and spice, roasting and grinding.....	1,111	6,801	870		1	22,232
Confectionery.....	12	10,315	408		32	45,150
Copper, tin, and sheet-iron products.....	1,731	70,844	2,895	9	1,104	318,942
Electrical machinery, apparatus, and supplies.....	1,063	65,015	2,443		6,452	615,288
Flour-mill and gristmill products.....	388	109,236		2,776	1,090	770,887
Foundry and machine-shop products.....	18,730	690,612	193,398	4,458	60,917	1,533,226
Furniture and refrigerators.....	41	68,481	489	700	193	33,434
Glass.....	89	210,815	1,397	5	4,498	12,728,097
Hosiery and knit goods.....	4	11,522				5,849
Iron and steel, blast furnaces.....		277,951	6,183,253	521	271	72
Iron and steel, steel works and rolling mills.....	105	3,460,695	136,964	10,030	73,275	64,620,638
Leather, tanned, curried, and finished.....		45,516	133		11	34
Liquors, distilled.....	18	53,837		130		744
Liquors, malt.....	1,070	320,569	1,202		310	693,380
Lumber and timber products.....	721	80,623	225	1,227	485	102,075
Paint and varnish.....	1	29,040	6,523	64	24	32,702
Paper and wood pulp.....		492,136				4,581,706
Paper goods, not elsewhere specified.....	5	15,427				6,886
Petroleum, refining.....		243,089			32,507	519,690
Pottery, terra-cotta, and fire-clay products.....	1,286	781,527		388	2,670	7,369,525
Printing and publishing.....	562	40,242	26	96	1,118	225,115
Slaughtering and meat packing.....		87,452		4	1,424	524
Soap.....	426	116,220	1,145			35,887
Stoves and furnaces, including gas and oil stoves.....	27	41,590	16,780	341	85	215,443
Tin plate and terneplate.....		14,685				99,803
Tobacco manufactures.....	47	12,152	136	46	5	37,152
Woolen, worsted, and felt goods, and wool hats.....		25,634	6,044			9,212
All other industries.....	41,079	2,495,600	123,296	18,011	165,442	4,324,578

NOTE.—In addition, there were 2,681 tons of other varieties of fuel reported.

SUPPLEMENTARY DATA REGARDING IMPORTANT INDUSTRIES.

(With statistics for laundries and custom sawmills and gristmills.)

For certain industries the Census Bureau collects, by means of special schedules, details regarding the quantity and value of materials and products and other information for securing which no provision is made on the general schedule. Certain data of this character for 21 important industries in Ohio are here presented.

Iron and steel.—Under this heading are presented the statistics of blast furnaces and of steel works and rolling mills. Ohio owes its high position in this industry to its location midway between the largest iron-ore and coking-coal deposits in the country, to a plentiful supply of natural gas and oil, and to most excellent transportation facilities. The

census of 1909 shows that it has maintained its position as the second state in the United States in the iron and steel industry, Pennsylvania alone having a greater production. The value of the products of the steel works and rolling mills was greater than the value of products of any other industry and represented 13.8 per cent of the total for the state. Blast furnaces ranked third in value of products, with 5.8 per cent of the total for the state.

Steel works and rolling mills.—The following statement shows for 1909, 1904, and 1899 the quantity and cost of the principal materials used by steel works and rolling mills, the quantity and value of the leading products, and the main features of the equipment.

MATERIAL, PRODUCT, OR EQUIPMENT.	1909	1904	1899	MATERIAL, PRODUCT, OR EQUIPMENT.	1909	1904	1899
Materials used, total cost.....	\$139,243,155	\$78,209,770	\$67,785,834				
Iron and steel:¹				Products—Continued.			
For furnaces and hot rolls—				Rolled, forged, and other classified products, steel and iron—Continued.			
Pig iron and ferroalloys—				Muck and scrap bar, produced for sale or for transfer to other works of the same company—			
Tons.....	4,209,149	2,393,614	2,031,684	Tons.....	15,875	32,464	21,261
Cost.....	\$64,441,978	\$39,040,901	\$32,833,698	Value.....	\$415,651	\$1,008,781	\$594,288
Pig iron—		(²)	(²)	Ingots for sale or for transfer to other works of the same company—			
Tons.....	4,172,114	(²)	(²)	Tons.....	32,223	2,661	.....
Cost.....	\$62,747,851	(²)	(²)	Value.....	\$613,540	\$64,836	.....
Ferroalloys — spiegeleisen, ferromanganese, etc.—				Direct castings—			
Tons.....	37,035	(²)	(²)	Tons.....	93,926	35,156	18,402
Cost.....	\$1,094,127	(²)	(²)	Value.....	\$6,343,188	\$2,308,178	\$1,428,738
Scrap, including old rails not intended for rerolling—				All other rolled and forged steel and iron, not including remanufactures of rolling-mill products:			
Tons.....	530,408	635,967	463,395	Tons.....	719,881	610,503	468,645
Cost.....	\$8,093,044	\$8,067,895	\$8,635,371	Value.....	\$21,719,984	\$18,420,294	\$17,506,555
Ingots, blooms, billets, slabs, muck and scrap bar, rerolling rails, and sheet and tin-plate bars—				All other products, including value added to steel or iron rolling-mill product by further manufacture.....	\$25,674,796	\$10,763,634	\$8,202,070
Tons.....	1,858,171	1,059,744	709,709				
Cost.....	\$40,358,367	\$23,607,315	\$17,973,277	<i>Steel production, tons.</i>			
Rolled forms for further manufacture—				Total.....	4,705,337	2,529,907	1,812,829
Skelp—				Bessemer.....	3,337,895	2,048,153	1,097,353
Tons.....	57,144	10,192	(²)	Open-hearth.....	1,366,672	480,844	114,926
Cost.....	\$1,730,190	\$315,343	(²)	Basic.....	1,306,694	426,067	62,394
Wire rods—				Acid.....	59,978	53,837	52,532
Tons.....	97,539	92,246	52,647	Crucible.....	770	.....	550
Cost.....	\$2,708,015	\$2,563,171	\$1,925,146	Equipment:			
Iron ore:				Steel plants: Daily capacity of steel furnaces and converters, tons of steel, double turn.....	21,084	13,752	8,792
Tons.....	75,857	48,239	20,434	Open-hearth furnaces—			
Cost.....	\$384,303	\$211,533	\$93,610	Number.....	66	42	27
Fuel and rent of power.....	\$7,672,641	\$4,990,891	\$6,324,732	Daily capacity, tons of steel, double turn.....	6,329	2,922	1,218
All other materials.....	\$13,854,617	\$5,412,721	\$6,324,732	Basic—			
Products, total value.....	\$107,780,043	\$111,996,673	\$98,588,619	Number.....	53	33	14
Rolled, forged, and other classified products, steel and iron:				Daily capacity, tons of steel, double turn.....	5,945	2,384	740
Tons.....	5,898,600	3,533,426	2,737,497	Acid—			
Value.....	\$172,105,247	\$101,233,039	\$90,856,549	Number.....	8	9	13
Bars and rods, not including wire rods, sheet and tin-plate bars, splice bars, and bars for reinforced concrete—				Daily capacity, tons of steel, double turn.....	384	538	478
Tons.....	704,168	274,191	472,159	Converters, Bessemer, or modified Bessemer—			
Value.....	\$21,168,583	\$8,672,928	\$17,787,412	Number.....	17	12	12
Bars for reinforced concrete—				Daily capacity, tons of steel, double turn.....	14,740	10,830	7,573
Tons.....	70,978	.....	.....	Crucible and miscellaneous steel furnaces—			
Value.....	\$2,063,084	.....	.....	Number.....	12	.....	6
Plates and sheets, not including black plates or sheets for tinning, nail and tack plates, tin-plates, fishplates, or armor plates—				Number of pots that can be used at a heat.....	96	.....	12
Tons.....	755,010	400,131	308,092	Daily capacity, tons of steel, double turn.....	15	.....	1
Value.....	\$33,800,603	\$20,700,386	\$16,110,691	Metal mixers—			
Black plates or sheets for tinning—				Number.....	13	(³)	(³)
Tons.....	111,156	.....	.....	Capacity, tons.....	3,350	(³)	(³)
Value.....	\$5,808,639	.....	.....	Rolling mills: Daily capacity of rolled steel and iron, double turn, tons.....	27,922	19,901	12,374
Skelp:							
Tons.....	739,761	431,447	4128,188				
Value.....	\$22,198,365	\$9,707,170	\$4,452,276				
Blooms, billets, and slabs, produced for sale or for transfer to other works of the same company—							
Tons.....	1,975,730	1,803,873	1,320,750				
Value.....	\$42,301,868	\$40,350,466	\$32,486,609				
Sheet and tin-plate bars, produced for sale or for transfer to other works of the same company—							
Tons.....	679,982	.....	.....		
Value.....	\$15,611,744	.....	.....		

¹ Includes material purchased or transferred to the establishment reporting from other works of the same company. ² Not reported separately.
³ In addition, steel castings or rolled steel to the value of \$708,241 were produced by establishments engaged primarily in the manufacture of products other than those covered by the industry designation. ⁴ Includes hoops, bands, and cotton ties.
⁵ In addition, 8,532 tons of steel castings were produced by establishments engaged primarily in the manufacture of products other than those covered by the industry designation. ⁶ Not reported.

Establishments which are classified as steel works and rolling mills make three classes of products: (1) Those which must be subjected to further rolling before they can be regarded as finished rolling-mill products; (2) those which have passed through all the contemplated rolling processes and may be termed finished rolling-mill products; and (3) those which have been subjected to processes beyond the rolling-mill stage. In the preceding table products of the last class, namely, those which have been subjected to processes beyond the rolling-mill stage, are not shown separately, but those finished rolling-mill products that were made in the establishment and were there converted into these higher forms have been included with the other finished products of the industry, and the enhanced value which they have secured through their manufacture beyond the rolling-mill product stage has been reported under the head of "Value of all other products."

The existence of the other two classes of products in the industry, namely, the finished products and the unfinished products, results in a certain amount of duplication in the figures for cost of materials and value of products. When ore and other materials were worked up into ingots or other similar products in one rolling mill and were then used in a second, where they were made into finished rolling-mill products, they appear twice in the cost of materials and twice in the value of products. This duplication does not exist where an establishment makes the ingots or other similar products and then rolls them into finished rolling-mill products. In this connection it should be noted that two branches of the same company frequently constitute different establishments, according to the practice of the census, and hence duplication results when the products of one branch are used as the materials of the other.

In considering the comparative figures presented in the table it should be borne in mind that 1904 was a year of partial depression in the iron and steel industry, and that neither the small increases shown in quantity and value for 1904 as compared with 1899 nor the large increases shown for 1909 as compared with 1904 are representative of the normal rate of growth for the industry.

The table is chiefly interesting as an indication of the enormous growth of the steel works and rolling mills during the 10-year period 1899-1909. The materials used increased in cost from a little less than \$68,000,000 to over \$139,000,000 and the value of products from a little over \$98,000,000 to almost \$198,000,000. The daily capacity of the steel furnaces and converters working on double turn increased from 8,792 tons to 21,084 tons, and the daily capacity of rolling mills working on double turn increased from 12,374 tons to 27,922 tons.

Blast furnaces.—The quantity and cost of materials used in blast furnaces, the production of pig iron according to grades and fuel used, and the equipment

of the plants are shown in the following statement for 1909, 1904, and 1899. The year 1904, as stated above, was one of partial depression in the iron and steel industry, and hence comparisons between the censuses of 1899 and 1904 and between the censuses of 1904 and 1909 do not give a true idea of the development of the industry during these five-year periods.

MATERIAL, PRODUCT, OR EQUIPMENT.	1909	1904	1899
Materials used, total cost.....	\$68,424,722	\$32,476,727	\$23,543,473
Iron ore:			
Tons.....	9,884,358	5,266,473	4,304,203
Cost.....	\$41,830,645	\$18,881,573	\$12,204,486
Mill cinder, scrap, etc.:			
Tons.....	368,931	328,841	192,203
Cost.....	\$1,041,384	\$604,526	\$403,347
Fluxes:			
Tons.....	2,693,423	1,464,057	1,252,632
Cost.....	\$2,597,107	\$1,348,409	\$1,003,919
Coke:			
Tons (2,000 pounds).....	6,050,491	3,432,965	2,917,388
Cost.....	\$20,433,686	\$10,548,220	\$6,889,925
All other materials.....	\$2,521,900	\$1,093,999	\$3,001,796
Products, total value.....	\$83,689,238	\$40,862,451	\$40,366,637
Pig iron:			
Tons.....	5,446,971	2,987,787	2,559,694
Value.....	\$82,048,712	\$40,705,777	\$40,308,788
All other products.....	\$1,650,526	\$156,674	\$57,879
Pig iron, classified according to fuel used:			
Coke—			
Tons.....	5,376,398	2,987,149	2,552,643
Value.....	\$80,813,570	\$40,689,717	\$40,155,498
All other (raw coal and coke and charcoal)—			
Tons.....	70,573	638	7,051
Value.....	\$1,235,142	\$10,060	\$153,350
Pig iron, classified according to disposition:			
Produced for consumption in works of company reporting—			
Tons.....	3,564,358	1,751,730	(1)
Value.....	\$53,103,589	\$23,024,236	(1)
Produced for sale—			
Tons.....	1,882,613	1,236,057	(1)
Value.....	\$28,940,123	\$17,081,541	(1)
Pig iron, classified according to grades (tons):			
Bessemer.....	2,456,131	2,120,643	1,862,136
Basic.....	798,173	200,458	93,700
Foundry.....	714,322	441,227	305,004
Forge or mill.....	60,805	60,729	240,487
Malleable Bessemer.....	364,067	127,330	(1)
White, mottled, miscellaneous, and direct castings.....	6,121	8,906	33,347
Ferrosilicon.....	47,852	10,494	19,020
Pig iron, classified according to method of delivery or castings (tons):			
Delivered in molten condition.....	2,723,700	1,105,159	(1)
Sand cast.....	1,625,073	1,361,161	(1)
Machine cast.....	945,036	510,388	(1)
Chill cast and direct castings.....	153,162	5,129	(1)
Equipment:			
Furnaces in active establishments:			
Completed stacks at end of year—			
Number.....	67	53	51
Daily capacity, tons.....	21,017	15,887	10,468
Active during the year—			
Number.....	65	53	50
Daily capacity, tons.....	20,677	15,887	(*)
In course of construction at end of year—			
Number.....	1	1	4
Daily capacity, tons.....	325	75	2,200
Pig casting machines, number.....	20	(1)	(1)
Granulated slag pits:			
Number.....	25	14	(1)
Annual capacity, tons.....	1,149,000	(*)	(1)
Gas engines operated with blast-furnace gas:			
Number.....	10	(1)	(1)
Horsepower.....	20,140	(1)	(1)

¹ Not reported. ² Includes 9,111 tons of low phosphorus. ³ Figures not available.

The total cost of materials increased from \$23,543,473 in 1899 to \$68,424,722 in 1909, a gain of 190.6 per cent. The quantity of ore, fluxes, and coke consumed in 1909 was more than double that used in 1899, and mill cinder, scrap, etc., gained 92 per cent, but none of these materials increased in quantity in as great a proportion as they increased in cost.

The total value of the products of blast furnaces was over \$83,000,000 in 1909, as compared with slightly over \$40,000,000 in 1899. The pig-iron product in

1909 consisted of 5,446,971 tons, valued at \$82,048,712, which figures represent an increase since 1899 of 112.8 per cent in quantity and of 103.6 per cent in value. Practically all the pig iron was made with coke, the mixed fuels and charcoal being used for an almost negligible quantity. Nearly two-thirds of the pig iron made in 1909 was for consumption in the works of the company reporting it, and 50 per cent of the entire product was delivered in a molten condition to the steel plants. Sixty-three and five-tenths per cent of the entire output for 1909 was Bessemer pig iron and 14.7 per cent basic, compared with 72.7 per cent Bessemer and 3.7 per cent basic in 1899.

The total number of furnaces in active establishments increased from 51 in 1899 to 67 in 1909, and their daily capacity from 10,468 to 21,017 tons. Pig casting machines were not reported until 1909, when there were 20. Internal-combustion engines to the number of 10, with a total horsepower of 20,140, were first reported in 1909 and mark a great advance in industrial economy in the utilization of what was formerly waste blast-furnace gas.

Tin plate and terneplate.—This industry is allied closely to iron and steel production, since the manufacture of the black plates used in it is a rolling-mill operation. The special statistics of the industry are given in the following table, which shows the kind, quantity, and cost of materials used, and the quantity and value of products for 1909. No comparative figures can be presented without disclosing individual operations.

MATERIAL OR PRODUCT	1909
Materials used, total cost	\$7,155,144
Black plates or sheets:	
Pounds.....	213,704,915
Cost.....	\$5,143,579
Coating metals:	
Pounds.....	8,064,988
Cost.....	\$1,587,708
<i>In condition purchased:</i>	
Pig tin—	
Pounds.....	3,872,221
Cost.....	\$1,142,704
Pig lead—	
Pounds.....	249,000
Cost.....	\$10,612
Terne mixture—	
Pounds.....	3,943,767
Cost.....	\$434,482
All other materials.....	\$423,767
Products, total value	\$7,889,367
Tin plate and terneplate:	
Pounds.....	212,737,039
Value.....	\$7,669,423
All other products.....	\$219,944

In 1909 Ohio ranked third among the states of the United States in this industry, reporting 16.4 per cent of the total value of products for the country as a whole.

Slaughtering and meat packing.—The following tabular statement shows, for the slaughtering and meat-packing industry, the kind, quantity, and cost of the principal materials used and the quantity and value of the leading products with the exception of sausage, for which the value only is available.

MATERIAL OR PRODUCT.	1909	1904	1899
Materials used, total cost	\$44,347,162	\$25,810,709	\$18,007,851
Beeves slaughtered:			
Number.....	265,191	189,613	98,636
Cost.....	\$11,613,314	\$6,490,507	\$3,629,833
Calves slaughtered:			
Number.....	150,223	80,906	31,971
Cost.....	\$1,599,585	\$665,385	\$247,280
Sheep slaughtered:			
Number.....	229,985	148,418	70,739
Cost.....	\$872,989	\$502,029	\$224,559
Hogs slaughtered:			
Number.....	1,725,285	1,447,778	1,283,597
Cost.....	\$24,547,970	\$14,954,587	\$11,189,787
Dressed meat, purchased.....	\$2,415,657	\$1,497,516	\$1,143,022
Fuel and rent of power.....	\$224,429	\$125,775	\$89,362
All other materials.....	\$3,073,218	\$1,074,910	\$1,483,508
Products, total value	\$50,804,100	\$28,154,718	\$20,787,687
Beef, fresh:			
Pounds.....	119,597,666	89,925,370	43,652,450
Value.....	\$10,047,217	\$5,907,126	\$3,116,193
Beef, salted or cured:			
Pounds.....	4,450,976	2,434,645	4,692,000
Value.....	\$328,334	\$175,972	\$240,740
Veal:			
Pounds.....	12,921,896	6,680,682	2,464,318
Value.....	\$1,498,587	\$610,883	\$234,817
Mutton:			
Pounds.....	7,738,777	5,408,034	2,277,155
Value.....	\$703,364	\$472,931	\$212,592
Pork, fresh:			
Pounds.....	60,320,259	49,033,932	46,226,099
Value.....	\$6,950,364	\$4,514,599	\$3,354,714
Pork, salted or cured:			
Pounds.....	121,088,333	116,433,401	114,350,050
Value.....	\$16,202,666	\$10,182,724	\$9,301,993
Sausage, fresh or cured.....	\$3,346,493	\$1,711,463	\$1,133,417
All other fresh meat:			
Pounds.....	6,728,033	4,155,474	242,080
Value.....	\$493,467	\$241,956	\$21,408
Lard:			
Pounds.....	58,518,712	49,180,666	32,398,829
Value.....	\$6,566,768	\$3,427,690	\$2,105,391
Tallow, oleo stock, and stearin:			
Pounds.....	11,088,893	(¹)	(¹)
Value.....	\$640,001	(¹)	(¹)
Fertilizers and fertilizer materials:			
Tons.....	9,103	7,517	4,008
Value.....	\$166,354	\$104,002	\$58,646
Hides:			
Number.....	410,573	254,572	130,595
Pounds.....	16,900,033	11,638,587	5,728,737
Value.....	\$1,970,069	\$1,037,295	\$514,769
Pelts:			
Number.....	232,775	148,118	(¹)
Value.....	\$194,720	\$101,427	(¹)
Amount received for custom or contract work.....	\$16,484	\$11,780	\$1,500
All other products.....	\$1,619,122	\$694,780	\$471,487

¹ Figures not available.

The total cost of the materials used in the slaughtering and meat-packing industry in 1909 was \$44,347,162, of which \$38,633,858 represented the cost of animals slaughtered, \$2,415,657 the cost of dressed meat purchased, \$224,429 the expenditures for fuel and rent of power, and \$3,073,218 the cost of all other materials. The cost of the dressed meat purchased may be to some extent a duplication, because the animals purchased by an establishment for slaughtering may be sold to a second establishment in the form of dressed meat for packing, and hence may enter twice into the cost of materials of the industry and twice into its value of products. If this element of duplication is ignored, it appears that the cost of animals slaughtered and dressed meat purchased formed 92.6 per cent of the total cost of materials.

Comparisons with the figures for earlier censuses show that for all classes of materials there was a substantial increase between 1899 and 1909. "All other materials" decreased in value between 1899 and 1904, but since the later year their cost has almost trebled.

The total value of products of the industry was \$50,804,100. Salted or cured pork was the principal

product, having a value of over \$16,000,000, as compared with about \$10,000,000 for fresh beef. Hides were the most important by-product, having a value of almost \$2,000,000.

All products except salted or cured beef, so far as figures are available, show a substantial gain between 1899 and 1909 in both quantity and value, and salted or cured beef shows a considerable increase in value, although the quantity decreased.

A comparison of the figures for 1909 with those for 1904 shows increases for all commodities; in general, the values have increased more rapidly than the quantities, thus reflecting the increase in prices that has been taking place in recent years.

Flour-mill and gristmill products.—Ohio was fifth in 1909 among the states in the manufacture of flour-mill and gristmill products, reporting 5.4 per cent of the total value for the country. It also ranked fifth in the value of wheat flour produced and in the quantity of corn and buckwheat ground. Among the industries of the state itself the industry was sixth and contributed 3.4 per cent of the total value reported for all manufactured products. The tabular statement following gives the quantity and value of products for 1909, 1904, and 1899:

PRODUCT.	1909	1904	1899
Total value	\$48,093,353	\$40,855,566	\$35,077,553
Wheat flour:			
White—			
Barrels.....	5,713,058	5,606,458	
Value.....	\$30,469,760	\$27,764,108	7,113,343
Graham—			\$25,140,728
Barrels.....	10,478	21,721	
Value.....	\$48,349	\$92,495	
Corn meal and corn flour:			
Barrels.....	865,250	1,006,703	1,291,970
Value.....	\$2,528,843	\$2,432,026	\$2,259,483
Rye flour:			
Barrels.....	33,215	43,691	39,133
Value.....	\$146,786	\$181,105	\$114,288
Buckwheat flour:			
Pounds.....	7,436,813	3,599,618	3,405,955
Value.....	\$180,267	\$93,987	\$81,575
Hominy and grits:			
Pounds.....	80,855,375	69,380,258	5,449,650
Value.....	\$1,247,605	\$699,171	\$54,613
Feed:			
Tons.....	269,532	203,278	306,943
Value.....	\$7,263,751	\$4,151,804	\$4,652,016
Offal:			
Tons.....	232,769	266,726	195,489
Value.....	\$5,142,619	\$4,821,108	\$2,383,732
All other products	\$1,075,373	\$619,722	\$491,218

White flour was the principal product reported, contributing 63.3 per cent of the total value of products in 1909, 68 per cent in 1904, and 71.7 per cent in 1899. The next in value was feed, with 15.1 per cent of the total in 1909, compared with 10.2 per cent in 1904 and 13 per cent in 1899. Hominy and grits contributed 2.6 per cent of the total in 1909, 1.7 per cent in 1904, and about two-tenths of 1 per cent in 1899. The decrease of 14.1 per cent from 1904 to 1909 in the quantity of corn products was counterbalanced by the greater production of feed, which was derived largely from corn. The value of all products in 1909 was higher per unit of quantity than in 1904 or 1899, except in the case of buckwheat flour, where the value per unit has remained practically the same. Less offal was

reported in 1909 than in 1904, but the total value was greater.

Of the 593 establishments grinding wheat in 1909, 10 reported over 100,000 barrels of wheat flour for the census year; 33 reported between 20,000 and 100,000 barrels; 188, from 5,000 to 20,000; 297, from 1,000 to 5,000; and 65, less than 1,000 barrels. The number of pairs of rolls reported was 5,643, and the number of runs of stone and steel burrs 453.

Printing and publishing.—Among the states Ohio ranked fifth in the value of the products of printing and publishing establishments. The industry ranked seventh among those in the state in 1909, and it showed an increase in value of products of 33 per cent over 1904 and of 31.4 per cent over 1899. The following statement gives the number and circulation of the principal kinds of newspapers and periodicals for the last three censuses:

PERIOD OF ISSUE.	NUMBER OF PUBLICATIONS.			AGGREGATE CIRCULATION PER ISSUE.		
	1909	1904	1899	1909	1904	1899
Total	1,181	1,250	1,069	10,753,143	9,321,545	7,487,358
Daily.....	184	190	170	1,542,855	1,357,135	1,224,715
Sunday.....	25	23	30	645,869	544,416	(*)
Semiweekly and tri-weekly.....	60	53	61	131,808	113,749	224,461
Weekly.....	699	781	692	2,913,730	2,747,511	2,411,172
Monthly.....	152	143	90	2,685,470	2,006,287	1,420,501
Quarterly.....	37	40	15	2,288,134	2,169,200	1,795,609
All other classes.....	24	20	11	545,279	383,247	393,900

*Included in circulation of dailies.

In the number of publications there was a net decrease of 69 from 1904 to 1909. The daily newspapers decreased by 6, the weekly newspapers and weekly periodicals by 82, and the quarterlies by 3, but there was an increase of 2 in the Sunday newspapers, of 7 in the semiweeklies and triweeklies, of 9 in the monthly publications, and of 4 in "All other classes." The reduction was wholly among publications in English, which decreased 90; the foreign and the foreign and English increased by 21.

In circulation of all publications the increase for the 10-year period 1899-1909 was 44 per cent, and for the 5-year period 1904-1909, 15.4 per cent. Of the different specified publications, the greatest percentage of gain both for the decade and for the 5-year period 1904-1909 was in the circulation of monthlies. These increased 89.1 per cent from 1899 to 1909 and 33.9 per cent from 1904 to 1909. Quarterlies increased their circulation 27.4 per cent during the decade and 5.5 per cent during the 5-year period 1904-1909. Daily newspapers increased their circulation 26 per cent in the decade and 13.7 per cent from 1904 to 1909.

The circulation of weekly newspapers decreased from 1904 to 1909, but the circulation of weekly periodicals increased materially. As these two are combined, a net increase is shown of 20.8 per cent for the decade 1899-1909 and of 6 per cent for the five-year period 1904-1909.

The circulation of Sunday newspapers from 1904 to 1909 increased 18.6 per cent. The circulation of semiweeklies and triweeklies combined decreased 41.3 per cent during the 10 years, but increased 15.9 per cent during the later five-year period, 1904-1909.

The following statement gives the circulation for 1909 of the newspapers and periodicals published in English and of those published in foreign languages, including those published in both foreign languages and English:

PERIOD OF ISSUE.	TOTAL.		IN ENGLISH.		IN FOREIGN LANGUAGES. ¹	
	Num-ber.	Aggregate circulation per issue.	Num-ber.	Aggregate circulation per issue.	Num-ber.	Aggregate circulation per issue.
Total.....	1,181	10,753,143	1,052	9,919,063	129	834,080
Daily.....	184	1,542,855	173	1,453,190	11	89,665
Sunday.....	25	645,809	18	588,729	7	57,140
Semiweekly and tri-weekly.....	60	131,806	52	111,438	8	20,368
Weekly.....	699	2,913,730	630	2,543,916	69	369,814
Monthly.....	152	2,685,470	133	2,550,482	19	134,988
Quarterly.....	37	2,288,134	29	2,181,180	8	106,954
All other classes.....	24	545,279	17	520,128	7	25,151

¹Includes those printed in English and a foreign language.

Of the aggregate circulation, 92.2 per cent was that of newspapers and periodicals published in English. This percentage is slightly smaller than that for 1904, when the circulation of publications in English formed 93.4 per cent of the total. The increase of publications in foreign languages, including those in foreign and English, was, however, slight. The circulation of German publications in 1909 constituted 67.5 per cent of the total circulation in foreign languages.

Automobiles, including bodies and parts.—Ohio ranked second among the states in the manufacture of automobiles, including bodies and parts, both in 1909 and 1904. The industry ranked eighth among the industries of the state, with a total value of products of \$38,838,754. This represents an increase of \$32,480,590, or 510.9 per cent, in value of products.

The number and value of the automobiles manufactured, classified by type and by power, are shown for 1904 and 1909 in the next table. No figures are available for 1899, for in that year the industry was included with that of carriages and wagons.

The total number of automobiles manufactured in Ohio in 1909 was 14,299, and they were valued at \$23,550,112. The number was 409.2 per cent greater than in 1904 and the value 353.1 per cent greater. In 1904 practically all machines reported were classed as passenger or pleasure vehicles, but in 1909 the commercial or business type of car was made in such numbers as to form 4.7 per cent of the total number, and ambulances, omnibuses, and similar cars formed 6.3 per cent.

In 1909 Ohio was first among the states in the number and value of electric machines, and in the number and value of steam machines, manufacturing 42.9 per cent and 72.1 per cent, respectively, of the

total number reported for the country. As all the steam cars were made by one establishment, they are included under "Electric and steam," to avoid the disclosure of the operations of an individual establishment. The item of "All other products," which includes the manufacture of additional parts, supplies, and other items not called for separately on the schedule, shows an enormous increase—from \$1,160,804 in 1904 to \$15,288,642 in 1909, or 1,217.1 per cent.

Of the total number of automobiles made in 1909, 76.6 per cent were to be operated with gasoline, and their value formed 76.4 per cent of the total value of all machines manufactured. The number of gasoline machines manufactured increased 504.5 per cent and their value 367.1 per cent over 1904. The increase in the electric and steam automobiles was 236.2 per cent in number and 313.1 per cent in value.

PRODUCT.	1909		1904	
	Num-ber.	Value.	Num-ber.	Value.
Total value.....		\$38,838,754		\$6,358,184
Automobiles, total.....	14,299	23,550,112	2,808	5,197,360
Gasoline.....	10,947	17,998,332	1,811	3,853,621
Electric and steam.....	3,352	5,550,780	997	1,343,739
Passenger vehicles.....	13,628	22,921,062	12,808	15,197,360
Buggies, runabouts, and touring cars.....	11,539	18,356,985	12,808	15,197,360
Limousines, cabs, etc.....	1,185	2,775,891		
All other (omnibuses, ambulances, etc).....	904	1,788,186		
Business vehicles (merchandise).....	871	629,050		
Delivery wagons.....	469	242,105		
Trucks.....	202	380,945		
All other products, including repair work.....		15,288,642		1,160,804

¹Includes "Business vehicles," to avoid disclosure of individual operations.

A classification by horsepower rating shows that the greatest number of machines in 1909 were of 30 but less than 50 horsepower. Such machines numbered 4,742 and formed nearly one-third of the total. The next largest number, 3,825, consisted of machines rated at 20 but less than 30 horsepower. Those of from 10 to 19 horsepower, inclusive, numbered 3,716, and those of less than 10 horsepower, 1,542. The higher power machines were fewer in number, 461 being rated at 50 but less than 90 horsepower, and 13 at 90 horsepower or more. No rating by horsepower was secured in 1904, so that comparative data are not possible.

Lumber and timber products.—In the following tabular statement are shown the quantities of rough lumber, lath, and shingles produced in 1909 and 1899:

PRODUCT.	QUANTITY.	
	1909	1899
Rough lumber..... M feet b. m.	542,004	990,497
Lath..... thousands.	17,508	18,519
Shingles..... thousands.	3,227	13,605

The production of lumber in Ohio decreased 45.2 per cent during the decade 1899-1909, that of lath 5.5 per cent, and that of shingles 76.3 per cent. This

decline is due in the main to the decreasing supply of merchantable timber.

The state dropped in rank from fourteenth in 1899 to twenty-seventh in 1909 in the production of rough lumber from all species, and now ranks tenth in the total production of hardwood lumber in the United States. Oak formed 47.8 per cent of the total output of lumber in the state in 1909 and 62.3 per cent in 1899, only seven states exceeding Ohio in the output of oak lumber in the latter year. Ohio ranked first in 1909 in the cut of walnut lumber, contributing 18.6 per cent of the total production of this species in the United States. Other hardwoods cut in considerable quantities in the state were beech, maple, yellow poplar, elm, ash, and hickory, which ranked in production in the order named.

Boots and shoes.—The following table gives the number and kinds of boots, shoes, and slippers produced by the boot and shoe factories of Ohio in 1909, 1904, and 1899:

PRODUCT.	NUMBER OF PAIRS.		
	1909	1904	1899
Total	18,908,915	18,263,416	13,340,679
Boots and shoes.....	17,693,316	18,093,299	13,507,978
Men's.....	1,702,194	1,661,202	527,241
Boys' and youths'.....	1,372,330	1,590,568	974,257
Women's.....	11,154,083	9,797,093	8,204,972
Misses' and children's.....	3,464,709	5,014,430	3,801,508
Slippers.....	1,147,239	192,053	275,991
All other.....	65,360	8,064	65,710

The boot and shoe industry in Ohio did not show as large an increase from 1904 to 1909 in the total number of pairs produced as it did from 1899 to 1904, yet all kinds of shoes except boys' and youths' and misses' and children's were manufactured in larger quantities in 1909 than in 1904. More women's shoes were manufactured than any other kind and they formed 59 per cent of the total product. The number of pairs produced increased 1,356,990, or 13.9 per cent, between 1904 and 1909, which was the largest absolute increase reported for any class. The largest relative increase, however, was in the number of pairs of slippers, which increased 955,186, or 497.4 per cent.

In the quantity and value of boot and shoe products Cincinnati stood sixth in 1909 among the cities of the United States, with a production valued at nearly \$15,000,000. Portsmouth and Columbus have also become prominent in this industry, both reporting products valued at more than \$5,000,000 for that year.

The next table is a statement of the various kinds of footwear, by method of manufacture, for 1909 only.

Of the total number of pairs of boots and shoes manufactured, 9,706,685, or 54.9 per cent, were made by the McKay method and 5,760,738, or 32.6 per cent, by the machine or hand welt method. Men's shoes were made principally by the machine or hand welt method, and misses' and children's by the McKay method.

PRODUCT.	NUMBER OF PAIRS, BY METHOD OF MANUFACTURE.			
	Total.	Machine or hand welt.	McKay.	All other methods. ¹
Boots and shoes.....	17,693,316	5,760,738	9,706,685	2,225,893
Men's.....	1,702,194	1,050,218	235,457	416,519
Boys' and youths'.....	1,372,330	420,086	570,888	381,356
Women's.....	11,154,083	4,038,641	6,073,809	1,041,633
Misses' and children's.....	3,464,709	250,893	2,826,531	387,285
Slippers and infants' shoes.....	1,215,599	67,376	580,125	568,098

¹ Includes "wire screw or metal-fastened," "turned," and "wooden-pegged."

Carriages and wagons and materials.—The following table shows the number and value of the various products of the carriage and wagon industry for 1909, 1904, and 1899:

PRODUCT.	1909	1904	1899
Total value	\$21,949,459	\$24,002,500	\$22,803,197
Carriages (family and pleasure):			
Number.....	135,877	199,428	213,692
Value.....	\$8,126,285	\$11,373,340	\$11,257,362
Wagons:			
Number.....	28,882	40,905	44,315
Value.....	\$2,733,606	\$2,703,560	\$2,556,063
Business—			
Number.....	12,187	7,988	.....
Value.....	\$1,507,161	.....	.....
Farm—			
Number.....	16,540	52,645	.....
Value.....	\$952,252	.....	.....
Government, municipal, etc.—			
Number.....	146	272	.....
Value.....	\$274,193	.....	.....
Public conveyances:			
Number.....	657	217	41
Value.....	\$206,458	\$107,141	\$16,000
Sleighs and sleds:			
Number.....	7,589	8,479	3,555
Value.....	\$78,542	\$52,106	\$25,761
All other products, including parts and repair work.....	\$10,804,568	\$9,706,231	\$8,943,011

Ohio still ranks first among the several states in the production of carriages and wagons, notwithstanding a decrease in the value of products from 1904 to 1909 of \$2,053,041. Inspection of the figures for the different classes shows that all the decrease in value results from the decreased production of family and pleasure carriages. In 1899, 213,692 carriages were produced, with a value of \$11,257,362, and they contributed 49.4 per cent of the total value of the products of the industry, but in 1909 only 135,877 carriages were produced, with a value of \$8,126,285, and they contributed only 37 per cent of the total value of products of the industry. This change is accounted for largely by the enormous development of the automobile industry, which has caused many carriage makers either to go out of business or to devote their attention to automobile manufacture. The decreased numbers of farm wagons manufactured and the great increase in the value of all other products, including parts and repair work, are other interesting features of the table.

Pottery, terra-cotta, and fire-clay products.—At each of the last three censuses Ohio was first among the states in the manufacture of pottery, terra-cotta, and fire-clay products. At the census of 1909 the value of these products comprised 27.8 per cent of the total for the industry in the United States. There was an increase of \$2,622,432, or 14.1 per cent, in 1909 over 1904, and of \$9,322,047, or 78.7 per cent, over

1899. The following table gives the products by kind and value for 1909, 1904, and 1899:

PRODUCT.	1909	1904	1899
Total value.....	\$21,173,272	\$18,550,840	\$11,851,225
Pottery.....	13,416,356	11,904,210	6,994,805
Red earthenware.....	146,137	181,736	164,798
Stoneware and yellow and Rockingham ware.....	1,806,798	1,140,718	741,685
White ware, including C. C. ware, white granite ware, semiporcelain ware, and semivitreous ware.....	8,884,189	8,446,868	5,033,874
Sanitary ware, including solid porcelain bath tubs, laundry tubs, etc.....	310,254	197,225	.....
Porcelain electrical supplies.....	1,149,694	584,243	199,314
Other pottery products.....	1,128,284	1,347,420	864,134
Terra-cotta and fire-clay products.....	7,756,916	6,640,630	4,856,420
Fire brick—			
Thousand.....	103,148	84,253	99,129
Value.....	\$1,730,401	\$1,240,826	\$976,633
Sewer pipe.....	3,009,798	2,939,772	1,680,724
Fireproofing.....	804,637	577,014	340,080
Tile, not drain.....	1,912,343	971,785	568,094
Stove lining.....	28,803	(?)	7,563
Other terra-cotta and fire-clay products ¹	122,010	884,872	1,267,451
All other products.....	153,924	32,361	12,805

¹ Includes refractory block or tile, boiler and locomotive tile and tank blocks, and other refractory products (9-inch equivalent).
² Not reported separately.
³ Includes common, fancy or ornamental, vitrified, and paving brick or block and drain tile to the value of \$322,228 in 1904 and \$448,959 in 1899.

The manufacture of pottery products is the more important branch of the industry, and in 1909 it furnished 63.4 per cent of the total value of the products. This represents a very slight decrease in the relative importance of the pottery products since 1904, in which year their value formed 64.2 per cent of the total, but it represents a considerable increase since 1899, when the proportion was 59 per cent. The value of the pottery products has increased materially since 1899, being \$21,173,272 in 1909 as contrasted with \$11,851,225 in 1899.

White ware, including C. C. (cream colored) ware, white granite, semiporcelain, and semivitreous ware, was the leading pottery product in Ohio. In 1909 the value of such ware reported for the state was \$8,884,189, which is 64.7 per cent of the total reported for the United States. The increase in the value of this product was small between 1904 and 1909, but between 1899 and 1904 it was \$3,412,994, or 67.8 per cent.

Red earthenware and those pottery products included in "Other pottery products" showed a decrease between 1904 and 1909 in the value of products, but the other classes showed increases as follows: Stoneware and yellow and Rockingham ware, 57.6 per cent; sanitary ware, 57.3 per cent; and porcelain electrical supplies, 96.3 per cent. Of the total value of the stoneware and yellow and Rockingham ware made in the United States, Ohio reported 45.2 per cent, and of the porcelain electrical supplies, 37.6 per cent.

Sewer pipe was the leading terra-cotta and fire-clay product, the value of that produced in Ohio forming about one-third of the total for the country as a whole. Its production, however, did not increase materially between 1904 and 1909, the percentage of increase being only 2.4. The proportion which the value of

sewer pipe formed of the total value of the products of this branch of the industry fell, moreover, from 44.2 per cent in 1904 to 38.8 per cent in 1909. All the other products reported separately showed considerable increase. The value of tile, not drain, increased 96.8 per cent between 1904 and 1909 and 238.4 per cent between 1899 and 1909. The value of fireproofing increased 39.4 per cent between 1904 and 1909 and 132.5 per cent between 1899 and 1909. Fire brick, the only item for which quantities are given, shows a gain of 18,895 thousand in number and \$489,575 in value from 1904 to 1909 and of 15,124 thousand in number and \$264,133 in value for the prior census period. The value of fire brick in 1909 formed 22.3 per cent of the value of terra-cotta and fire-clay products.

Brick and tile.—The value of the brick and tile produced in 1909 was \$2,221,700, or 31.1 per cent, greater than in 1904, and \$4,728,143, or 102.1 per cent, greater than in 1899. The following table gives the products classified by kind, quantity, and value for the last three censuses:

PRODUCT.	1909	1904	1899
Total value.....	\$9,357,730	\$7,136,030	\$4,029,587
Brick.....	\$6,901,161	\$5,355,808	\$3,743,365
Common—			
Thousand.....	420,999	1,459,443	1,450,047
Value.....	\$2,429,879	\$2,675,314	\$2,341,063
Vitrified, paving, etc.—			
Thousand.....	324,530	167,888	118,804
Value.....	\$3,113,128	\$1,714,293	\$924,585
Front, including fancy-colored—			
Thousand.....	130,684	82,552	45,515
Value.....	\$1,393,787	\$856,431	\$436,380
Fancy or ornamental.....	\$24,307	\$109,770	\$40,837
Drain tile.....	\$2,032,528	\$1,111,188	\$336,631
All other products.....	\$304,041	\$1,069,084	\$49,591

¹ Includes enameled brick, \$3,000; sand-lime brick, \$8,750; and fire brick, \$48,046.

Vitrified paving brick or block contributed 33.3 per cent of the total value of the products of the entire industry in 1909, and showed an increase in value of \$1,398,835, or 81.6 per cent, between 1904 and 1909. The figures for the three censuses for common building brick, including common brick used for paving and hollow building brick, are not strictly comparable, because hollow building brick was not included under this item previous to the census of 1909. Had this class of brick been omitted from the item "Common brick" in 1909, the decrease would be still greater. Front brick showed an increase in value of 62.7 per cent between 1904 and 1909, and for the more recent year contributed 14.9 per cent of the total value of products for this industry as compared with 12 per cent in 1904.

The value of fancy or ornamental brick decreased 77.8 per cent between 1904 and 1909. The value of drain tile, which represented 15.6 per cent of the total value of brick and tile products in 1904, showed an increase of \$921,390, or 82.9 per cent, between 1904 and 1909, and in 1909 formed 21.7 per cent of the total for the industry.

Soap.—The following table gives for this industry the kind, quantity, and value of the principal varieties of soap, as shown at the censuses of 1909 and 1904. In 1899 this industry was classified with candles under "Soap and candles;" therefore no figures are included for that census.

PRODUCT.	1909	1904
Total value.....	\$17,077,308	\$11,791,223
Hard soap:		
Pounds.....	255,943,442	268,786,287
Value.....	\$14,539,331	\$10,245,313
Soft soap:		
Pounds.....	1,268,533	1,123,100
Value.....	\$36,449	\$39,634
Glycerin:		
Pounds.....	11,174,661	8,843,638
Value.....	\$1,751,070	\$995,009
All other products, including special soap articles.....	\$700,458	\$511,267

Ohio, with a gain of \$5,286,085, or 44.8 per cent, from 1904 to 1909, in the value of soap products, remained the third state of the Union in the industry. The quantity of hard soaps produced decreased slightly, but their value increased considerably. Statistics for the different kinds of soap can not be shown separately, as to do so might reveal the operations of an establishment which reported by far the greater part of the production of a number of the varieties. It can be said, however, that Ohio led the country in 1909 in olein soap and was second in tallow soap. Soft soap was shown to have increased in quantity but to have decreased in value. The value of all other products, including special soap articles, increased.

Paper and wood pulp.—In the value of paper and wood pulp produced, Ohio ranked sixth among the states in 1909. The industry stood twenty-second among those of the state in value of products, and in that respect shows an increase of \$6,003,733, or 54.8 per cent. The next tabular statement shows the materials and products, by kind, quantity, and value, for the last three censuses.

Of the 47 establishments reporting in 1909 only four made both paper and pulp. Only one mill made pulp for sale, and of the four mills making and consuming pulp, no more than two used the same processes, hence figures for wood pulp sold and for the various classes of wood pulp produced can not be presented without disclosing individual operations. It may be said, however, that a little pulp was manufactured by the grinding process but that most of it was made by chemical processes, principally the sulphite. The principal kinds of wood used were spruce and hemlock.

The cost of the wood pulp purchased slightly more than doubled from 1904 to 1909, and the quantity of wood pulp made by establishments consuming it decreased. Of the specified kinds of paper produced, book paper showed the greatest percentage of increase from 1904 to 1909 both in output and value, fine paper, which includes writing paper, ranking second. Heavy wrapping paper decreased both in quantity and value, and straw wrapping in quantity only. There was an increase in value of strawboard during the 10-year

period, with a decreased output. For the period 1904-1909, however, there was a decrease in value, accompanied with an increase of output. News paper is not shown separately in the statement, as it was the product of but two mills.

The yearly capacity of the paper machines reported increased from 212,639 tons in 1899 to 281,075 in 1904 and 414,650 in 1909.

MATERIAL, PRODUCT, OR MACHINE.	1909	1904	1899
Materials used, total cost.....	\$10,898,285	\$6,153,761	\$3,766,572
Pulp wood.....	\$443,296	\$189,724	\$104,500
Wood pulp, purchased:			
Tons.....	80,201	40,040	28,691
Cost.....	\$3,743,972	\$1,585,569	\$867,637
Ground—			
Tons.....	4,778	2,782	5,186
Cost.....	\$110,372	\$67,829	\$96,899
Sulphite fiber—			
Tons.....	47,167	27,344	12,647
Cost.....	\$2,292,178	\$1,109,884	\$410,693
Other chemical fiber—			
Tons.....	28,256	9,914	8,858
Cost.....	\$1,341,422	\$417,846	\$360,045
Rags, including cotton and flax waste and sweepings:			
Tons.....	33,744	22,877	19,416
Cost.....	\$893,609	\$556,545	\$374,643
Old and waste paper:			
Tons.....	93,239	55,475	26,087
Cost.....	\$1,286,182	\$606,328	\$308,894
Manila stock, including jute bagging, rope, waste, threads, etc.:			
Tons.....	25,949	12,268	14,994
Cost.....	\$856,420	\$354,112	\$395,370
Straw:			
Tons.....	70,322	71,936	93,127
Cost.....	\$935,951	\$327,355	\$274,447
Fuel and rent of power.....	\$1,049,097	\$709,028	\$485,285
All other materials.....	\$2,289,858	\$1,825,110	\$966,796
Products, total value.....	\$16,965,260	\$10,961,527	\$6,543,613
Book, cover, plate, and coated paper:			
Tons.....	75,607	45,604	16,682
Value.....	\$6,752,103	\$4,019,447	\$1,146,015
Writing and other fine paper:			
Tons.....	19,579	8,722	4,095
Value.....	\$2,306,616	\$1,057,920	\$578,172
Wrapping paper:			
Tons.....	42,548	44,037	49,854
Value.....	\$2,389,332	\$1,786,172	\$2,303,199
Manila (rope, jute, tag, etc.)—			
Tons.....	12,393	10,056	18,579
Value.....	\$1,204,635	\$777,055	\$1,368,700
Heavy (mill wrappers, etc.)—			
Tons.....	5,725	6,314	5,646
Value.....	\$147,869	\$164,873	\$175,473
Straw—			
Tons.....	8,682	9,078	10,619
Value.....	\$217,050	\$207,610	\$211,234
All other—			
Tons.....	15,748	18,589	15,010
Value.....	\$759,678	\$636,634	\$547,792
Boards:			
Tons.....	106,016	60,269	63,886
Value.....	\$3,159,290	\$1,716,740	\$1,167,360
Strawboard—			
Tons.....	37,710	33,953	40,531
Value.....	\$853,100	\$866,379	\$900,038
All other boards—			
Tons.....	68,306	26,316	13,355
Value.....	\$2,306,190	\$849,361	\$367,322
Building, roofing, and sheathing paper:			
Tons.....	18,974	15,400	7,275
Value.....	\$598,680	\$499,692	\$213,603
All other products.....	\$1,759,939	\$1,881,556	\$1,135,164
Wood pulp produced (including that used in mills where manufactured), tons.....	25,935	29,274	13,805
Equipment:			
Paper machines:			
Total number.....	118	99	81
Capacity, yearly, tons.....	414,650	281,075	212,639
Fourdrinier—			
Number.....	63	37	33
Capacity per 24 hours, tons.....	575	299	(1)
Cylinder—			
Number.....	55	50	48
Capacity per 24 hours, tons.....	717	554	(1)
Pulp equipment:			
Grinders, number.....	5	5	7
Digesters, total number.....	11	8	8
Sulphite fiber, number.....	8	8	(2)
Soda fiber, number.....	3	.....	(2)
Capacity, yearly, tons of pulp.....	54,400	34,150	29,436
Ground, tons.....	7,800	5,321	(1)
Sulphite, tons.....	43,600	28,829	(2)
Soda, tons.....	3,000	.....	(2)

¹ Not reported.

² Not reported separately.

Agricultural implements.—For the last two census periods Ohio has been third among the states in the value of its production of agricultural implements, and the industry is of sufficient importance to rank twenty-fifth among those of the state. The value of products in 1909 represents an increase of 12 per cent over 1904 and of 3.3 per cent over 1899. The next table gives for 1909 and 1904 the value of the products manufactured, distributed according to the classes of implements made, but for 1899 only the combined total value of these products is given. Under the heading "All other products" are included miscellaneous agricultural implements and parts which can not be placed in any of the four groups distinguished in the table and also a large number of products not distinctively agricultural, although made by manufacturers of agricultural implements, such as wind-mills, carriages and wagons, engines, presses, lawn swings, etc. The value of these products classified as "All other products" represents more than a third of the total value for the industry in the state.

PRODUCT.	1900	1904	1899
Total value	\$14,440,461	\$12,891,197	\$13,975,268
Implements of cultivation	3,062,194	3,031,334	13,053,868
Seeders and planters	2,245,512	2,016,910	
Harvesting implements	2,075,727	3,193,853	
Seed separators	858,106	601,482	
All other products	5,291,338	3,024,137	
Amount received for repair work	307,584	523,422	921,400

Glass.—In the industry as a whole, Ohio ranked third in 1904 and second in 1909, and in the manufacture of globes and electrical goods, and beer, soda, and mineral-water bottles the state ranked first.

The next tabular statement shows, for 1909, 1904, and 1899, (1) the kind, quantity, and value of the principal varieties of building glass, (2) the total value of the pressed and blown glass and of the bottles, jars, etc., produced, and (3) the quantity of the different kinds of pressed and blown glass and bottles and jars produced.

Pressed and blown glass was the most important product of the glass industry in Ohio in 1909, furnishing 42.9 per cent of the total value of products. Bottles and jars were second, with 32.9 per cent, and building glass third, with 19.1 per cent. Pressed and blown glass also showed the greatest absolute increase in value between 1904 and 1909, but the greatest percentage of increase (68.9) was in building glass. All kinds of pressed and blown ware increased in quantity between 1904 and 1909 except chimneys and lantern globes. The most conspicuous increase was in the number of dozens of electric globes and other goods, from 1,732,800 in 1904 to 4,750,785 in 1909, or 174.2 per cent. The per cent of increase for gas shades, globes, and other goods was somewhat larger (293.9 per cent), but the absolute increase was only 478,950 dozens. All classes of bottles and jars showed increases except "Liquors and flasks" and "Patent and proprietary." Noteworthy increases occurred in the numbers of

"Beer, soda, and minerals," "Milk jars," and "Packers and preservers." All classes of building glass increased materially.

PRODUCT.	1909	1904	1899
Total value	\$14,358,274	\$9,026,208	\$4,547,083
Building glass	\$2,744,513	\$1,625,126	\$671,422
Window glass			
50-foot boxes	829,872	380,771	200,854
Value	\$1,533,460	\$941,244	\$519,187
All other	\$1,211,053	\$683,882	\$162,235
Pressed and blown glass	\$0,160,707	\$3,954,660	\$2,738,289
Bottles and jars	\$4,717,658	\$2,961,727	\$1,058,955
All other products	\$785,396	\$484,695	\$78,417
<i>Kind and quantity of pressed and blown glass and bottles and jars.</i>			
Pressed and blown glass:			
Tableware—100 pieces	248,815	161,900	150,992
Jellies, tumblers, and goblets, dozens	4,133,100	2,083,925	1,681,584
Lamps, dozens	50,147	25,744	101,084
Chimneys, dozens	1,215,815	1,690,314	1,508,114
Lantern globes, dozens	213,686	265,805	142,800
Globes and other electrical goods, dozens	4,750,785	1,732,800	1,397,824
Shades, globes, and other gas goods, dozens	641,896	162,046	(¹)
Blown tumblers, stem ware, and bar goods, dozens	2,255,805	1,835,350	214,072
Opal ware, dozens	313,350	200,000	96,597
Cut ware, dozens	6,000	8,850	2,900
Bottles and jars:			
Prescriptions, vials, and druggists' ware, gross	148,071	79,342	76,400
Beer, soda, and mineral, gross	585,924	433,546	219,422
Liquors and flasks, gross	222,764	268,782	16,400
Milk jars, gross	107,044	2,387	6,000
Fruit jars, gross	21,626	(²)	2,000
Patent and proprietary, gross	21,933	47,933	20,000
Packers and preservers, gross	138,269	10,155	25,000

¹ Included in "Globes and other electrical goods." ² Not reported.

The number of furnaces, including both active and idle, was 138 in 1909, as compared with 93 in 1904 and 60 in 1899. Sixty-eight of the total number in 1909 were pot furnaces, and they had 736 pots. The corresponding figures for 1904 were 43 pot furnaces with 620 pots, and for 1899, 42 pot furnaces with 539 pots. Fifty-seven tank furnaces with 532 rings were reported in 1909; 36 in 1904 with 303 rings; and 12 in 1899 with 95 rings. Thirteen intermittent or dry-tank furnaces were reported in 1909 with a capacity of 30 tons. The corresponding figures were, for 1904, 14 with a capacity of 42 tons, and for 1899, 6 with a capacity of 25 tons.

The fuel used in the largest number of furnaces in 1909 was producer and natural gas.

Paint and varnish.—The increase in the total value of paint and varnish was very much larger during the period 1904–1909 than during the preceding five years. The next table shows the kind, quantity, and value of the output for the last three censuses.

Paints in oil already mixed for use are the principal products of the paint and varnish industry of Ohio. In 1909 the value of this product was \$5,334,914, which was 39.2 per cent of the total for the industry. The increase in the manufacture of these ready-mixed paints was marked during the five years 1904–1909, the quantity produced more than doubling and the value almost doubling. Oleoresinous varnishes ranked second in 1909 among the products, with a value of \$2,413,323, or 17.7 per cent of the total. These varnishes almost trebled in quantity and considerably

more than doubled in value. Spirit varnishes and damar and similar turpentine and benzine varnishes decreased in both quantity and value. Paste fillers, dry fillers, and putty also decreased in both quantity and value, due mostly to a great reduction in the output of two large establishments.

PRODUCT.	1909	1904	1899
Total value	\$13,617,189	\$8,530,142	\$6,703,624
Pigments.....	\$949,613	\$781,117	\$579,377
Paints.....	\$7,074,807	\$4,389,985	
White lead in oil—			
Pounds.....	24,057,529	19,903,727	(1)
Value.....	\$1,532,797	\$957,134	(1)
Paints in oil, in paste—			
Pounds.....	12,237,952	10,027,720	30,695,967
Value.....	\$807,156	\$701,088	\$1,752,553
Paints in oil, already mixed for use—			
Gallons.....	6,769,267	3,081,836	2,578,218
Value.....	\$5,334,914	\$2,781,763	\$2,368,938
Varnishes and japans.....	\$3,721,889	\$2,424,730	\$1,965,016
Oleoresinous varnishes—			
Gallons.....	3,790,073	1,736,439	
Value.....	\$2,413,323	\$1,181,203	
Damar and similar turpentine and benzine varnishes—			
Gallons.....	309,080	624,295	1,245,565
Value.....	\$259,204	\$582,284	\$1,177,397
Spirit varnishes, not turpentine—			
Gallons.....	77,786	80,675	43,304
Value.....	\$106,848	\$107,147	\$50,107
Drying and baking japans and lacquers—			
Gallons.....	1,715,173	(2)	(2)
Value.....	\$672,443	\$470,771	\$512,299
All other.....	\$270,071	\$83,325	\$225,213
Fillers and putty:			
Liquid fillers—			
Gallons.....	292,867	146,469	(2)
Value.....	\$155,869	\$89,213	(2)
Paste fillers, dry fillers, and putty—			
Pounds.....	4,623,364	8,779,800	(2)
Value.....	\$159,570	\$246,412	(2)
All other products.....	\$955,381	\$593,685	\$40,740

¹ Included with "Pigments."

² Not reported.

Petroleum refining.—Ohio was fifth among the states in the production of crude petroleum in 1909, and seventh in the value of its refinery output. The next tabular statement gives the quantity and cost of materials used in the refineries of the state, the quantity and value of the principal products, and details as to the main equipment reported for 1909, 1904, and 1899.

The quantity of illuminating oil and greases produced decreased between 1904 and 1909, but the quantity of fuel oils nearly doubled, and that of lubricating oils and of naphtha and gasoline increased 61.7 per cent and 15.4 per cent, respectively. Of the total quantity of refined oils, which include illuminating, fuel, and lubricating, the fuel oils formed 41.9 per cent in 1909, as contrasted with 28 per cent in 1904 and 26.3 per cent in 1899.

Of the total crude oil used in Ohio refineries in 1909 about one-half was from the Lima (Ohio) and Indiana fields. The remainder, excepting 5.3 per cent returned as "Pennsylvania, including Kentucky," was from the Illinois field.

The development of the industry in the state is also reflected in the equipment, such as stills, storage tanks, and agitators. The number of stills was 198 in 1909, as compared with 217 in 1904 and 222 in 1899. The combined capacity of the stills reported for 1909 was

105,881 barrels of 42 gallons; for the other years this detail was not given. There were 675 tanks in 1909, of which 61 were for crude oils and 614 for refined; in 1904 there were 519, of which 20 were for crude oil and 499 for refined; and in 1899, 296, of which 21 were for crude and 275 for refined. At the earliest of the three censuses no statement of storage capacity was requested. In 1909 the refineries could store 21,520,952 gallons of crude and 78,612,190 gallons of refined petroleum, compared with 8,964,030 gallons of crude and 84,888,935 gallons of refined in 1904. The agitators numbered 44 in 1909, 52 in 1904, and 53 in 1899.

MATERIAL, PRODUCT, OR EQUIPMENT.	1909	1904	1899
Materials used, total cost	\$8,144,583	\$7,662,397	\$6,177,046
Crude petroleum:			
Barrels (42 gallons).....	4,833,675	4,195,871	4,061,554
Cost.....	\$4,987,558	\$5,143,137	\$4,495,890
Containers.....	\$652,487	\$936,659	\$549,081
All other materials.....	\$2,504,538	\$1,582,001	\$1,132,077
Products, total value	\$10,753,738	\$10,948,864	\$8,396,977
Oils:			
Illuminating—			
Barrels (50 gallons).....	1,204,186		1,387,160
Value.....	\$2,618,762		\$3,449,427
Fuel (including gas oils)—		1,061,105	
Barrels.....	1,257,950	\$5,188,808	614,631
Value.....	\$1,302,720		\$629,543
Lubricating—			
Barrels.....	543,526	336,116	331,863
Value.....	\$2,062,387	\$1,540,896	\$701,635
Naphtha and gasoline (including gas naphtha)—			
Barrels.....	539,828	407,594	598,888
Value.....	\$2,224,283	\$1,676,529	\$1,750,541
Greases (lubricating, etc.):			
Barrels.....	18,076	19,659	161,264
Value.....	\$207,225	\$158,885	\$723,203
Paraffin wax:			
Barrels.....	54,536	47,533	66,455
Value.....	\$470,760	\$549,515	\$801,223
Residuum or tar:			
Barrels.....	101,105	111,330	146,628
Value.....	\$193,403	\$210,911	\$224,319
Coke and black naphtha.....	\$33,829	\$30,448	\$12,594
All other products.....	\$1,640,369	\$1,592,872	\$103,882
Equipment:			
Stills, number.....	190	217	222
Heated by steam—			
Number.....	30	(1)	32
Capacity (barrels, 42 gallons).....	22,589	(1)	(1)
Heated by superheated steam—			
Number.....	8	(1)	1
Capacity (barrels, 42 gallons).....	4,000	(1)	(1)
Heated by fire—			
Number.....	160	184	189
Capacity (barrels, 42 gallons).....	79,292	(1)	(1)
Agitators, number.....	44	52	53
Chilling houses for paraffin, number.....	9	8	8
Hydraulic or other presses, number.....	17	41	54
Storage tanks:			
For crude petroleum—			
Number.....	61	20	21
Capacity, gallons.....	21,520,952	8,964,030	(1)
For refined petroleum—			
Number.....	614	499	275
Capacity, gallons.....	78,612,190	84,888,935	(1)
Cooper shops, number.....	4	7	5
Tin shops, number.....	1	1	1

¹ Not reported.

Leather, tanned, curried, and finished.—Ohio has held the tenth position among the states in the manufacture of leather since 1899. The value of the leather product increased from \$5,182,065 in 1899 to \$6,512,754 in 1904 and to \$10,127,836 in 1909, or a gain of 55.5 per cent between 1904 and 1909 and of 95.4 per cent between 1899 and 1909. The next table gives the products, by kind, quantity, and value, for 1909, 1904, and 1899:

Carriage, automobile, and furniture leather was the leading product, with a value of \$3,734,827. Large

amounts of sundry kinds of leather are included with "All other leather," to avoid disclosing operations of individual establishments.

Of the total value of leather made in the state in 1909 the city of Cincinnati reported one-half, a slight decrease since 1904, when the city reported 52.3 per cent of the total production.

The number of cattle hides used in the manufacture of leather in Ohio in 1909 was 514,226, and they cost \$5,179,537, an increase of 110,571, or 27.4 per cent, in number and of \$2,335,867, or 82.1 per cent, in cost over 1904. The skins reported in 1909 numbered 607,624, and they cost \$1,157,205, an increase of 31,677, or 5.5 per cent, in number and of \$476,744, or 70.1 per cent, in cost.

PRODUCT.	1909	1904	1899
Total value	\$10,127,836	\$6,512,754	\$5,182,065
Upper leather, other than calf or kip skins (grain, satin, pebble, etc.):			
Sides.....	22,668	2,500	1,100
Value.....	\$76,277	\$9,700	\$2,875
Harness leather:			
Sides.....	363,981	309,434	336,015
Value.....	\$2,540,892	\$1,890,772	\$1,831,651
Carriage, automobile, and furniture leather:			
Hides.....	261,950	205,517	109,071
Value.....	\$3,784,827	\$1,798,850	\$955,973
All other leather.....	\$3,509,863	\$1,777,999	\$2,291,744
All other products.....	\$265,277	\$1,055,397	\$95,702
Work on materials for others.....	\$700	\$36	\$3,060

Butter, cheese, and condensed milk.—The manufacture of butter, cheese, and condensed milk, although not one of the leading industries of the state, is of such importance that Ohio ranks ninth among the states in the industry. In the manufacture of cheese alone, and of condensed milk alone, it ranks fourth. The following statement gives the principal products, by kind, quantity, and value, for 1909, 1904, and 1899:

PRODUCT.	1909	1904	1899
Total value	\$9,689,670	\$4,593,222	\$3,808,996
Butter:			
Packed solid—			
Pounds.....	11,265,341	7,233,289	6,802,419
Value.....	\$3,162,518	\$1,527,514	\$1,335,512
Prints or rolls—			
Pounds.....	6,225,910	4,358,692	1,285,212
Value.....	\$1,822,755	\$1,007,007	\$304,039
Cream sold:			
Pounds.....	4,735,900	1,843,868	6,298,648
Value.....	\$500,528	\$116,253	\$390,743
Cheese:			
Full cream—			
Pounds.....	9,768,970	13,219,415	14,570,866
Value.....	\$1,305,461	\$1,231,779	\$1,304,795
Part cream—			
Pounds.....	1,550,560	.....	.....
Value.....	\$197,656	.....	.....
Other kinds—			
Pounds.....	541,071	4,132,358	3,585,661
Value.....	\$30,400	\$424,184	\$350,928
Condensed milk:			
Sweetened—			
Pounds.....	4,232,160	266,250	100,000
Value.....	\$255,529	\$15,975	\$5,500
Unsweetened—			
Pounds.....	33,423,187	1,680,968	.....
Value.....	\$2,153,430	\$123,088	.....
All other products ¹	\$260,393	\$147,362	\$110,479

¹ Includes skimmed milk sold and casein, whey, and skimmed cheese.

The total value of the products increased \$5,880,674, or 154.4 per cent, during the 10 years 1899-1909.

The increase from 1899 to 1904 was 20.6 per cent, and from 1904 to 1909, 111 per cent.

From 1904 to 1909 the quantity of butter manufactured increased 50.9 per cent and the value 96.7 per cent. The increase for the 10-year period from 1899 to 1909 was 116.3 per cent in quantity and 204 per cent in value. The average value per pound as reported for all kinds in 1909 was 28.5 cents, as against 21.9 cents in 1904.

The total amount of cheese produced decreased from over 18,000,000 pounds in 1899 to about 17,000,000 in 1904 and about 12,000,000 in 1909, a decrease for the decade of 34.7 per cent. The value decreased from \$1,655,723 in 1899 to \$1,533,517 in 1909. The value in 1904 was practically the same as the value in 1899.

Attention should be called to the fact that part-cream cheese was not differentiated from full-cream cheese prior to 1909. The full-cream cheese reported for the earlier censuses included a certain amount of part-cream cheese. In 1909, 1,550,566 pounds of part-cream cheese, valued at \$197,656, were reported.

The output of condensed milk in the state increased from 100,000 pounds in 1899 to 37,655,347 pounds in 1909, and its value increased from \$6,500 to \$2,409,959. This most remarkable increase from 1899 to 1909 was due to the establishment during the 10 years of a number of large factories for making unsweetened condensed milk. The growth of this branch of the industry has resulted probably in a diversion of considerable quantities of milk formerly sent to the cheese factories and may account in a measure for the decline in the production of cheese.

The butter, cheese, and condensed-milk industry in 1909 was represented by 119 butter, 197 cheese, and 9 condensed-milk factories. Two of the butter factories also made condensed milk, and one butter factory made cheese. Twenty of the cheese factories and one condensed-milk factory made butter also.

Twenty-eight of the butter and 85 of the cheese factories were operated by cooperative associations. These associations operated 34.8 per cent of all the establishments in the combined industry, but employed only 10.7 per cent of the wage earners, and produced only 11.1 per cent of the value of products. Eight of the nine condensed-milk factories were operated by corporations; the other was conducted by a firm.

Chemicals.—The next statement shows the kind, quantity, and value of certain of the products reported for the chemical industry at the last three censuses. The quantity and value of many of the chemicals can not be shown separately, as they are the product of fewer than three establishments and the publication of statistics regarding them would disclose the operations of individual establishments.

The chemical industry in Ohio advanced rapidly in the 10 years from 1899 to 1909. The value of its products was \$3,576,260 at the census of 1899, as con-

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TABLE I.—COMPARATIVE SUMMARY FOR 1909, 1904, AND 1899—Continued.

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES—Continued.

INDUSTRY.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
			Total.	Proprietors and firm members.	Salaried employees.	Wage earners (average number).							
Expressed in thousands.													
COLUMBUS—Continued.													
Foundry and machine-shop products...	1909	58	3,745	46	687	3,012	4,148	\$9,656	\$735	\$1,841	\$3,465	\$7,744	\$4,276
	1904	49	3,299	43	388	2,808		6,344	464	1,550	3,393	7,008	3,615
	1899	43				222	2,971		4,277	283	1,433	2,398	5,070	2,672
Furniture and refrigerators.....	1909	8	422	4	44	374	553	487	61	189	405	747	342
	1904	14	232	2	26	204		320	29	91	230	405	175
	1899	4	250	4	33	213		265	24	67	205	428	223
Gas and electric fixtures and lamps and reflectors.	1909	9	373	4	35	334	263	573	38	141	371	770	399
	1904	13	40	4	4	32		74	4	18	28	62	34
	1899	3			3	64		85	4	30	34	103	69
Ice, manufactured.....	1909	5	183		25	158	1,784	676	21	91	68	253	185
	1904	4	111		18	93		658	10	42	34	128	94
	1899												
Leather goods.....	1909	11	200	13	59	128	127	584	43	74	353	560	207
	1904	11	175	14	37	124		308	26	74	223	433	210
	1899	12			50	160		246	38	59	202	395	193
Liquors, malt.....	1909	4	561		88	473	3,045	10,684	146	371	619	2,728	2,109
	1904	5	526	5	68	455		3,721	83	369	816	2,134	1,318
	1899	4	502	5	50	447		1,647	74	251	497	2,024	1,427
Lumber and timber products.....	1909	27	530	20	70	434	1,808	936	85	264	768	1,240	482
	1904	20	355	15	35	305		486	31	220	451	799	348
	1899	17	247	16	13	218		213	11	106	172	374	202
Marble and stone work.....	1909	6	90	5	15	70	445	236	12	47	75	169	94
	1904	4	128	2	15	111		131	39	71	78	188	110
	1899	8	88	8	9	71		63	5	40	33	114	81
Models and patterns, not including paper patterns.	1909	8	49	10	5	34	58	48	3	23	11	70	59
	1904	5	19	6	1	12		12	1	7	2	19	17
	1899												
Paint and varnish.....	1909	5	119	1	68	55	141	413	68	28	346	602	256
	1904	13	65		27	38		172	39	19	155	282	127
	1899	13	70		23	47		155	30	18	115	205	90
Patent medicines and compounds and druggists' preparations.	1909	13	281	11	130	140	285	730	95	61	239	946	707
	1904	9	242	9	70	163		869	50	55	881	3,214	2,333
	1899	10			35	103		713	32	66	491	1,611	1,120
Printing and publishing.....	1909	91	1,433	71	461	901	879	1,823	417	592	689	2,660	1,971
	1904	76	1,346	78	421	847		1,352	294	516	475	1,916	1,441
	1899	52			181	771		975	137	442	378	1,333	955
Slaughtering and meat packing.....	1909	6	166	5	31	130	365	636	29	101	1,064	2,354	399
	1904	4	79	5	5	69		116	5	49	737	852	115
	1899	5	88	11	4	73		152	2	34	630	714	84
Stoves and furnaces, including gas and oil stoves.	1909	10	360	4	62	294	377	707	65	173	310	722	412
	1904	10	300	9	36	255		425	46	132	190	497	307
	1899												
Tobacco manufactures.....	1909	35	278	37	18	223		150	21	81	155	436	281
	1904	47	287	55	12	220		95	11	70	107	349	242
	1899	31	537	32	22	483		332	20	113	104	452	348
All other industries.....	1909	184	7,222	107	1,074	6,041	18,909	14,125	1,134	3,136	9,264	16,848	7,584
	1904	135	5,332	101	675	4,556		8,642	671	5,470	2,279	10,694	5,224
	1899	137			483	4,518		10,128	443	2,012	8,426	14,164	5,738
DAYTON—All industries.....													
Boxes, cigar.....	1909	3	97	4	7	86	358	75	5	23	47	85	38
	1904	3	115	3	7	105		77	5	27	45	106	61
	1899	3	122	3	9	110		59	6	36	37	100	63
Boxes, fancy and paper.....	1909	5	594		54	540	376	381	65	196	486	932	446
	1904	5	437		51	386		531	66	114	379	743	364
	1899	3	389		39	350		342	48	101	261	491	230
Brass and bronze products.....	1909	7	246	7	29	210	340	494	47	145	213	481	268
	1904	14	213	5	19	189		436	34	109	111	337	223
	1899	3	282	3	19	260		518	32	89	163	375	212
Bread and other bakery products.....	1909	65	519	74	95	350	401	719	86	137	949	1,531	582
	1904	47	365	53	50	262		481	39	112	538	861	323
	1899	53	278	61	31	186		444	21	88	332	629	297
Brick and tile.....	1909	4	31	5	1	25	165	27	1	11	4	20	22
	1904	3	38	4	2	32		35	2	15	6	33	27
	1899												
Carriages and wagons and materials.....	1909	17	425	18	33	374	697	677	52	203	347	802	455
	1904	18	491	21	27	383		651	40	167	254	563	312
	1899	13			28	477		652	42	206	330	733	408

¹ Excluding statistics for one establishment, to avoid disclosure of individual operations.
² Figures can not be shown without disclosing individual operations.
³ Excluding statistics for two establishments, to avoid disclosure of individual operations.
⁴ Not reported separately.

The following table shows the number of spindles, looms, sets of woolen cards, and combing machines reported for this industry at the censuses of 1909, 1904, and 1899:

MACHINE.	1909	1904	1899
Spindles ¹	69,599	34,733	30,400
Looms.....	1,434	756	074
Woolen cards (sets).....	54	69	78
Wool-combing machines.....	27	11	5

¹ Includes producing and doubling and twisting spindles.

Hosiery and knit goods.—The following statement compares the quantity and cost of the different kinds of materials used in the hosiery and knit-goods industry and the quantity and value of the various products for 1909, 1904, and 1899:

MATERIAL OR PRODUCT.	1909	1904 ¹	1899
Materials used, total cost.....	\$3,851,419	\$2,177,368	\$810,401
Yarns, purchased:			
Cotton—			
Pounds.....	4,207,238	1,649,479	432,372
Cost.....	\$1,238,527	\$444,930	\$98,817
Worsted—			
Pounds.....	1,095,829	784,770	455,569
Cost.....	\$1,003,980	\$700,490	\$412,277
Woolen—			
Pounds.....	773,371	327,684	64,823
Cost.....	\$439,977	\$215,232	\$38,346
Merino—			
Pounds.....	843,181	564,372	202,934
Cost.....	\$398,934	\$195,266	\$54,774
All other—			
Pounds.....	66,081	14,202	7,633
Cost.....	\$177,528	\$32,941	\$26,350
Chemicals.....	\$22,591	\$21,730	\$10,688
Fuel and rent of power.....	\$37,563	\$25,461	\$10,323
All other materials.....	\$532,319	\$481,318	\$153,826
Products, total value.....	\$6,433,431	\$3,997,047	\$1,584,754
Hose and half hose:			
Merino or mixed—			
Dozen pairs.....	323,948	239,162	105,000
Value.....	\$504,939	\$321,864	\$128,000
Cotton—			
Dozen pairs.....	72,602	74,840	39,609
Value.....	\$150,464	\$131,142	\$48,079
All other—			
Dozen pairs.....	3,725	97,815	89,107
Value.....	\$8,725	\$156,862	\$136,322
Shirts and drawers:			
Cotton—			
Dozens.....	87,151	82,264	16,806
Value.....	\$166,687	\$228,170	\$45,658
All other—			
Dozens.....	39,154	37,190	22,750
Value.....	\$234,037	\$247,771	\$146,779
Combination suits:			
Cotton—			
Dozens.....	131,186	55,823	11,517
Value.....	\$1,047,775	\$395,058	\$73,052
Merino—			
Dozens.....	58,063	15,643	5,135
Value.....	\$961,771	\$212,879	\$61,088
All other—			
Dozens.....	2,683	4,623	1,515
Value.....	\$66,938	\$111,326	\$2,770
Gloves and mittens:			
Dozen pairs.....	319,522	231,990	273,940
Value.....	\$289,548	\$360,111	\$333,258
Hoods, scarfs, nubias, etc.:			
Dozens.....	272,478	206,024	122,102
Value.....	\$1,064,969	\$482,070	\$304,449
Cardigan jackets, sweaters, fancy jackets, etc.:			
Dozens.....	115,457	(²)	.....
Value.....	\$1,355,728	(²)	.....
All other products.....	\$581,570	\$1,349,794	\$275,299

¹ Excluding statistics for two establishments, to avoid disclosure of individual operations.

² Included in "All other products."

It is to be noted that in materials used the item of greatest importance for 1909 was cotton yarns purchased, which contributed nearly one-third of the total value of all materials used. Worsted yarns was the most important item of cost in 1904 and in 1899.

The increase in value of products for the 10-year period was 306 per cent, the greater part of this oc-

curing during the earlier five-year period, although the statistics for two establishments making hand-knit goods were omitted for 1904.

Conspicuous increases occurred between 1904 and 1909 in the manufacture of combination suits. Cotton combination suits increased 135 per cent in number and 165.2 per cent in value, while merino combination suits increased 271.2 per cent in number and 351.8 per cent in value. All other combination suits, however, decreased 42 per cent in number and 39.9 per cent in value. Hoods, scarfs, nubias, etc., increased 32.3 per cent in number and 120.9 per cent in value.

The manufacture of hose and half hose increased markedly between 1899 and 1904, but between 1904 and 1909 comparatively little change took place in the totals. A considerable change occurred, however, in the relative importance of the different classes of hosiery. The value of merino or mixed hose formed 76 per cent of the total value of the hosiery produced in 1909, as contrasted with 52.8 per cent in 1904. The corresponding percentages for cotton hose were 22.7 in 1909 and 21.5 in 1904. The proportion formed by the value of all other hose decreased from 25.7 per cent in 1904 to 1.3 in 1909. A striking increase occurred between 1904 and 1909 in the number of pairs of merino or mixed hose and half hose produced, but this was more than offset by the decrease in the number of pairs of cotton hose and in the number of pairs of all other kinds.

Gloves and mittens increased considerably in quantity, but there was a decrease in the value reported in 1909 from that given for 1904. This was due principally to the decrease in value of output reported by one establishment.

Eleven establishments made cardigan jackets, sweaters, fancy jackets, etc., in 1909, but as these items were included under "All other products" at prior censuses, no comparative figures can be given. The value of the output in 1909 was so large as to form 21.1 per cent of the total value of products.

The great decrease in "All other products" between 1904 and 1909 was due in great part to the decrease in the output of shawls and fancy knit goods.

The following is a table showing the machinery of the hosiery and knitting mills for 1909, 1904, and 1899:

MACHINE.	1909	1904	1899
Spindles.....	4,670	5,484	3,920
Cards (sets).....	13	11	10
Sewing machines.....	1,380	643	170
Knitting machines.....	2,068	2,308	1,147

The number of knitting machines decreased owing to the elimination of a large number of hand machines, the loss not being counterbalanced by the increase in machines operated by power.

Laundries.—Statistics for steam laundries are not included in the general tables or in the totals for manufacturing industries. In 1909 there were 253 such establishments in the state of Ohio, 22 of which

were in Cleveland, 19 in Toledo, 18 in Cincinnati, 11 in Columbus, 7 in Akron, 6 in Dayton, and 5 in Hamilton. No other city had as many as 5 laundries.

The following statement summarizes the statistics:

Number of establishments.....	253
Persons engaged in the industry.....	6,773
Proprietors and firm members.....	277
Salaried employees.....	603
Wage earners (average number).....	5,893
Primary horsepower.....	7,431
Capital.....	\$3,802,957
Expenses.....	4,425,294
Services.....	2,772,137
Materials.....	871,722
Miscellaneous.....	781,435
Amount received for work done.....	5,388,954

The most common form of ownership was the individual, with 125 establishments. The firm and corporate forms of ownership were represented by 69 and 59 establishments, respectively. Seventy-two establishments had receipts for the year's business of less than \$5,000; 110, receipts of \$5,000 but less than \$20,000; 58, receipts of \$20,000 but less than \$100,000; and 13, receipts of \$100,000 but less than \$1,000,000.

The number of wage earners employed each month and the per cent which this number represented of the greatest number employed in any month were as follows:

MONTH.	WAGE EARNERS.		MONTH.	WAGE EARNERS.	
	Number.	Per cent of maximum.		Number.	Per cent of maximum.
January.....	5,641	92.9	July.....	6,054	99.8
February.....	5,620	92.7	August.....	5,976	98.5
March.....	5,794	95.5	September.....	6,069	100.0
April.....	5,800	95.6	October.....	5,958	98.2
May.....	5,897	97.2	November.....	5,912	97.4
June.....	6,043	99.0	December.....	5,946	98.0

The different kinds of primary power, the number of engines or motors, and the horsepower used in 1909 are shown in the following table:

KIND.	Number of engines or motors.	Horsepower.
Primary power, total.....		7,431
Owned:		
Steam.....	198	0,235
Gas.....	45	737
Water wheels.....	1	35
Water motors.....	1	15
Rented:		
Electric.....	82	401
Other.....		8

The kind and amount of fuel used are shown in the following statement:

KIND.	Unit.	Quantity.
Anthracite coal.....	Tons.....	398
Bituminous coal.....	Tons.....	59,789
Coke.....	Tons.....	77
Wood.....	Cords.....	26
Oil.....	Barrels.....	73
Gas.....	1,000 feet.....	649,446

Custom sawmills and gristmills.—Statistics for custom sawmills and gristmills are not included in the general tables or in the totals for manufacturing industries, but are presented in the following summary:

	Custom sawmills.	Custom gristmills.
Number of establishments.....	262	152
Persons engaged in the industry.....	732	301
Proprietors and firm members.....	340	199
Salaried employees.....	1	7
Wage earners (average number).....	391	95
Primary horsepower.....	5,398	5,125
Capital.....	\$336,846	\$503,988
Expenses.....	138,402	1,034,490
Services.....	107,099	32,860
Materials.....	3,080	1,981,496
Miscellaneous.....	26,423	20,134
Value of products.....	286,189	1,189,853

¹ Includes estimate of all grain ground. A similar estimate for value of lumber sawed by custom sawmills is impracticable.

MANUFACTURES—OHIO.

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TABLE I.—COMPARATIVE SUMMARY FOR 1909, 1904, AND 1899.

THE STATE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES.

INDUSTRY.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.					Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
			Total.	Proprietors and firm members.	Salaried employes.	Wage earners (average number).	Expressed in thousands.							
STATE—All industries	1909	15,138	523,004	14,719	61,351	446,934	1,583,155	\$1,300,733	\$72,147	\$245,450	\$824,202	\$1,437,936	\$613,734	
	1904	13,785	417,946	13,657	39,991	364,298	1,116,932	866,989	43,435	182,429	527,637	960,812	433,176	
	1899	13,868			28,109	308,109	783,665	670,909	28,151	136,428	409,303	748,671	339,368	
Agricultural implements.....	1909	55	6,972	23	952	5,997	9,867	25,637	1,148	3,155	6,319	14,440	8,121	
	1904	71	6,610	39	918	5,659	8,354	24,302	1,002	2,910	5,692	12,891	7,199	
	1899	78	8,408	58	1,588	6,852	7,836	23,628	1,369	3,271	6,060	13,975	7,615	
Artificial stone.....	1909	299	1,315	391	122	802	1,325	1,274	74	404	499	1,378	879	
	1904	67	416	92	44	280	347	437	26	135	167	446	279	
	1899													
Automobiles, including bodies and parts.....	1909	75	13,458	42	1,286	12,130	14,493	30,892	1,430	7,746	18,522	38,839	20,817	
	1904	22	2,939	8	209	2,722	1,877	4,220	254	1,617	2,553	6,358	3,805	
	1899	3			7	86		68	5	52	60	145	85	
Bags, paper.....	1909	8	632		75	557	508	1,447	104	240	1,038	2,393	755	
	1904	9	609	3	124	482	1,389	1,306	90	177	955	1,513	558	
	1899	10	278	4	56	218		390	41	68	511	719	208	
Belting and hose, leather.....	1909	8	164	4	53	107	405	657	95	80	795	1,080	285	
	1904	6	124	1	43	80	307	482	59	48	550	753	203	
	1899	5	137	3	42	92		486	45	48	638	836	198	
Bicycles, motorcycles, and parts.....	1909	6	1,037	2	93	942	1,895	2,245	95	686	1,066	2,308	1,242	
	1904	3	507		61	446	547	1,132	62	293	457	1,041	584	
	1899	34	2,609	20	200	2,380	2,795	4,075	107	1,017	2,251	4,100	1,849	
Blacking and cleansing and polishing preparations.....	1909	49	238	53	82	103	297	381	68	50	207	672	375	
	1904	21	83	25	20	38	60	78	18	14	62	152	90	
	1899	15	70	15	13	42		58	18	12	67	157	90	
Boots and shoes, including cut stock and findings.....	1909	72	17,607	40	1,541	16,026	8,925	16,755	2,125	6,646	18,872	31,551	12,679	
	1904	73	15,091	55	1,004	14,032	6,113	10,434	1,010	5,275	14,989	25,735	10,740	
	1899	92	13,758	97	895	12,766		7,654	966	4,010	11,310	18,246	6,936	
Boxes, cigar.....	1909	31	600	38	31	531	1,029	464	31	167	360	711	351	
	1904	30	544	36	23	480	506	399	21	136	374	669	295	
	1899	32	586	40	29	517		354	18	151	340	645	305	
Boxes, fancy and paper.....	1909	46	2,777	32	215	2,530	1,825	2,841	258	830	1,981	3,635	1,704	
	1904	42	1,942	41	158	1,743	827	1,597	156	475	1,072	2,133	1,061	
	1899	35	1,597	38	85	1,474		784	98	382	620	1,408	788	
Brass and bronze products.....	1909	82	2,650	72	346	2,232	4,214	6,472	418	1,872	3,533	6,572	3,039	
	1904	70	1,719	84	150	1,485	1,860	3,282	181	808	1,545	3,347	1,802	
	1899	46	1,467	53	99	1,315		1,730	111	608	1,039	2,693	1,254	
Bread and other bakery products.....	1909	1,467	8,758	1,600	1,188	5,972	5,898	11,781	1,099	3,371	13,666	23,007	9,341	
	1904	1,138	7,097	1,247	555	5,205	3,875	8,320	411	2,520	9,059	15,641	6,582	
	1899	956	5,115	1,029	567	3,519		5,057	353	1,529	5,427	9,857	4,490	
Brick and tile.....	1909	517	8,575	569	540	7,466	37,742	17,815	590	3,527	2,204	9,358	7,154	
	1904	590	7,839	704	416	6,719	33,291	12,049	390	2,942	1,633	7,136	5,503	
	1899	686	6,414	853	208	5,353	22,715	7,344	189	1,967	982	4,630	3,048	
Butter, cheese, and condensed milk.....	1909	325	2,494	1,216	211	1,067	3,386	2,739	173	557	7,685	9,690	2,005	
	1904	431	867	313	61	483	3,462	1,428	19	262	3,729	4,563	804	
	1899	479	869	391	89	399	2,509	1,041	19	190	3,055	3,809	754	
Butter, reworking.....	1909	5	73		26	47	423	571	20	31	1,228	1,356	128	
	1904	8	104	6	12	86	451	208	12	59	863	1,054	161	
	1899													
Canning and preserving.....	1909	107	2,379	94	276	2,009	4,244	3,494	252	532	3,102	4,660	1,558	
	1904	107	2,484	121	219	2,144	3,580	2,597	192	577	2,701	4,491	1,790	
	1899	97	2,223	113	148	1,962		1,430	120	438	1,931	3,247	1,316	
Carriages and wagons and materials.....	1909	407	10,350	414	1,121	8,815	14,771	20,398	1,282	4,647	11,414	21,949	10,535	
	1904	450	12,555	495	1,033	11,027	16,936	19,295	1,069	5,269	12,856	24,008	11,147	
	1899	558			954	11,658		17,235	842	5,020	12,181	22,803	10,622	
Cars and general shop construction and repairs by steam-railroad companies.....	1909	71	22,102		1,374	20,728	19,422	10,654	1,209	12,726	14,266	28,690	14,424	
	1904	74	18,195		1,169	17,026	13,654	7,503	969	9,800	10,225	21,428	11,203	
	1899	91	12,110		676	11,534	6,767	5,701	457	6,087	5,964	12,975	7,011	
Cars and general shop construction and repairs by street-railroad companies.....	1909	49	1,392		74	1,318	3,635	2,054	65	722	801	1,691	890	
	1904	5	169		19	150	20	128	17	94	55	172	117	
	1899	4	236		7	229		123	5	137	94	249	155	
Cars, steam-railroad, not including operations of railroad companies.....	1909	6	2,477		195	2,282	4,410	11,037	545	1,304	4,195	6,451	2,266	
	1904	5	2,143		83	2,065	1,725	3,208	135	1,108	3,358	5,539	2,181	
	1899	5	1,866		61	1,805	1,065	2,582	76	862	2,702	3,942	1,150	
Cars, street-railroad, not including operations of railroad companies.....	1909	4	823		80	734	2,875	2,842	124	471	1,094	1,955	861	
	1904	4	835		70	765	1,850	1,748	93	475	1,069	1,828	759	
	1899	3	290	2	13	275		253	12	153	231	538	307	
Cement.....	1909	9	978		91	887	12,685	4,732	140	544	638	1,465	827	
	1904	12	831	3	85	743	9,579	3,595	125	452	534	1,508	974	
	1899													
Chemicals.....	1909	33	1,346	17	197	1,132	11,715	8,994	324	749	4,748	7,742	2,904	
	1904	18	1,304	10	269	1,025	6,199	3,655	400	652	3,003	4,690	1,587	
	1899	35	794	21	164	600	1,280	3,670	199	340	2,084	3,576	1,492	

¹ Not reported separately.

² Excluding statistics for two establishments, to avoid disclosure of individual operations.

³ Excluding statistics for one establishment, to avoid disclosure of individual operations.

MANUFACTURES—OHIO.

TABLE I.—COMPARATIVE SUMMARY FOR 1909, 1904, AND 1899—Continued.
THE STATE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES—Continued.

INDUSTRY.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
			Total.	Proprietors and firm members.	Salaried employees.	Wage earners (average number).							
STATE—Continued.													
Clocks and watches, including cases and materials.	1909	9	1,534	2	76	1,456	877	\$4,232	\$91	\$784	\$526	\$1,931	\$1,455
	1904	6	1,803		91	1,712	649	2,650	104	851	714	1,889	1,185
	1899	5			47	1,271		743	59	589	475	1,467	992
Clothing, men's, including shirts.....	1909	342	11,813	405	1,458	9,950	1,794	14,432	1,661	4,050	12,920	24,869	11,949
	1904	357	8,590	464	941	7,185	1,315	12,263	1,022	2,749	9,937	19,346	9,409
	1899	563			865	7,129		11,008	842	2,284	9,470	17,312	7,842
Clothing, women's.....	1909	153	10,191	174	1,174	8,843	1,505	8,151	1,653	4,272	10,291	19,493	9,202
	1904	143	7,191	170	633	6,379	1,363	4,796	667	2,724	6,769	12,804	9,202
	1899	126	5,324	159	348	4,817	613	2,866	384	1,518	4,449	7,773	6,035
Coffee and spice, roasting and grinding..	1909	39	1,586	25	799	762	2,186	5,400	812	352	8,277	11,224	2,324
	1904	28	1,139	15	532	592	1,680	6,932	485	221	7,626	9,858	2,332
	1899	26	969	18	273	678		2,376	208	230	4,709	5,850	1,141
Coffins, burial cases, and undertakers' goods.	1909	24	1,475	11	210	1,245	2,289	3,724	266	525	1,324	3,061	1,737
	1904	19	1,309	17	128	1,164	1,454	2,645	167	537	1,176	2,524	1,848
	1899	14	1,112	11	117	984		2,073	138	410	872	1,801	929
Coke.....	1909	4	259		13	246	1,250	1,238	18	120	640	851	211
	1904	4	126	1	12	113	350	584	13	54	170	259	89
	1899	5	85		14	71	55	85	19	33	138	255	117
Confectionery.....	1909	114	3,012	103	416	2,493	2,005	3,416	443	840	4,089	7,307	3,218
	1904	70	2,054	81	223	1,750	891	1,764	195	526	2,272	4,712	2,440
	1899	55			235	1,357		1,456	178	396	2,004	3,825	1,821
Cooperage and wooden goods, not elsewhere specified.	1909	113	1,911	118	130	1,663	3,453	2,911	161	808	2,216	3,516	1,300
	1904	120	1,968	120	125	1,723	3,096	2,350	149	323	1,968	3,569	1,591
	1899	141			80	1,800		1,752	84	725	1,354	2,612	1,288
Copper, tin, and sheet-iron products....	1909	221	7,685	195	892	6,598	6,352	21,085	961	3,163	11,622	19,086	7,464
	1904	180	4,626	106	460	3,970	3,779	11,223	530	1,746	5,341	9,414	4,073
	1899	147			212	2,974		3,086	205	1,025	3,206	5,377	2,171
Cordage and twine and jute and linen goods.	1909	8	848	3	54	791	3,225	2,743	81	313	1,984	2,728	744
	1904	18	1,140		70	1,070	3,285	2,806	104	361	2,518	3,250	732
	1899	19	1,101	2	47	1,052		2,148	54	318	2,326	2,958	632
Cutlery and tools, not elsewhere specified.	1909	70	3,335	49	466	2,820	6,567	7,708	521	1,518	1,650	5,036	3,386
	1904	58	2,763	44	252	2,467	4,836	4,897	268	1,116	1,256	3,567	2,311
	1899	59			184	1,587		2,501	186	767	870	2,441	1,671
Dairymen's, poulterers', and apiarists' supplies.	1909	18	539	19	91	479	916	1,041	72	262	527	1,149	622
	1904	15	444	15	68	361	662	583	48	167	419	852	433
Electrical machinery, apparatus, and supplies.	1909	115	9,605	49	1,483	8,073	11,959	23,706	1,529	3,847	7,226	18,777	11,551
	1904	92	6,187	50	1,023	5,114	7,138	10,408	1,079	2,268	4,699	11,019	6,320
	1899	64	4,196	29	394	3,773	5,123	7,036	399	1,502	3,339	6,505	3,166
Explosives.....	1909	11	424		66	358	2,092	2,248	102	204	1,104	1,719	615
	1904	16	513	2	83	428	4,075	2,868	126	236	1,275	1,843	568
	1899	9	411	3	56	352	2,738	1,972	93	179	773	1,330	557
Fertilizers.....	1909	27	1,064	13	210	841	3,059	4,050	287	368	2,535	4,485	1,900
	1904	17	604	8	106	490	2,680	3,551	136	235	1,386	2,289	903
	1899	27	506	26	80	400	2,168	1,888	104	174	1,017	1,667	640
Firearms and ammunition.....	1909	5	910		97	813	1,129	2,225	164	318	1,291	2,215	924
	1904	4	786		45	741	1,063	1,658	73	275	1,220	1,920	700
	1899	3	405	2	32	371		676	40	111	565	832	267
Flags, banners, regalia, society badges, and emblems.	1909	13	1,572	4	306	1,262	568	2,352	343	523	1,509	3,026	1,517
	1904	16	1,343	14	209	1,120	421	1,660	243	429	1,023	2,257	1,234
	1899	14	1,150	15	161	974		1,027	132	235	1,012	1,796	784
Flour-mill and gristmill products.....	1909	673	4,164	911	668	2,585	52,250	19,903	682	1,415	41,353	48,093	6,740
	1904	694	4,141	1,003	438	2,700	53,880	14,931	422	1,340	35,626	40,856	5,230
	1899	676			389	2,334	49,682	10,773	302	1,170	29,984	35,078	5,094
Foundry and machine-shop products...	1909	1,218	74,887	683	9,387	64,817	112,538	177,745	11,908	38,015	64,560	145,837	81,277
	1904	1,003	59,791	755	6,050	52,936	78,859	117,449	7,107	28,207	44,546	103,713	59,107
	1899	1,007			4,362	50,109		80,899	4,016	24,246	39,652	88,410	49,858
Furniture and refrigerators.....	1909	228	9,449	170	1,047	8,232	15,951	10,251	1,055	4,142	7,242	16,259	9,017
	1904	212	9,677	170	835	8,672	14,490	13,281	837	3,910	5,544	13,827	8,283
	1899	105	7,577	183	671	6,723		9,586	573	2,622	4,042	9,515	5,473
Gas and electric fixtures and lamps and reflectors.	1909	56	1,788	40	311	1,437	2,356	2,577	302	748	1,777	3,563	1,786
	1904	22	801	19	120	662	714	923	145	288	454	1,234	800
	1899	24	823	19	89	715		748	68	241	419	1,046	627
Gas, illuminating and heating.....	1909	38	862	2	194	666	2,165	11,969	181	431	827	3,080	2,253
	1904	58	2,660		427	2,230	2,052	25,031	366	1,083	1,847	4,812	3,465
	1899	73	1,672		283	1,359	1,387	25,017	277	602	885	3,931	3,046
Glass.....	1909	45	10,630	8	463	10,159	16,198	16,201	716	5,977	4,688	14,358	9,670
	1904	37	8,163	10	309	7,844	11,256	9,254	444	4,512	2,837	9,028	6,189
	1899	28	4,754	9	199	4,546	3,721	5,452	249	2,007	1,253	4,547	3,204

¹ Excluding statistics for one establishment, to avoid disclosure of individual operations.
² Excluding statistics for two establishments, to avoid disclosure of individual operations.

MANUFACTURES—OHIO.

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TABLE I.—COMPARATIVE SUMMARY FOR 1909, 1904, AND 1899—Continued.

THE STATE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES—Continued.

INDUSTRY.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
			Total.	Proprietors and firm members.	Salaried employes.	Wage earners (average number).							
Expressed in thousands.													
STATE—Continued.													
Grindstones.....	1909	9	1,355	3	75	1,277	5,228	\$4,079	\$147	\$597	\$385	\$1,498	\$1,113
	1904	18	638	4	40	594	2,277	1,582	72	222	149	517	374
	1899	20	1,082	4	50	1,028	.....	674	51	356	207	906	699
Hats and caps, other than felt, straw, and wool.	1909	25	511	38	67	406	83	384	74	174	422	804	352
	1904	21	410	31	30	349	67	207	35	139	272	642	370
	1899	26	784	39	59	656	.....	337	31	224	573	1,004	431
Hosiery and knit goods.....	1909	39	3,412	31	232	3,149	1,613	4,408	391	1,072	3,851	6,433	2,582
	1904	28	2,649	25	134	2,490	1,221	2,380	146	714	2,177	3,967	1,820
	1899	28	1,504	28	56	1,420	550	1,072	55	356	810	1,585	775
Ice, manufactured.....	1909	97	1,176	43	241	392	19,058	8,381	220	559	564	2,270	1,706
	1904	69	692	31	141	520	11,882	4,495	111	296	292	1,217	925
	1899	42	395	17	79	299	6,150	1,777	53	155	138	583	445
Ink, printing.....	1909	8	277	.....	94	183	1,437	1,559	191	131	809	1,907	1,098
	1904	6	185	.....	50	135	732	1,468	97	99	407	1,319	912
	1899	5	132	.....	30	102	.....	686	65	63	375	707	332
Iron and steel, blast furnaces.....	1909	40	8,278	7	976	7,295	215,739	94,533	1,366	5,090	68,425	83,699	15,274
	1904	33	5,829	.....	395	5,434	167,740	43,196	568	3,471	32,477	40,862	8,385
	1899	43	6,342	17	286	6,056	95,040	22,347	342	3,287	23,543	40,387	16,324
Iron and steel, steel works and rolling mills.	1909	75	41,912	3	3,323	38,586	515,813	163,384	4,061	28,614	139,243	197,730	58,587
	1904	57	29,500	.....	1,744	27,756	304,162	87,406	1,931	18,658	78,210	111,997	33,787
	1899	64	28,583	.....	945	27,638	211,621	63,181	1,250	16,444	67,786	98,569	30,783
Jewelry.....	1909	35	481	43	32	356	116	1,191	84	252	619	1,255	636
	1904	16	326	21	43	262	94	472	43	162	229	653	424
	1899	21	.....	.....	35	224	.....	647	25	123	515	894	349
Leather goods.....	1909	86	2,309	90	329	1,890	1,399	4,070	302	379	2,859	4,939	2,080
	1904	94	2,785	99	274	2,412	1,813	4,229	263	1,063	2,931	5,444	2,513
	1899	96	.....	.....	269	2,345	.....	2,809	217	371	2,769	4,559	1,790
Leather, tanned, curried, and finished..	1909	36	2,028	24	120	1,884	4,244	13,759	197	1,083	7,720	10,128	2,408
	1904	40	1,738	34	94	1,610	2,770	6,915	142	839	4,462	6,513	2,051
	1899	58	1,534	76	74	1,384	2,322	5,823	81	617	3,774	5,182	1,408
Lime.....	1909	39	1,403	34	96	1,273	3,872	2,635	129	553	598	1,620	1,022
	1904	41	1,012	32	81	899	3,318	1,975	65	381	532	1,334	802
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Liquors, distilled.....	1909	17	434	12	43	374	2,422	4,732	88	230	2,514	12,011	9,497
	1904	23	345	21	197	627	3,517	3,851	166	317	3,410	15,977	12,567
	1899	26	428	29	64	335	.....	3,000	86	179	1,439	12,447	11,008
Liquors, malt.....	1909	105	5,275	35	884	4,386	31,690	57,743	1,683	3,267	6,563	25,332	18,769
	1904	114	4,540	52	717	3,771	25,288	34,970	1,233	2,802	5,956	21,621	15,665
	1899	111	.....	.....	540	3,301	20,860	25,305	871	2,243	4,201	18,168	13,967
Liquors, vinous.....	1909	29	254	22	83	149	406	1,980	95	79	718	1,304	586
	1904	47	283	43	70	170	677	2,180	77	88	691	1,335	644
	1899	52	286	49	58	179	459	1,622	49	68	429	802	373
Lumber and timber products.....	1909	1,390	16,445	1,560	1,429	13,456	69,255	28,509	1,467	6,701	19,972	34,597	14,625
	1904	1,312	16,380	1,044	1,166	13,570	68,536	24,631	1,087	6,594	17,733	32,920	15,193
	1899	1,658	.....	.....	864	16,502	71,085	19,186	715	6,548	17,116	32,812	16,696
Marble and stone work.....	1909	198	2,520	229	279	2,012	7,070	3,505	299	1,161	1,450	3,847	2,397
	1904	123	3,436	139	262	3,035	9,998	6,725	320	1,626	1,732	4,863	3,131
	1899	184	.....	.....	184	2,097	.....	2,396	148	1,038	1,131	3,058	1,927
Mattresses and spring beds.....	1909	38	1,145	34	150	961	2,009	2,935	183	435	1,082	3,307	1,625
	1904	35	793	42	88	663	1,798	1,682	117	275	1,392	2,296	904
	1899	31	.....	.....	49	441	.....	323	36	156	579	975	396
Millinery and lace goods.....	1909	31	1,605	30	218	1,357	603	1,334	223	478	1,459	2,744	1,285
	1904	17	519	21	42	456	132	236	28	141	288	596	308
	1899	20	441	30	19	392	.....	221	12	96	324	548	224
Models and patterns, not including paper patterns.	1909	74	564	95	28	441	673	316	27	294	159	670	511
	1904	61	379	77	19	233	631	271	19	174	58	386	323
	1899	65	411	80	11	320	.....	234	10	170	76	407	331
Musical instruments, pianos and organs and materials.	1909	30	1,937	16	130	1,841	2,254	3,593	172	1,092	1,922	3,926	2,004
	1904	26	2,336	10	116	2,210	2,153	3,357	150	1,205	1,625	3,684	2,059
	1899	18	844	20	53	771	1,008	1,349	61	358	710	1,451	741
Oil, linseed.....	1909	4	258	.....	45	213	1,347	2,552	56	33	3,081	3,627	546
	1904	4	90	.....	2	17	71	950	27	50	2,135	2,400	255
	1899	7	172	.....	25	147	.....	1,987	49	76	2,389	3,115	226
Paint and varnish.....	1909	87	2,587	39	1,013	1,535	5,572	11,757	1,377	904	8,570	13,617	5,047
	1904	75	1,635	40	484	1,111	4,275	7,906	900	581	5,855	8,530	2,675
	1899	65	1,419	62	515	842	2,445	5,502	636	414	4,115	6,704	2,589
Paper and wood pulp.....	1909	47	4,972	3	296	4,673	51,402	20,970	596	2,419	10,898	16,965	6,067
	1904	53	4,103	3	222	3,883	36,288	14,438	327	1,683	6,154	10,962	4,308
	1899	51	3,399	19	196	3,184	28,517	7,873	278	1,118	3,769	6,544	2,775

1 Excluding statistics for two establishments, to avoid disclosure of individual operations.

2 Excluding statistics for one establishment, to avoid disclosure of individual operations.

3 Not reported separately.

MANUFACTURES—OHIO.

TABLE I.—COMPARATIVE SUMMARY FOR 1909, 1904, AND 1899—Continued.
THE STATE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES—Continued.

INDUSTRY.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
			Total.	Proprietors and firm members.	Salaried employes.	Wage earners (average number).							
Expressed in thousands.													
STATE—Continued.													
Paper goods, not elsewhere specified....	1909	28	2,264	19	205	2,040	1,909	\$5,605	\$312	\$832	\$3,434	\$6,307	\$2,873
	1904	23	2,403	10	344	2,049	2,020	4,877	283	653	1,836	3,973	2,137
	1899	14	804	11	49	744	2,020	1,066	76	244	1,383	2,691	1,308
Patent medicines and compounds and druggists' preparations.	1909	261	2,068	236	927	905	1,568	4,072	800	385	1,888	5,859	3,071
	1904	196	1,803	196	561	1,046	1,255	3,332	574	386	2,118	7,371	5,233
	1899	159	1,469	188	412	869	2,978	2,978	428	287	1,445	4,842	3,397
Petroleum, refining.....	1909	10	2,039	.....	380	1,059	4,324	11,152	412	1,028	8,145	10,754	2,609
	1904	12	2,118	.....	216	1,900	4,386	10,385	266	1,054	7,062	10,949	8,287
	1899	9	1,227	2	217	1,008	2,491	10,913	234	552	6,177	8,397	2,220
Photo-engraving.....	1909	20	370	12	81	277	215	268	85	242	109	576	467
	1904	11	240	9	51	150	159	137	37	146	36	321	285
	1899	18	250	14	36	200	.....	117	20	97	47	232	185
Pottery, terra-cotta, and fire-clay products.	1909	186	17,751	69	1,163	10,519	20,778	32,167	1,443	8,628	6,461	21,173	14,712
	1904	205	17,072	100	1,047	15,919	24,754	26,300	1,177	7,677	4,823	18,551	13,728
	1899	248	12,913	225	818	11,870	20,051	15,504	706	5,001	3,229	11,851	8,622
Printing and publishing.....	1909	1,655	22,754	1,480	5,518	15,756	18,417	38,053	5,458	9,355	11,904	41,657	29,753
	1904	1,542	19,288	1,513	3,916	13,859	12,272	26,724	3,585	7,573	8,679	31,327	22,648
	1899	1,340	16,949	1,412	2,320	13,208	.....	20,958	2,105	6,351	6,970	23,833	16,863
Pumps, not including steam pumps....	1909	20	1,083	23	158	597	1,322	2,273	144	517	1,271	2,747	1,476
	1904	19	444	21	54	369	633	650	55	192	218	672	454
	1899	30	131	35	13	83	.....	116	12	36	90	193	103
Safes and vaults.....	1909	10	2,437	1	422	2,014	3,177	5,075	749	1,321	2,162	5,488	3,326
	1904	11	2,342	1	188	2,153	2,316	4,549	454	1,395	2,047	4,895	2,848
	1899	10	1,453	2	124	1,327	.....	3,661	141	679	1,123	2,408	1,285
Salt.....	1909	8	722	.....	74	648	4,034	1,981	77	361	1,080	1,807	717
	1904	8	592	1	52	539	1,705	1,242	53	236	663	1,168	565
	1899	10	729	3	48	678	1,277	797	42	243	424	818	394
Screws, machine.....	1909	6	363	.....	39	324	915	660	41	204	178	598	420
	1904	4	501	.....	63	438	1,160	1,376	83	226	301	793	492
Sewing machines, cases, and attachments.	1909	4	4,050	1	218	3,831	2,973	4,973	276	2,105	2,518	5,972	3,454
	1904	13	2,007	.....	101	1,906	1,547	4,052	140	1,057	1,803	3,882	2,079
	1899	15	1,463	.....	157	1,306	.....	3,404	208	740	1,446	2,923	1,477
Shoddy.....	1909	4	469	1	30	438	1,100	1,096	62	200	742	1,257	515
	1904	5	450	3	21	426	1,100	922	37	158	948	1,239	291
	1899	6	509	.....	35	474	1,035	1,398	55	165	1,078	1,479	401
Show cases.....	1909	14	402	6	47	340	509	535	52	173	307	668	351
	1904	14	518	7	73	438	742	380	74	228	314	749	435
	1899	9	125	13	12	100	.....	80	9	51	81	189	108
Slaughtering and meat packing.....	1909	158	3,864	154	624	3,086	9,873	12,399	687	1,857	44,347	50,804	6,457
	1904	105	2,750	110	316	2,315	4,434	6,465	294	1,855	26,311	29,155	3,844
	1899	77	2,193	96	313	1,784	.....	5,396	266	823	18,007	20,708	2,761
Soap.....	1909	44	2,280	25	481	1,774	3,579	12,732	573	827	11,661	17,077	5,416
	1904	43	2,323	21	528	1,774	3,166	17,985	743	681	8,395	11,791	3,396
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stoves and furnaces, including gas and oil stoves.	1909	102	8,352	38	1,040	7,274	9,478	15,625	1,201	4,217	6,300	15,358	9,058
	1904	102	7,144	70	565	6,509	6,859	11,251	651	3,634	4,005	10,191	6,186
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tin plate and terneplate.....	1909	4	742	.....	66	676	1,849	1,033	76	449	7,155	7,889	734
	1904	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1899	12	736	1	38	697	580	1,153	33	395	5,012	6,023	1,011
Tobacco manufactures.....	1909	1,146	14,681	1,269	781	12,631	1,401	11,070	980	4,505	12,075	28,907	16,832
	1904	1,329	13,280	1,483	622	11,175	1,011	15,647	533	3,912	7,500	20,459	12,989
	1899	1,148	11,958	1,291	534	10,133	1,127	6,661	606	3,406	5,635	16,993	11,358
Umbrellas and canes.....	1909	15	371	15	69	287	82	565	69	105	607	1,005	398
	1904	12	369	9	80	280	111	502	76	88	488	833	345
	1899	14	.....	.....	49	288	.....	296	32	88	206	496	200
Wall plaster.....	1909	23	340	10	71	259	1,323	679	76	106	434	935	501
	1904	27	548	10	72	466	1,730	1,124	62	225	382	1,037	655
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Woolen, worsted, and felt goods, and wool hats.	1909	20	2,711	23	122	2,566	6,504	7,159	207	925	4,616	7,690	3,074
	1904	27	1,886	38	75	1,773	3,178	3,585	92	563	2,137	3,587	1,450
	1899	38	.....	.....	84	1,234	.....	2,710	95	384	1,681	2,826	1,145
All other industries.....	1909	1,586	62,913	1,350	3,401	53,162	119,187	150,018	9,194	27,364	103,264	185,872	82,608
	1904	1,333	45,919	1,218	4,690	40,011	75,058	93,881	5,053	13,444	61,156	105,787	44,631
	1899	1,528	.....	.....	3,502	34,189	.....	66,609	3,541	14,168	48,060	85,884	37,824

¹ Excluding statistics for one establishment, to avoid disclosure of individual operations.
² Not reported separately.
³ Figures can not be shown without disclosing individual operations.

MANUFACTURES—OHIO.

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TABLE I.—COMPARATIVE SUMMARY FOR 1909, 1904, AND 1899—Continued.

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES.

INDUSTRY.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
			Total.	Proprietors and firm members.	Salaried employ-ees.	Wage earners (average number).							
AKRON—All industries.....	1909	246	19,023	159	3,033	15,831	36,283	\$58,216	\$3,004	\$8,936	\$43,071	\$73,158	\$30,087
	¹ 1904	186	10,706	128	952	9,626		28,638	1,116	4,893	20,410	33,579	13,149
	1899	178			1,093	8,269		23,725	992	3,615	12,720	22,016	9,296
Artificial stone.....	1909	10	51	16	5	30	16	31	3	15	15	41	26
	1904	3	31	7	2	22		17	2	11	8	36	28
	² 1899												
Bread and other bakery products.....	1909	25	145	23	32	90	105	161	23	58	255	417	162
	1904	12	42	12		30		33		18	47	76	29
	1899	10	61	18	9	34		27	4	16	52	95	48
Brick and tile.....	1909	3	96	3	8	85	345	116	7	43	40	141	101
	1904	4	73	3	7	63		142	4	32	35	100	65
	1899	3	82	6	4	72		85	3	29	18	76	58
Carriages and wagons and materials.....	1909	7	137	8	14	115	357	442	15	68	78	236	158
	1904	10	182	12	11	169		407	15	88	142	293	151
	1899	7			17	156		205	17	73	91	223	132
Foundry and machine-shop products...	1909	26	1,061	12	80	969	2,015	3,008	106	650	1,062	2,248	1,186
	1904	20	900	14	54	832		2,924	62	488	1,360	2,368	1,008
	1899	³ 19	1,391	13	207	1,171		3,540	155	609	746	2,095	1,349
Liquors, malt.....	1909	3	110		29	81	1,522	914	86	57	170	645	475
	1904	3	77		14	63		494	28	46	113	405	292
	⁴ 1899												
Lumber and timber products.....	1909	10	378	8	51	319	989	663	57	191	437	792	355
	1904	⁵ 8	192	9	24	169		417	22	99	396	602	266
	1899	6	130	10	11	109		210	11	53	82	103	111
Patent medicines and compounds and druggists' preparations.	1909	3	18	9	3	6		19	2	2	9	29	20
	1904	⁶ 5	10	7	3	3		16		2	5	28	23
	1899	⁶ 6	13	5	3	5		48	3	1	13	36	23
Pottery, terra-cotta, and fire-clay products.	1909	15	1,162	5	70	1,087	2,557	1,989	87	557	403	1,350	947
	1904	18	1,877	5	73	1,299		2,520	85	644	406	1,718	1,312
	1899	18	963	8	45	900		1,455	42	412	215	867	652
Printing and publishing.....	1909	27	990	16	240	734	934	3,587	167	452	597	2,353	1,756
	1904	20	1,052	12	70	970		2,489	120	523	655	2,335	2,180
	1899	18	1,108	11	148	949		2,412	143	466	562	2,049	1,487
Stoves and furnaces, including gas and oil stoves.	1909	5	396		62	334	610	304	77	228	245	754	509
	1904	3	332	2	28	302		473	34	199	165	468	303
	² 1899												
Tobacco manufactures.....	1909	7	17	7		10		5		4	6	18	12
	1904	10	26	11		15		7		6	0	22	16
	1899	7	16	7		9		5		4	9	22	13
All other industries.....	1909	100	14,462	52	2,439	11,971	26,813	46,477	2,374	6,611	39,754	64,134	24,380
	1904	70	6,412	34	669	5,709		18,699	743	2,737	17,072	24,608	7,536
	1899	75			649	4,854		15,738	614	1,952	10,932	16,360	5,428
CANTON—All industries.....	1909	204	11,313	129	1,220	9,964	27,016	\$25,342	\$1,347	\$5,719	\$14,644	\$28,583	\$13,939
	1904	158	6,666	131	597	5,938		12,850	636	2,904	10,561	16,581	5,997
	1899	164			504	5,149		9,055	497	2,345	4,349	9,575	5,226
Agricultural implements.....	1909	5	351		68	283	442	1,047	99	127	401	819	418
	1904	5	503	1	67	525		2,421	76	239	533	1,154	621
	1899	6	689	1	102	586		2,474	100	208	539	1,185	646
Brass and bronze products.....	1909	5	35	7	6	22	38	47	2	16	27	55	28
	1904	³ 3	8	5	1	2		13	(⁶)	1	4	15	11
Bread and other bakery products.....	1909	19	97	23	15	59	38	90	12	34	147	253	106
	1904	7	54	12		42		40		21	49	90	41
	1899	11	63	15	1	47		35	1	21	59	120	61
Confectionery.....	1909	7	44	7	7	30	18	50	2	10	42	69	27
	1904	3	20	3		17		11		5	11	19	8
	⁴ 1899												
Cutlery and tools, not elsewhere specified.	1909	5	179		41	133	230	308	46	74	93	258	165
	1904	3	165	3	33	120		165	17	56	90	207	117
	1899	3				51		42		25	15	67	52
Foundry and machine-shop products...	1909	32	2,044	13	283	1,748	3,409	4,578	353	1,005	2,267	4,891	2,624
	1904	25	1,400	16	159	1,225		2,991	199	620	1,298	2,704	1,406
	1899	24			105	877		1,343	87	394	655	1,519	864
Furniture and refrigerators.....	1909	5	208	2	27	179	354	530	32	99	83	296	213
	1904	5	224	1	20	203		380	21	111	105	340	235
	1899	5	264	1	27	236		382	84	111	87	352	265
Leather goods.....	1909	3	305	2	36	267	131	468	34	116	339	549	210
	1904	3	69	3	10	56		89	11	27	54	117	63
	1899	⁵ 3			12	201		161	11	59	212	322	110

¹ Figures do not agree with those published in 1904, because it was necessary to revise the totals in order to include data only for those establishments located within the corporate limits of the city.
² Not reported separately.
³ Excluding statistics for two establishments, to avoid disclosure of individual operations.
⁴ Figures can not be shown without disclosing individual operations.
⁵ Excluding statistics for one establishment, to avoid disclosure of individual operations.
⁶ Less than \$500.

MANUFACTURES—OHIO.

TABLE I.—COMPARATIVE SUMMARY FOR 1909, 1904, AND 1899—Continued.

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES—Continued.

INDUSTRY.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
			Total.	Proprietors and firm members.	Salaried employes.	Wage earners (average number).							
Expressed in thousands.													
CANTON—Continued.													
Lumber and timber products.....	1909	3	52	1	5	46	180	\$107	\$6	\$29	\$95	\$135	\$40
	1904	10	95	11	4	30		127	3	44	100	202	102
	1899	3			2	36		97	1	15	51	83	32
Printing and publishing.....	1909	17	219	17	41	161	185	326	37	88	78	293	215
	1904	13	160	13	16	131		184	20	74	52	218	166
	1899	11	123	8	12	103		116	12	46	38	144	106
Tobacco manufactures.....	1909	19	93	23		70		33		27	42	106	64
	1904	16	85	17	1	67		21	1	33	22	79	67
	1899	16	61	15	3	43		13	1	14	16	54	38
All other industries.....	1909	84	7,686	34	691	6,961	21,991	17,758	724	4,094	11,030	20,869	9,829
	1904	66	3,802	46	286	3,470		6,702	288	1,733	2,276	5,446	3,170
	1899	83			240	2,989		4,392	250	1,392	2,677	5,729	3,062
CINCINNATI—All industries ..													
	1909	2,184	72,488	2,015	10,281	60,192	88,597	\$150,254	\$12,759	\$31,101	\$101,832	\$194,516	\$92,584
	1904	2,171	68,984	2,180	8,190	58,584		130,272	9,677	27,390	83,258	166,059	82,801
	1899	2,454			6,194	54,942		108,464	6,437	23,104	71,891	141,678	70,287
Bags, paper.....	1909	5	358		59	290	320	673	72	129	730	1,088	358
	1904	5	291	3	91	197		358	47	68	401	581	180
	1899	7	165	4	35	126		189	26	38	324	463	139
Blacking and cleansing and polishing preparations.	1909	14	92	21	33	38	34	90	24	14	112	255	143
	1904	13	34	10	7	17		32	6	5	35	77	42
	1899	24	20	2	5	13		20	12	3	19	56	37
Boots and shoes, including cut stock and findings.	1909	32	8,702	21	692	7,989	4,631	7,656	1,016	3,518	8,584	14,999	6,415
	1904	35	7,178	32	502	6,644		4,661	535	2,563	6,204	11,152	4,868
	1899	46			385	6,747		3,671	489	2,132	5,180	8,626	3,446
Boxes, cigar.....	1909	8	248	10	16	222	405	213	17	82	177	347	170
	1904	6	210	8	13	189		193	11	67	238	371	133
	1899	8	264	11	13	240		188	9	70	216	354	138
Boxes, fancy and paper.....	1909	15	738	9	60	669	218	442	70	185	292	679	337
	1904	14	692	14	39	639		374	35	153	234	509	275
	1899	12	581	14	24	543		202	32	134	153	426	273
Brass and bronze products.....	1909	14	685	12	60	563	424	1,304	80	329	385	996	611
	1904	17	668	25	56	587		1,038	60	309	465	1,108	643
	1899	14	563	20	27	516		458	23	206	312	680	368
Bread and other bakery products.....	1909	187	1,768	186	242	1,340	909	2,653	237	723	3,034	5,103	2,069
	1904	199	1,628	198	116	1,314		2,012	88	502	2,311	3,892	1,581
	1899	258	1,548	275	172	1,101		1,505	113	461	1,671	3,048	1,377
Brick and tile.....	1909	7	114	7	8	99	280	100	7	41	13	94	81
	1904	11	95	14	1	80		94	1	38	13	80	67
	1899	12	73	19		54		26		31	12	66	54
Canning and preserving.....	1909	9	315	5	93	217	420	646	105	77	483	825	342
	1904	7	495	5	73	417		456	87	129	765	1,282	497
	1899	8	305	8	33	264		348	53	107	600	1,077	477
Carriages and wagons and materials.....	1909	74	2,677	64	343	2,250	2,523	4,477	361	1,295	3,702	6,825	3,123
	1904	78	3,146	72	369	2,705		4,026	328	1,380	4,576	7,670	3,094
	1899	73			313	2,771		4,278	263	1,419	4,284	7,220	2,956
Cars and general shop construction and repairs by steam-railroad companies.	1909	3	327		13	314	590	398	14	203	111	328	217
	1904	3	474		25	449		211	22	282	199	510	311
	1899	4	478		18	460		156	16	253	148	454	306
Chemicals.....	1909	11	162	4	36	122	508	713	63	76	474	899	425
	1904	9	140	4	37	99		774	51	59	651	958	397
	1899	8	118	4	20	94		534	32	52	692	967	265
Clothing, men's, including shirts.....	1909	183	6,956	237	1,001	5,718	559	10,212	1,212	2,512	8,680	16,975	8,295
	1904	217	5,380	286	774	4,320		9,903	839	1,702	7,756	14,761	7,065
	1899	361			635	4,168		8,462	641	1,419	6,886	12,462	5,666
Clothing, women's.....	1909	26	1,541	41	175	1,325	176	1,230	217	619	1,514	2,913	1,399
	1904	29	1,366	40	155	1,171		1,269	153	457	1,497	2,712	1,215
	1899	38	1,522	53	106	1,303		850	108	399	1,173	2,075	902
Coffee and spice, roasting and grinding..	1909	8	356	7	128	221	691	1,063	131	91	1,585	2,110	515
	1904	10	281	9	102	170		624	96	62	1,432	1,835	403
	1899	10	187	10	68	109		474	71	42	1,160	1,416	266
Confectionery.....	1909	22	922	21	130	771	573	970	139	279	1,222	2,029	807
	1904	15	739	17	99	653		725	65	225	977	1,568	591
	1899	14			83	437		691	73	148	894	1,310	416
Cooperage and wooden goods, not elsewhere specified.	1909	20	697	17	48	632	1,269	1,44	75	292	766	1,232	466
	1904	23	718	25	52	641		1,084	71	318	727	1,350	623
	1899	18			23	662		786	42	258	579	1,021	442
Copper, tin, and sheet-iron products....	1909	37	1,019	30	166	833	1,154	2,019	147	413	1,683	2,775	1,142
	1904	35	1,083	34	131	918		1,516	141	432	1,199	2,348	1,149
	1899	36			70	680		789	59	285	833	1,483	650

¹ Excluding statistics for two establishments, to avoid disclosure of individual operations.
² Excluding statistics for one establishment, to avoid disclosure of individual operations.

MANUFACTURES—OHIO.

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TABLE I.—COMPARATIVE SUMMARY FOR 1909, 1904, AND 1899—Continued.

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES—Continued.

INDUSTRY.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
			Total.	Proprietors and firm members.	Salaried employes.	Wage earners (average number).							
Expressed in thousands.													
CINCINNATI—Continued.													
Cutlery and tools, not elsewhere specified.	1909	9	80	14	11	55	166	\$101	\$13	\$35	\$51	\$136	\$85
	1904	11	116	10	21	85	.....	135	21	45	48	175	127
	1899	10	79	11	11	57	.....	67	11	31	55	135	80
Electrical machinery, apparatus, and supplies.	1909	13	303	9	71	313	397	529	95	200	333	836	503
	1904	13	310	13	54	243	.....	347	60	136	283	621	338
	1899	9	292	8	51	233	.....	321	48	99	530	813	283
Flags, banners, regalia, society badges, and emblems.	1909	8	498	3	92	403	317	668	88	162	503	888	385
	1904	10	399	8	64	327	.....	344	77	114	331	699	368
	1899	17	414	8	64	342	.....	259	46	83	284	620	336
Flour-mill and gristmill products.....	1909	6	84	3	29	52	685	400	33	33	957	1,083	126
	1904	7	122	6	23	93	.....	377	29	40	810	973	163
	1899	6	.....	.....	16	61	.....	272	21	30	671	781	110
Foundry and machine-shop products...	1909	200	10,110	120	1,456	8,534	12,590	21,400	1,876	4,985	7,044	18,330	11,336
	1904	186	9,437	126	1,131	8,180	.....	17,240	1,298	4,254	6,309	15,958	9,649
	1899	194	.....	.....	864	8,106	.....	12,439	846	3,895	6,431	14,557	8,126
Furniture and refrigerators.....	1909	60	2,806	67	213	2,026	3,499	3,024	263	1,071	1,727	4,062	2,335
	1904	62	3,068	70	292	2,708	.....	4,312	283	1,327	1,962	4,821	2,859
	1899	54	2,067	72	240	2,355	.....	3,817	216	966	1,504	3,594	2,030
Hats and caps, other than felt, straw, and wool.	1909	12	323	20	43	260	33	204	45	112	284	532	248
	1904	11	288	17	20	251	.....	125	28	87	181	424	243
	1899	12	326	20	21	285	.....	136	17	86	241	447	206
Hosiery and knit goods.....	1909	6	231	5	6	220	192	426	16	84	257	442	185
	1904	5	290	8	11	271	.....	372	18	77	233	471	238
	1899	9	248	10	1	237	.....	413	4	69	127	275	148
Ice, manufactured.....	1909	8	168	1	38	129	3,229	1,851	51	81	124	385	261
	1904	10	133	1	23	109	.....	1,146	27	68	100	332	232
	1899	5	46	1	8	37	.....	148	8	19	26	81	55
Jewelry.....	1909	15	284	25	49	210	88	1,002	52	156	518	936	418
	1904	11	271	17	39	215	.....	452	40	132	189	548	359
	1899	13	.....	.....	34	177	.....	616	25	99	486	790	304
Leather goods.....	1909	16	659	20	106	533	230	1,475	101	277	790	1,499	709
	1904	16	625	24	87	514	.....	874	85	271	725	1,407	682
	1899	19	.....	.....	113	622	.....	909	99	270	844	1,435	591
Leather, tanned, curried, and finished..	1909	13	1,043	10	36	997	2,269	9,503	71	570	3,677	5,059	1,382
	1904	10	1,021	11	34	976	.....	4,640	63	510	2,285	3,405	1,120
	1899	15	986	18	25	943	.....	4,865	37	412	2,490	3,417	957
Liquors, distilled.....	1909	4	300	.....	29	271	1,750	2,834	63	178	1,824	8,745	6,921
	1904	4	459	2	46	411	.....	1,658	68	206	2,266	9,610	7,344
	1899	3	199	2	34	163	.....	1,523	55	98	1,034	9,420	8,386
Liquors, malt.....	1909	22	1,858	.....	280	1,578	11,416	15,464	614	1,168	2,173	8,874	6,701
	1904	21	1,520	1	232	1,287	.....	14,357	462	938	1,884	7,793	5,819
	1899	21	1,481	6	193	1,282	.....	11,371	361	911	1,403	6,387	4,984
Liquors, vinous.....	1909	5	16	7	1	8	6	57	1	5	19	40	21
	1904	5	15	7	.....	8	.....	63	.....	4	19	41	22
	1899	5	17	6	3	8	.....	28	3	4	15	34	19
Lumber and timber products.....	1909	45	1,866	30	215	1,621	6,808	6,560	291	863	2,867	5,021	2,134
	1904	43	1,736	48	185	1,593	.....	5,562	210	792	2,627	5,043	2,416
	1899	31	1,430	41	86	1,303	.....	2,393	94	582	1,375	3,408	1,833
Marble and stone work.....	1909	25	340	30	41	269	854	582	50	181	252	632	360
	1904	21	487	30	40	417	.....	517	42	297	373	1,001	628
	1899	22	.....	.....	20	326	.....	416	18	163	236	524	288
Mattresses and spring beds.....	1909	9	293	10	28	165	227	311	22	74	223	394	171
	1904	8	85	8	5	72	.....	89	4	31	138	212	74
	1899	7	.....	.....	12	110	.....	103	6	38	139	236	97
Millinery and lace goods.....	1909	11	494	10	56	428	59	136	49	120	294	547	253
	1904	9	293	10	19	264	.....	134	11	85	158	324	166
	1899	11	283	12	8	243	.....	121	4	66	111	229	118
Models and patterns, not including paper patterns.	1904	9	104	11	4	89	65	70	6	63	54	151	97
	1904	15	96	22	3	71	.....	29	.....	43	12	88	76
	1899	20	136	25	3	108	.....	71	3	65	27	149	122
Musical instruments, pianos and organs and materials.	1909	7	760	5	43	712	855	1,185	62	371	1,080	1,753	673
	1904	4	711	.....	32	679	.....	861	51	342	882	1,488	606
	1899	4	538	2	23	513	.....	791	31	226	489	931	442
Paint and varnish.....	1909	24	636	19	209	408	1,356	4,026	282	215	2,486	3,880	1,394
	1904	23	396	18	108	270	.....	3,108	149	148	2,000	2,628	628
	1899	21	400	24	109	267	.....	2,325	139	144	1,522	2,255	733
Paper goods, not elsewhere specified....	1909	6	144	7	24	113	252	319	29	42	205	346	141
	1904	4	49	4	6	39	.....	57	6	12	56	106	50
	1899	4	59	4	9	46	.....	83	6	19	102	176	74
Patent medicines and compounds and druggists' preparations.	1909	50	448	40	206	292	404	953	198	90	497	1,230	733
	1904	37	570	37	168	365	.....	1,207	255	122	439	1,412	973
	1899	50	565	52	160	353	.....	939	186	99	433	1,467	1,034

1 Excluding statistics for two establishments, to avoid disclosure of individual operations.
 2 Excluding statistics for one establishment, to avoid disclosure of individual operations.

MANUFACTURES—OHIO.

TABLE I.—COMPARATIVE SUMMARY FOR 1909, 1904, AND 1899—Continued.

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES—Continued.

INDUSTRY.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
			Total.	Proprietors and firm members.	Salariéd employées.	Wage earners (average number).							
Expressed in thousands.													
CINCINNATI—Continued.													
Pottery, terra-cotta, and fire-clay products.	1909	7	276	3	36	237	370	\$727	\$44	\$118	\$52	\$370	\$318
	1904	8	212	8	35	199	-----	300	33	84	44	278	234
	1899	7	321	7	27	237	-----	413	23	124	62	291	229
Printing and publishing.....	1909	280	5,391	246	1,279	3,866	4,671	8,451	1,379	2,480	3,349	11,519	3,170
	1904	264	5,394	228	1,169	3,997	-----	8,430	1,170	2,317	3,218	10,321	7,103
	1899	233	4,828	237	728	3,893	-----	7,212	728	2,125	2,388	8,193	5,805
Safes and vaults.....	1909	5	703	1	123	579	970	1,150	257	359	630	1,401	771
	1904	4	626	1	68	557	-----	532	110	313	490	1,151	661
	1899	5	490	2	60	428	-----	615	61	206	340	773	433
Show cases.....	1909	3	74	-----	11	63	118	58	12	43	50	116	66
	1904	3	94	1	12	31	-----	78	10	47	74	164	90
	1899	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Slaughtering and meat packing.....	1909	55	1,368	69	183	1,110	3,710	4,654	205	669	16,974	19,320	2,346
	1904	48	1,041	63	103	878	-----	2,857	113	522	11,762	13,510	1,748
	1899	27	990	36	98	856	-----	2,893	104	415	8,307	10,370	1,563
Soap.....	1909	16	663	8	164	491	699	1,621	205	193	1,359	2,852	993
	1904	14	805	8	152	645	-----	2,192	238	223	1,519	2,690	1,171
	1899	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Stoves and furnaces, including gas and oil stoves.	1909	15	1,092	3	217	872	1,080	2,150	209	485	1,013	2,325	1,612
	1904	411	698	6	78	614	-----	873	76	329	365	1,003	638
	1899	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Tobacco manufactures.....	1909	268	2,929	228	175	2,526	247	2,364	189	988	1,640	4,153	2,513
	1904	263	3,017	281	202	3,434	-----	3,188	182	1,287	2,245	5,748	3,503
	1899	306	4,247	147	205	3,895	-----	2,067	213	1,380	2,265	6,768	4,503
All other industries.....	1909	337	9,017	299	1,494	7,224	13,315	19,608	1,881	3,747	15,099	26,637	11,538
	1904	300	9,049	290	1,116	7,643	-----	24,406	1,220	3,376	9,461	18,960	9,499
	1899	393	-----	-----	908	7,088	-----	21,613	972	2,918	11,578	19,908	8,330
CLEVELAND—All industries.													
	1909	2,148	98,686	1,718	12,240	84,728	199,898	\$227,397	\$15,506	\$48,053	\$154,915	\$271,961	\$117,046
	1904	1,616	72,362	1,445	6,376	64,041	-----	156,321	8,299	33,450	97,578	171,924	74,346
	1899	1,350	-----	5,064	-----	55,341	-----	101,243	5,463	26,518	76,465	139,356	62,891
Artificial stone.....	1909	18	158	19	18	121	158	165	16	76	92	233	141
	1904	5	52	7	7	38	-----	84	6	22	22	60	38
Automobiles, including bodies and parts	1909	32	7,115	20	687	6,408	9,135	16,600	875	4,023	10,417	21,404	10,987
	1904	10	1,949	3	140	1,800	-----	3,095	194	1,027	2,030	4,424	2,594
	1899	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Blackening and cleansing and polishing preparations.	1909	19	100	16	33	51	55	231	36	29	159	355	196
	1904	7	29	8	9	12	-----	26	7	6	17	44	27
	1899	3	8	4	1	3	-----	2	(e)	2	4	13	9
Boots and shoes, including cut stock and findings.	1909	6	631	8	66	557	304	467	84	225	510	951	441
	1904	4	578	10	27	541	-----	327	23	195	398	786	388
	1899	8	-----	-----	28	472	-----	319	29	126	492	765	273
Boxes, cigar.....	1909	5	78	5	4	69	27	57	6	19	43	97	54
	1904	4	63	6	3	54	-----	55	2	16	33	66	33
	1899	4	52	6	4	42	-----	30	2	11	25	48	23
Boxes, fancy and paper.....	1909	6	790	-----	51	739	647	824	68	266	627	1,141	514
	1904	6	359	4	34	321	-----	404	27	112	199	421	222
	1899	5	329	4	11	314	-----	128	12	88	99	270	171
Brass and bronze products.....	1909	28	931	23	107	801	872	2,737	121	518	1,362	2,508	1,206
	1904	19	636	21	54	561	-----	1,576	70	310	745	1,480	735
	1899	4	483	16	38	429	-----	596	47	235	362	931	599
Bread and other bakery products.....	1909	198	1,696	201	266	1,229	14	2,601	312	804	2,722	4,731	2,009
	1904	138	1,451	130	91	1,230	-----	1,881	81	611	1,719	2,982	1,233
	1899	104	773	103	118	552	-----	724	85	285	892	1,525	633
Brick and tile.....	1909	13	583	9	28	546	1,965	961	43	286	213	769	556
	1904	8	268	11	5	252	-----	363	9	141	84	346	282
	1899	9	-----	-----	3	196	-----	276	2	112	59	263	204
Carriages and wagons and materials....	1909	33	330	38	25	267	175	429	25	182	142	462	320
	1904	32	409	41	25	343	-----	374	28	203	189	549	300
	1899	36	-----	-----	25	375	-----	410	18	200	215	574	359
Cars and general shop construction and repairs by steam-railroad companies.	1909	6	1,473	-----	101	1,372	1,640	1,075	99	843	1,077	2,056	979
	1904	6	1,408	-----	95	1,313	-----	490	76	757	823	1,681	858
	1899	7	1,229	-----	74	1,155	-----	564	55	609	514	1,210	696
Chemicals.....	1909	5	557	-----	88	469	1,840	1,572	141	307	978	1,866	888
	1904	5	708	3	199	506	-----	809	301	308	671	1,373	702
	1899	6	471	1	114	356	-----	2,156	139	204	910	1,729	819
Clothing, men's, including shirts.....	1909	93	3,166	110	311	2,745	346	3,319	374	1,096	3,203	5,953	2,750
	1904	70	1,659	93	84	1,482	-----	1,595	122	642	1,300	2,979	1,613
	1899	113	1,734	156	111	1,467	-----	1,815	119	481	1,871	3,410	1,539

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 6 Less than \$500.

MANUFACTURES—OHIO.

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TABLE I.—COMPARATIVE SUMMARY FOR 1909, 1904, AND 1899—Continued.

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES—Continued.

INDUSTRY.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.				Primary horse-power	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
			Total.	Proprietors and firm members.	Salaried employes.	Wage earners (average number).							
Expressed in thousands.													
CLEVELAND—Continued.													
Clothing, women's.....	1909	96	6,226	100	708	5,418	771	\$4,941	\$1,120	\$2,003	\$6,496	\$12,789	\$6,293
	1904	78	3,804	102	368	3,394	.....	2,583	390	1,652	3,796	7,428	3,632
	1899	77	2,671	91	218	2,362	.....	1,598	221	842	2,445	4,213	1,768
Confectionery.....	1909	16	908	10	95	803	679	1,294	150	253	1,553	2,852	1,299
	1904	8	449	11	26	412	.....	511	44	106	558	1,715	1,157
	1899	10	.....	.....	36	437	.....	349	33	108	550	1,499	949
Cooperage and wooden goods, not elsewhere specified.	1909	10	289	9	19	261	533	500	36	136	471	708	237
	1904	9	187	10	10	167	.....	209	23	89	234	392	188
	1899	5	.....	.....	8	178	.....	249	17	73	102	224	122
Copper, tin, and sheet-iron products....	1909	37	1,531	32	135	1,364	1,231	4,782	183	640	1,628	2,966	1,338
	1904	19	477	19	53	405	.....	699	62	213	293	724	431
	1899	17	.....	.....	27	503	.....	609	29	214	344	705	361
Cutlery and tools, not elsewhere specified.	1909	15	1,662	11	207	1,444	3,246	4,097	223	759	665	2,395	1,730
	1904	8	871	7	57	807	.....	1,887	81	389	452	1,224	772
	1899	8	634	7	59	508	.....	984	56	260	265	890	625
Electrical machinery, apparatus, and supplies.	1909	40	1,899	20	301	1,578	1,980	3,308	346	760	1,780	4,036	2,256
	1904	30	1,403	18	210	1,235	.....	1,893	218	548	1,099	2,653	1,554
	1899	25	.....	.....	151	1,467	.....	2,220	144	602	1,278	2,552	1,274
Foundry and machine-shop products...	1909	231	20,348	121	2,312	17,915	24,204	41,610	3,134	10,485	15,324	37,443	22,110
	1904	164	14,464	98	1,348	13,018	.....	26,163	1,803	7,101	10,017	24,033	14,016
	1899	150	11,939	121	864	10,954	.....	13,957	966	5,516	7,847	18,424	10,577
Furniture and refrigerators.....	1909	25	557	19	71	467	578	660	73	288	491	1,069	578
	1904	26	614	18	53	543	.....	606	64	345	346	961	615
	1899	18	499	20	59	420	.....	989	64	213	511	1,030	519
Gas and electric fixtures and lamps and reflectors.	1909	17	499	16	67	326	199	313	96	193	229	654	425
	1904	17	346	6	51	289	.....	391	68	112	192	569	377
	1899	15	242	3	37	202	.....	162	23	76	101	252	151
Hats and caps, other than felt, straw, and wool.	1909	9	132	15	20	97	11	100	26	43	102	199	97
	1904	5	77	9	9	59	.....	71	7	34	56	151	95
	1899	8	332	13	12	327	.....	186	9	123	290	500	201
Hosiery and knit goods.....	1909	13	1,365	12	119	1,234	407	1,894	185	435	1,813	2,957	1,144
	1904	6	1,074	9	40	1,025	.....	926	49	348	1,061	1,957	896
	1899	5	555	7	7	541	.....	239	11	131	387	748	361
Ice, manufactured.....	1909	5	131	1	19	111	3,266	2,149	25	85	103	368	265
	1904	4	52	1	8	43	.....	667	10	33	45	195	150
	1899	4	39	1	12	26	.....	194	11	19	31	95	64
Iron and steel, steel works and rolling mills.	1909	14	8,278	2	738	7,538	60,575	25,087	849	5,150	28,039	33,463	10,424
	1904	9	9,110	.....	533	8,577	.....	23,921	574	4,956	22,772	32,279	9,507
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Jewelry.....	1909	15	124	12	10	102	34	115	12	66	62	208	146
	1904	5	55	4	4	47	.....	20	3	30	40	105	65
	1899	5	.....	.....	.....	31	.....	21	.....	15	13	42	29
Leather goods.....	1909	14	153	10	18	125	84	154	17	68	133	271	138
	1904	12	142	7	15	120	.....	98	12	60	89	230	141
	1899	9	.....	.....	15	160	.....	161	10	68	110	242	132
Leather, tanned, curried, and finished.	1909	4	124	1	15	108	422	356	18	69	468	636	168
	1904	4	104	2	12	90	.....	315	13	50	209	302	93
	1899	3	59	5	10	44	.....	171	9	18	105	151	46
Liquors, distilled.....	1909	4	6	5	.....	1	14	4	.....	1	6	14	8
	1904	4	7	4	.....	3	.....	17	.....	1	3	13	10
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Liquors, malt.....	1909	11	904	5	155	744	3,395	9,888	358	594	1,484	16,124	3,640
	1904	9	718	5	112	601	.....	5,949	217	503	1,108	3,986	2,878
	1899	10	582	10	95	477	.....	3,788	174	382	840	4,034	3,194
Liquors, vinous.....	1909	4	54	3	23	28	23	194	18	17	136	206	70
	1904	3	9	2	1	6	.....	87	1	4	14	31	17
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lumber and timber products.....	1909	51	1,319	22	150	1,147	5,263	2,380	172	699	2,732	4,021	1,289
	1904	37	1,216	30	102	1,084	.....	1,877	129	622	2,516	3,820	1,304
	1899	35	1,169	34	82	1,053	.....	1,258	85	466	1,083	2,055	972
Marble and stone work.....	1909	18	367	19	33	315	789	409	34	192	197	468	271
	1904	7	199	8	13	178	.....	296	17	116	106	297	191
	1899	10	.....	.....	12	210	.....	231	14	148	146	375	229
Mattresses and spring beds.....	1909	6	173	4	19	150	178	209	18	71	208	365	157
	1904	3	127	.....	15	112	.....	95	16	47	140	239	99
	1899	4	156	2	17	137	.....	71	15	55	165	286	121
Millinery and lace goods.....	1909	6	536	4	60	472	143	459	83	190	726	1,206	480
	1904	5	83	6	8	69	75	10	20	58	117	59
	1899	8	174	16	11	147	88	8	30	200	299	99

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 2 Excluding statistics for two establishments, to avoid disclosure of individual operations.
 3 Not reported separately.
 4 Figures can not be shown without disclosing individual operations.

TABLE I.—COMPARATIVE SUMMARY FOR 1909, 1904, AND 1899—Continued.

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES—Continued.

INDUSTRY.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
			Total.	Proprietors and firm members.	Salaried employ-ees.	Wage earners (average number).							
Expressed in thousands.													
CLEVELAND—Continued.													
Models and patterns, not including paper patterns.	1909	21	229	23	16	190	213	\$95	\$18	\$123	\$51	\$251	\$200
	1904	15	124	18	5	101	-----	87	10	70	20	143	123
	1899	13	135	14	4	117	-----	75	0	55	22	123	701
Musical instruments, pianos and organs and materials.	1909	3	52	-----	10	42	75	126	13	32	20	93	64
	1904	3	81	-----	9	72	-----	118	12	44	39	134	85
	1899	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Paint and varnish	1909	24	1,258	5	493	760	2,624	5,393	704	468	3,880	6,138	2,249
	1904	20	797	7	215	575	-----	3,161	245	304	2,625	3,700	1,675
	1899	16	691	12	288	391	-----	1,805	304	182	1,737	2,902	1,165
Patent medicines and compounds and druggists' preparations.	1909	50	322	56	141	125	66	429	124	62	316	1,010	694
	1904	30	149	31	66	52	-----	274	66	21	132	426	284
	1899	2 10	79	8	29	42	-----	147	31	19	84	214	130
Photo-engraving	1909	3	84	1	25	58	23	48	29	50	30	144	108
	1904	4	87	2	19	66	-----	48	14	53	10	125	115
	1899	3	45	2	8	35	-----	16	0	17	5	44	39
Printing and publishing	1909	245	4,671	171	1,306	3,104	3,328	6,944	1,505	2,009	2,780	9,635	6,835
	1904	2 184	3,291	164	836	2,291	-----	3,947	884	1,409	1,686	6,140	4,454
	1899	2 127	2,536	119	450	1,967	-----	3,227	473	1,120	1,325	4,340	3,024
Slaughtering and meat packing	1909	35	1,356	28	232	1,076	2,570	3,555	260	599	15,399	17,192	1,793
	1904	19	1,128	15	135	978	-----	2,270	121	566	9,338	10,616	1,278
	1899	3 10	757	7	173	577	-----	1,827	136	235	6,759	7,514	755
Soap	1909	6	57	2	14	41	143	108	16	26	148	214	66
	1904	6	75	1	25	49	-----	111	21	26	108	205	97
	1899	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Stoves and furnaces, including gas and oil stoves.	1909	20	2,097	7	247	1,843	1,899	4,093	281	1,155	2,286	4,977	2,691
	1904	17	1,677	11	139	1,527	-----	3,900	169	857	1,535	3,005	1,470
	1899	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Tobacco manufactures	1909	254	2,234	277	91	1,866	29	926	135	734	1,047	2,766	1,722
	1904	257	1,732	270	73	1,389	-----	1,116	69	531	646	1,910	1,270
	1899	2 117	1,124	130	51	943	-----	455	53	348	410	1,261	851
Umbrellas and canes	1909	5	98	5	24	69	12	114	27	25	143	253	110
	1904	4	79	5	20	54	-----	108	17	16	136	240	113
	1899	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Wall plaster	1900	3	64	-----	8	56	270	112	12	32	123	205	82
	1904	3	49	-----	4	45	-----	115	6	25	66	145	79
	1899	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
All other industries	1909	356	21,081	241	2,464	18,376	63,443	60,483	2,995	9,917	42,277	67,076	24,799
	1904	277	17,816	208	1,503	10,105	-----	60,630	1,910	7,719	27,737	44,308	16,571
	1899	320	-----	-----	1,802	25,064	-----	59,106	1,972	12,830	43,858	73,595	29,737
COLUMBUS—All industries													
	1909	566	20,523	435	3,660	16,428	35,780	\$48,747	\$3,781	\$8,892	\$25,204	\$49,032	\$23,828
	1904	459	17,127	422	2,355	14,350	-----	29,225	2,337	7,287	19,244	39,630	20,286
	1899	408	-----	-----	1,573	13,787	-----	23,462	1,515	6,028	18,252	34,748	16,496
Artificial stone	1909	5	36	4	7	25	38	38	5	17	23	57	34
	1904	3	27	2	4	21	-----	29	2	10	14	33	19
	1899	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Boots and shoes, including cut stock and findings.	1909	8	2,791	4	308	2,479	845	3,181	337	1,076	3,224	5,436	2,212
	1904	8	2,457	1	150	2,306	-----	2,245	191	926	3,055	5,426	2,370
	1899	8	2,032	1	151	1,880	-----	1,695	201	683	2,142	3,605	1,363
Brass and bronze products	1909	5	53	5	4	44	55	76	7	28	65	124	69
	1904	4	16	5	1	10	-----	6	(⁹)	5	16	28	12
	1899	3	46	2	8	36	-----	38	4	16	26	55	29
Bread and other bakery products	1909	58	642	53	154	435	75	1,608	145	222	1,092	1,765	673
	1904	20	392	24	69	299	-----	624	64	143	613	997	379
	1899	30	394	30	78	286	-----	467	57	113	461	811	330
Brick and tile	1909	3	37	4	1	32	130	28	1	14	5	35	30
	1904	4	117	5	8	104	-----	163	6	31	18	92	74
	1899	3	-----	-----	1	35	-----	16	1	17	5	23	23
Carriages and wagons and materials	1909	14	483	17	59	407	477	714	80	217	605	1,078	473
	1904	20	1,238	26	111	1,151	-----	1,998	121	557	1,270	2,558	1,283
	1899	23	-----	-----	115	1,187	-----	1,656	93	478	1,216	2,439	1,223
Coffee and spice, roasting and grinding	1909	3	264	-----	219	45	65	198	142	19	329	604	275
	1904	3	205	2	159	44	-----	226	122	22	395	605	300
	1899	3	99	2	70	27	-----	69	35	12	188	276	83
Copper, tin, and sheet-iron products	1909	6	173	4	29	140	93	251	33	71	472	700	228
	1904	4	49	4	7	38	-----	63	8	19	80	123	46
	1899	6	-----	-----	11	69	-----	120	8	22	48	115	67
Flour-mill and gristmill products	1909	4	32	6	6	20	815	239	8	15	297	384	87
	1904	4	40	5	10	25	-----	148	10	14	508	596	88
	1899	3	41	1	11	29	-----	160	13	16	481	532	51

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⁶ Less than \$500.

MANUFACTURES—OHIO.

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TABLE I.—COMPARATIVE SUMMARY FOR 1909, 1904, AND 1899—Continued.

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES—Continued.

INDUSTRY.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
			Total.	Proprietors and firm members.	Salaried employees.	Wage earners (average number).							
Expressed in thousands.													
COLUMBUS—Continued.													
Foundry and machine-shop products...	1909	58	3,745	46	687	3,012	4,148	\$9,656	\$735	\$1,841	\$3,465	\$7,744	\$4,276
	1904	49	3,299	43	388	2,808		6,344	464	1,550	3,393	7,008	3,615
	1899	43				222	2,971		4,277	283	1,433	2,398	5,070	2,672
Furniture and refrigerators.....	1909	8	422	4	44	374	553	487	61	189	405	747	342
	1904	14	232	2	26	204		320	29	91	230	405	175
	1899	4	250	4	33	213		265	24	67	205	428	223
Gas and electric fixtures and lamps and reflectors.	1909	9	373	4	35	334	263	573	38	141	371	770	399
	1904	13	40	4	4	32		74	4	18	28	62	34
	1899	3			3	64		85	4	30	34	103	69
Ice, manufactured.....	1909	5	183		25	158	1,784	676	21	91	68	253	185
	1904	4	111		18	93		658	10	42	34	128	94
	1899												
Leather goods.....	1909	11	200	13	59	128	127	584	43	74	353	560	207
	1904	11	175	14	37	124		308	26	74	223	433	210
	1899	12			50	160		246	38	59	202	395	193
Liquors, malt.....	1909	4	561		88	473	3,045	10,634	146	371	619	2,728	2,109
	1904	5	526	5	68	455		3,721	83	369	816	2,134	1,318
	1899	4	502	5	50	447		1,647	74	251	497	2,024	1,427
Lumber and timber products.....	1909	27	530	20	70	434	1,808	936	85	264	768	1,240	482
	1904	20	355	15	35	305		486	31	220	451	799	348
	1899	17	247	16	13	218		213	11	106	172	374	202
Marble and stone work.....	1909	6	90	5	15	70	445	236	12	47	75	169	94
	1904	4	128	2	15	111		131	39	71	78	188	110
	1899	8	88	8	9	71		63	5	40	33	114	81
Models and patterns, not including paper patterns.	1909	8	49	10	5	34	58	48	3	23	11	70	59
	1904	5	19	6	1	12		12	1	7	2	19	17
	1899												
Paint and varnish.....	1909	5	119	1	68	55	141	413	68	28	346	602	256
	1904	13	65		27	38		172	39	19	155	282	127
	1899	13	70		23	47		155	30	18	115	205	90
Patent medicines and compounds and druggists' preparations.	1909	13	281	11	130	140	285	730	95	61	239	946	707
	1904	9	242	9	70	163		869	50	55	881	3,214	2,333
	1899	10			35	103		713	32	66	491	1,611	1,120
Printing and publishing.....	1909	91	1,433	71	461	901	879	1,823	417	592	689	2,660	1,971
	1904	76	1,346	78	421	847		1,352	294	516	475	1,916	1,441
	1899	52			181	771		975	137	442	378	1,333	955
Slaughtering and meat packing.....	1909	6	166	5	31	130	365	636	29	101	1,064	2,354	399
	1904	4	79	5	5	69		116	5	49	737	852	115
	1899	5	88	11	4	73		152	2	34	630	714	84
Stoves and furnaces, including gas and oil stoves.	1909	10	360	4	62	294	377	707	65	173	310	722	412
	1904	10	300	9	36	255		425	46	132	190	497	307
	1899												
Tobacco manufactures.....	1909	35	278	37	18	223		150	21	81	155	436	281
	1904	47	287	55	12	220		95	11	70	107	349	242
	1899	31	537	32	22	483		332	20	113	104	452	348
All other industries.....	1909	184	7,222	107	1,074	6,041	18,909	14,125	1,134	3,136	9,264	16,848	7,584
	1904	135	5,332	101	675	4,556		8,642	671	5,470	2,279	10,694	5,224
	1899	137			483	4,518		10,123	443	2,012	8,426	14,164	5,738
DAYTON—All industries.....													
Boxes, cigar.....	1909	3	97	4	7	86	358	75	5	23	47	85	38
	1904	3	115	3	7	105		77	5	27	45	106	61
	1899	3	122	3	9	110		59	6	36	37	100	63
Boxes, fancy and paper.....	1909	5	594		54	540	376	381	65	196	486	932	446
	1904	5	437		51	386		531	66	114	379	743	364
	1899	3	389		39	350		342	48	101	261	491	230
Brass and bronze products.....	1909	7	246	7	29	210	340	494	47	145	213	481	268
	1904	14	213	5	19	189		436	34	109	111	337	223
	1899	3	282	3	19	260		518	32	89	163	375	212
Bread and other bakery products.....	1909	65	519	74	95	350	401	719	86	137	949	1,531	582
	1904	47	365	53	50	262		481	39	112	538	861	323
	1899	53	278	61	31	186		444	21	88	332	629	297
Brick and tile.....	1909	4	31	5	1	25	165	27	1	11	4	20	22
	1904	3	38	4	2	32		35	2	15	6	33	27
	1899												
Carriages and wagons and materials.....	1909	17	425	18	33	374	697	677	52	203	347	802	455
	1904	18	491	21	27	383		651	40	167	254	563	312
	1899	13			28	477		652	42	206	330	733	408

¹ Excluding statistics for one establishment, to avoid disclosure of individual operations.
² Figures can not be shown without disclosing individual operations.
³ Excluding statistics for two establishments, to avoid disclosure of individual operations.
⁴ Not reported separately.

MANUFACTURES—OHIO.

TABLE I.—COMPARATIVE SUMMARY FOR 1909, 1904, AND 1899—Continued.
CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES—Continued.

INDUSTRY.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
			Total.	Proprietors and firm members.	Salariéd employees.	Wage earners (average number).							
Expressed in thousands.													
DAYTON—Continued.													
Clothing, men's, including shirts.....	1909	4	237	4	37	196	125	\$211	\$26	\$71	\$209	\$354	\$145
	1904	4	228	4	20	204	-----	180	17	66	167	315	148
	1899	4	312	5	23	234	-----	250	26	70	174	328	154
Coffee and spice, roasting and grinding..	1909	5	271	3	132	136	304	1,105	143	73	1,607	2,245	638
	1904	4	153	1	59	98	-----	500	68	40	1,260	1,571	311
	1899	3	64	4	18	42	-----	188	15	17	386	507	121
Confectionery.....	1909	11	176	12	22	142	50	104	11	51	196	339	143
	1904	8	134	10	17	107	-----	61	11	33	90	189	99
	1899	4	-----	-----	15	62	-----	23	5	17	80	126	46
Copper, tin, and sheet-iron products....	1909	11	98	14	21	63	50	77	5	44	38	178	90
	1904	6	80	10	5	71	-----	189	5	44	65	153	88
	1899	8	-----	-----	2	74	-----	109	2	34	99	165	66
Cutlery and tools, not elsewhere specified.	1909	4	50	2	8	40	59	51	7	21	7	62	55
	1904	3	23	4	-----	19	-----	12	-----	10	3	18	15
	1899	3	9	2	-----	7	-----	7	-----	7	3	16	13
Electrical machinery, apparatus, and supplies.	1909	7	134	3	27	104	334	232	29	49	90	235	145
	1904	5	151	1	28	122	-----	277	30	66	111	325	214
	1899	5	142	4	13	125	-----	217	12	58	74	197	123
Flour-mill and gristmill products.....	1909	6	65	8	16	41	383	266	25	28	548	669	171
	1904	4	58	4	9	45	-----	154	19	29	570	644	124
	1899	4	-----	-----	8	46	-----	211	15	30	525	624	99
Foundry and machine-shop products....	1909	69	4,136	34	517	3,585	5,576	9,530	583	2,033	2,800	6,778	3,978
	1904	50	3,637	59	355	3,223	-----	6,318	404	1,714	2,268	5,639	3,271
	1899	140	3,109	38	173	2,898	-----	4,647	210	1,526	2,509	5,019	2,610
Furniture and refrigerators.....	1909	10	491	5	63	423	795	1,087	62	200	287	744	457
	1904	6	477	2	48	427	-----	966	43	193	256	758	482
	1899	6	438	1	34	403	-----	806	31	131	285	528	243
Liquors, malt.....	1909	3	275	-----	54	221	2,305	5,750	88	148	261	1,218	957
	1904	3	235	-----	37	198	-----	1,287	56	147	257	1,087	830
	1899	9	186	5	29	162	-----	1,727	43	97	183	794	611
Lumber and timber products.....	1909	11	580	9	59	512	1,650	1,108	69	325	878	1,417	539
	1904	11	517	9	50	458	-----	649	58	273	720	1,241	521
	1899	8	-----	-----	25	453	-----	345	25	228	484	882	398
Marble and stone work.....	1909	6	52	9	2	41	80	59	3	33	39	95	56
	1904	3	34	4	3	27	-----	31	3	23	22	65	43
	1899	10	-----	-----	12	80	-----	55	8	55	66	171	105
Mattresses and spring beds.....	1909	3	14	4	-----	10	100	19	-----	8	24	41	17
	1904	3	28	5	-----	23	-----	25	-----	10	27	49	22
	1899	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Models and patterns, not including paper patterns.	1909	5	38	7	-----	31	44	10	-----	20	5	35	80
	1904	5	27	7	2	18	-----	24	1	7	5	22	17
	1899	7	23	7	1	15	-----	5	(*)	9	3	20	17
Patent medicines and compounds and druggists' preparations.....	1909	11	86	7	36	43	35	101	47	10	51	183	132
	1904	11	69	15	15	39	-----	60	9	12	51	129	78
	1899	16	73	8	24	41	-----	430	34	11	54	216	162
Printing and publishing.....	1909	45	937	39	268	630	1,078	1,198	255	386	440	1,552	1,112
	1904	40	746	29	196	521	-----	1,417	169	261	310	1,019	709
	1899	30	596	21	118	462	-----	807	91	224	320	918	598
Slaughtering and meat packing.....	1909	10	299	8	46	245	484	1,048	52	145	2,636	3,171	535
	1904	7	141	7	24	110	-----	345	17	55	1,144	1,310	166
	1899	8	-----	-----	9	87	-----	147	7	46	517	611	94
Soap.....	1909	6	228	3	86	139	232	1,077	101	51	771	1,306	535
	1904	5	136	2	39	95	-----	375	54	40	371	795	424
	1899	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Tobacco manufactures.....	1909	56	1,544	56	60	1,428	52	700	73	487	831	1,893	1,062
	1904	60	1,422	62	73	1,287	-----	1,012	55	425	576	1,455	879
	1899	70	1,212	78	36	1,098	-----	577	51	436	420	1,285	865
All other industries.....	1909	129	13,117	81	1,102	11,934	15,368	34,650	1,737	7,503	13,714	34,006	20,292
	1904	108	9,930	85	1,201	8,644	-----	16,802	1,444	4,701	8,899	20,287	11,388
	1899	125	-----	-----	717	6,696	-----	13,717	790	3,384	7,025	16,275	9,250
TOLEDO—All industries.....													
	1909	760	22,900	665	3,357	18,878	43,946	\$58,319	\$3,632	\$9,911	\$34,084	\$61,230	\$27,146
	1904	597	18,504	521	2,286	15,697	-----	38,445	2,285	8,099	25,466	44,501	19,035
	1899	445	-----	-----	1,162	12,747	-----	23,788	1,143	5,576	19,397	31,976	12,579
Boxes, fancy and paper.....	1909	5	111	2	12	97	78	86	12	26	58	103	45
	1904	4	73	2	12	59	-----	70	8	14	43	76	33
	1899	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Brass and bronze products.....	1909	6	35	10	22	22	68	43	2	13	28	52	24
	1904	3	26	4	3	19	-----	12	2	11	29	42	13
	1899	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

1 Excluding statistics for one establishment, to avoid disclosure of individual operations.
 2 Figures can not be shown without disclosing individual operations.
 3 Less than \$500.
 4 Not reported separately.
 5 Figures do not agree with those published in 1904, because it was necessary to revise the totals in order to include data only for those establishments located within the corporate limits of the city.

TABLE I.—COMPARATIVE SUMMARY FOR 1909, 1904, AND 1899—Continued.

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES—Continued.

INDUSTRY.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
			Total.	Proprietors and firm members.	Salaried employes.	Wage earners (average number).							
Expressed in thousands.													
TOLEDO—Continued.													
Bread and other bakery products.....	1909	88	633	96	69	468	314	\$663	\$64	\$260	\$959	\$1,598	\$639
	1904	64	595	64	88	443	.....	673	51	205	724	1,268	544
	1899	46	356	48	30	278	.....	435	22	133	475	808	333
Brick and tile.....	1909	8	191	2	17	172	675	233	14	60	35	177	142
	1904	10	248	7	20	221	.....	370	17	117	48	259	211
	1899	11	312	16	8	288	.....	393	7	136	53	279	226
Carriages and wagons and materials.....	1909	16	602	11	77	514	1,283	2,370	105	257	609	1,317	708
	1904	21	924	20	79	825	.....	2,450	89	399	932	1,756	824
	1899	16	879	13	65	801	.....	2,288	70	281	817	1,379	562
Cars and general shop construction and repairs by steam-railroad companies.	1909	4	1,330	.....	132	1,198	935	534	115	634	674	1,427	753
	1904	5	941	.....	73	803	.....	281	62	465	332	1,367	535
	1899	8	646	.....	40	606	.....	333	31	343	479	866	337
Clothing, women's.....	1909	13	1,282	16	116	1,150	155	788	176	492	1,375	2,323	948
	1904	11	726	19	60	635	.....	323	77	251	804	1,448	644
	1899	4	645	8	14	623	.....	204	25	171	483	942	459
Confectionery.....	1909	12	197	14	37	146	105	119	32	51	235	411	176
	1904	10	185	11	33	141	.....	64	18	34	135	262	127
	1899	4	.....	.....	24	47	.....	48	11	13	110	186	76
Cooperage and wooden goods, not elsewhere specified.	1909	10	134	10	8	116	145	133	6	52	106	195	89
	1904	10	43	11	2	30	.....	23	2	15	53	83	30
	1899	10	.....	.....	.....	.....	.....	16	.....	12	26	50	24
Copper, tin, and sheet-iron products...	1909	37	675	37	91	547	265	3,557	85	232	649	1,303	654
	1904	20	249	27	42	180	.....	331	30	94	198	484	236
	1899	18	.....	38	578	.....	.....	570	42	201	871	1,291	420
Electrical machinery, apparatus, and supplies.	1909	7	483	1	66	416	248	722	55	168	230	932	643
	1904	4	112	1	13	98	.....	75	13	35	45	130	85
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Flour-mill and gristmill products.....	1909	7	257	3	50	204	3,510	2,485	84	140	4,931	5,662	731
	1904	8	238	3	40	165	.....	1,488	54	115	3,237	3,676	439
	1899	10	203	10	20	233	.....	1,268	40	123	4,034	4,459	425
Foundry and machine-shop products...	1909	75	3,768	50	527	3,101	6,931	8,956	621	1,905	3,161	7,024	3,863
	1904	50	3,253	35	323	2,895	.....	4,945	328	1,560	2,401	5,100	2,699
	1899	27	2,152	22	139	1,901	.....	1,945	118	970	1,130	2,716	1,586
Furniture and refrigerators.....	1909	23	674	18	76	580	834	1,069	86	303	545	1,128	583
	1904	12	485	14	38	433	.....	399	37	220	338	660	322
	1899	8	414	11	61	342	.....	360	37	148	129	418	239
Leather goods.....	1909	4	104	3	13	88	36	79	11	35	78	139	61
	1904	3	101	4	9	88	.....	105	10	38	113	209	96
	1899	4	.....	.....	13	88	.....	73	11	33	80	152	72
Liquors, malt.....	1909	4	365	.....	53	312	1,631	7,108	92	250	452	1,887	1,435
	1904	6	312	.....	50	262	.....	2,427	110	222	499	1,610	1,111
	1899	6	300	.....	47	253	.....	2,189	76	151	330	1,459	1,129
Lumber and timber products.....	1909	28	689	21	83	585	2,430	1,433	96	286	1,111	1,793	682
	1904	23	578	19	57	502	.....	911	54	260	1,260	1,784	524
	1899	18	.....	48	514	.....	.....	1,081	43	212	1,257	1,730	473
Marble and stone work.....	1909	6	89	5	22	62	142	188	22	43	108	217	109
	1904	7	99	9	13	77	.....	172	11	60	134	263	129
	1899	8	.....	7	66	.....	.....	103	6	45	50	135	85
Models and patterns, not including paper patterns.	1909	7	26	10	.....	16	29	15	.....	9	5	24	19
	1904	4	16	4	1	11	.....	10	1	6	5	17	12
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Paint and varnish.....	1909	5	61	4	23	34	150	271	22	20	153	252	94
	1904	5	65	3	30	32	.....	174	24	18	139	225	86
	1899	4	52	3	21	28	.....	216	18	13	120	196	76
Patent medicines and compounds and druggists' preparations.	1909	51	169	50	43	70	154	312	43	36	149	540	391
	1904	26	107	24	39	44	.....	175	21	15	74	343	269
	1899	17	61	6	13	42	.....	167	10	13	85	436	351
Petroleum, refining.....	1909	3	331	.....	61	270	540	2,636	103	157	1,845	2,431	583
	1904	3	199	.....	41	158	.....	1,317	63	104	1,556	2,006	450
	1899	3	123	.....	27	96	.....	887	33	55	1,048	1,393	345
Printing and publishing.....	1909	72	1,219	60	396	763	886	1,551	353	480	523	2,004	1,431
	1904	56	1,026	43	341	637	.....	916	292	300	414	1,451	1,037
	1899	42	711	39	112	560	.....	727	84	306	288	982	694
Slaughtering and meat packing.....	1909	11	40	10	3	27	60	68	2	19	294	376	82
	1904	3	45	4	3	33	.....	63	2	24	215	269	54
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

¹Excluding statistics for two establishments, to avoid disclosure of individual operations.
²Excluding statistics for one establishment, to avoid disclosure of individual operations.
³Figures can not be shown without disclosing individual operations.

TABLE I.—COMPARATIVE SUMMARY FOR 1909, 1904, AND 1899—Continued.

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES—Continued.

INDUSTRY AND CITY.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
			Total.	Proprietors and firm members.	Salaried employ-ees.	Wage earners (average number).							
Expressed in thousands.													
TOLEDO—Continued.													
Tobacco manufactures.....	1909	48	593	51	56	486	395	\$541	\$60	\$146	\$795	\$2,129	\$1,334
	1904	¹ 67	189	75	1	113	-----	97	1	58	86	247	161
	1899	² 50	184	52	5	127	-----	76	3	58	74	211	137
Wall plaster.....	1909	6	66	-----	21	45	380	114	18	25	130	221	91
	1904	5	47	1	14	32	-----	83	13	20	81	140	69
	³ 1899	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
All other industries.....	1909	204	8,776	181	1,302	7,293	21,487	22,245	1,353	3,742	14,782	25,565	10,733
	1904	157	7,622	112	852	6,658	-----	20,401	895	3,373	10,981	19,236	8,255
	1899	141	-----	-----	430	5,105	-----	10,409	456	2,159	7,458	11,883	4,480
YOUNGSTOWN—All industries.													
	1909	115	11,851	94	1,259	10,498	140,907	\$87,160	\$1,593	\$7,835	\$62,292	\$81,271	\$18,879
	1904	113	8,903	86	722	8,095	-----	40,956	870	5,460	35,183	46,853	11,670
	1899	103	-----	-----	414	8,679	-----	22,064	478	4,730	23,133	33,908	10,775
Bread and other bakery products.....	1909	22	100	27	8	65	23	90	3	38	133	249	116
	1904	11	64	15	1	48	-----	137	(⁶)	30	86	153	67
	1899	10	48	12	-----	36	-----	51	-----	17	39	82	43
Carriages and wagons and materials.....	1909	3	74	2	8	64	88	113	13	40	66	146	80
	1904	4	80	4	5	80	-----	122	10	34	71	160	89
	1899	5	-----	-----	13	82	-----	163	15	38	83	201	118
Foundry and machine-shop products.....	1909	15	1,453	4	296	1,153	2,674	5,822	338	800	2,702	4,865	2,163
	1904	¹ 13	1,041	4	128	909	-----	3,006	176	566	1,020	2,079	1,059
	1899	² 12	858	4	65	789	-----	1,460	74	431	866	1,800	934
Iron and steel, steel works and rolling mills.	1909	7	7,128	-----	478	6,650	75,530	50,516	670	5,204	39,909	50,175	10,206
	1904	7	4,980	-----	350	4,630	-----	23,571	429	3,350	23,000	29,738	6,738
	³ 1899	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Lumber and timber products.....	1909	8	232	7	26	199	615	731	32	135	654	953	299
	1904	10	239	11	20	208	-----	576	25	137	431	763	332
	1899	7	202	10	17	175	-----	304	15	85	338	615	177
Printing and publishing.....	1909	13	251	9	78	164	188	402	82	109	128	454	325
	1904	10	178	4	22	152	-----	260	23	121	69	284	215
	1899	⁴ 8	128	5	17	106	-----	178	17	67	49	193	144
Tobacco manufactures.....	1909	6	39	7	2	30	-----	18	1	12	10	38	23
	1904	11	42	13	-----	29	-----	12	-----	12	19	51	32
	1899	9	35	11	-----	24	-----	15	-----	13	12	39	27
All other industries.....	1909	41	2,574	38	863	2,173	61,789	29,468	454	1,497	18,630	24,391	5,761
	1904	47	2,270	35	196	2,030	-----	13,263	207	1,210	10,487	13,625	3,138
	1899	52	-----	-----	302	7,467	-----	19,893	357	4,079	21,746	31,078	6,332

CITIES OF 10,000 TO 50,000 INHABITANTS—ALL INDUSTRIES COMBINED.

Alliance.....	1909	44	3,026	35	467	2,524	3,453	\$7,212	\$447	\$1,462	\$2,853	\$6,135	\$3,282
	⁴ 1904	40	1,725	40	243	1,442	-----	5,082	177	837	1,901	3,547	1,646
	1899	39	-----	-----	134	1,486	-----	5,678	119	667	1,648	3,203	1,555
Ashtabula.....	1909	44	1,601	31	99	1,471	2,379	2,076	138	814	2,084	3,469	1,375
	1904	36	934	32	56	846	-----	1,283	57	456	996	1,895	899
	1899	29	-----	-----	46	373	-----	707	34	165	527	834	357
Bellaire.....	1909	36	2,846	44	205	2,597	17,790	6,427	225	1,412	7,159	10,092	2,993
	1904	37	2,340	22	135	2,183	-----	6,618	148	1,183	7,310	10,712	3,396
	1899	30	-----	-----	69	1,928	-----	3,517	108	827	5,987	8,838	2,851
Cambridge.....	1909	32	1,406	30	146	1,230	5,055	2,379	105	919	2,885	4,291	1,406
	1904	34	909	34	61	814	-----	1,147	50	497	1,520	2,441	921
	1899	28	-----	-----	48	768	-----	1,059	51	487	1,317	2,202	885
Chillicothe.....	1909	57	1,872	59	139	1,674	3,558	2,364	135	707	3,038	4,345	1,307
	1904	64	1,751	65	133	1,553	-----	1,694	114	570	1,928	3,147	1,219
	1899	46	-----	-----	73	1,112	-----	1,054	44	423	878	1,616	738
East Liverpool.....	1909	82	5,254	49	332	4,873	5,528	7,988	448	2,764	2,521	6,629	4,108
	1904	81	5,586	56	302	5,228	-----	6,972	363	2,703	2,107	6,437	4,330
	1899	75	-----	-----	283	4,171	-----	4,960	288	1,970	1,463	4,749	3,286
Elyria.....	1909	58	3,117	30	414	2,673	0,058	7,324	404	1,573	4,495	8,065	3,570
	1904	50	1,430	37	249	1,144	-----	3,071	231	537	1,595	2,933	1,338
	1899	32	-----	-----	62	638	-----	1,117	54	269	740	1,221	481
Findlay.....	1909	74	1,623	67	180	1,376	2,574	2,955	186	574	2,094	3,487	1,393
	1904	71	1,522	78	101	1,343	-----	2,659	105	625	1,579	2,925	1,346
	1899	80	-----	-----	104	1,107	-----	1,693	85	453	751	1,685	634

¹ Excluding statistics for two establishments, to avoid disclosure of individual operations.
² Excluding statistics for one establishment, to avoid disclosure of individual operations.
³ Not reported separately.
⁴ Figures do not agree with those published in 1904, because it was necessary to revise the totals in order to include data only for those establishments located within the corporate limits of the city.
⁵ Less than \$500.

MANUFACTURES—OHIO.

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TABLE I.—COMPARATIVE SUMMARY FOR 1909, 1904, AND 1899—Continued.
CITIES OF 10,000 TO 50,000 INHABITANTS—ALL INDUSTRIES COMBINED—Continued.

CITY.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
			Total.	Proprietors and firm members.	Salaried employ-ees.	Wage earners (average number).							
Hamilton.....	1909	125	7,770	81	794	6,895	22,563	\$24,629	\$1,318	\$3,798	\$9,640	\$18,184	\$3,544
	¹ 1904	113	6,678	97	475	6,107	.....	18,874	774	3,321	6,384	13,811	7,427
	1899	97	.....	.....	273	5,147	.....	10,243	300	2,310	6,003	10,655	5,652
Ironton.....	1909	63	2,119	51	148	1,920	15,548	4,993	198	888	4,994	7,118	2,124
	1904	57	1,971	46	125	1,800	.....	3,356	144	824	3,423	4,755	1,332
	1899	53	.....	.....	93	1,577	.....	3,212	106	699	3,145	5,411	2,266
Lancaster.....	1909	42	1,657	48	77	1,532	2,453	1,459	75	677	3,051	4,074	1,023
	¹ 1904	42	1,853	41	117	1,695	.....	1,665	96	759	2,501	3,848	1,347
	1899	36	.....	.....	64	1,069	.....	1,365	57	544	1,059	1,905	840
Lima.....	1909	85	3,899	79	213	3,607	3,264	5,488	363	2,024	3,869	7,754	3,885
	¹ 1904	77	3,005	73	190	2,733	.....	3,894	106	1,322	2,255	4,823	2,573
	1899	76	.....	.....	183	1,980	.....	5,361	158	942	3,936	6,222	2,286
Lorain.....	1909	57	7,347	36	614	6,697	208,992	34,387	762	4,788	24,222	38,987	14,765
	1904	43	3,416	26	288	3,102	.....	10,509	255	2,832	9,708	14,491	4,783
	1899	26	.....	.....	134	2,233	.....	12,684	137	1,102	6,485	9,481	2,996
Mansfield.....	1909	121	3,901	120	577	3,204	5,077	8,539	585	1,472	4,356	8,173	3,817
	1904	109	3,589	112	466	3,021	.....	8,295	465	1,300	3,523	7,354	3,831
	1899	95	.....	.....	316	2,622	.....	5,457	296	973	2,705	6,070	3,371
Marletta.....	1909	66	1,549	59	202	1,288	2,742	3,275	190	594	1,787	3,215	1,428
	1904	73	1,515	56	145	1,314	.....	2,557	139	610	1,306	2,599	1,233
	1899	77	.....	.....	125	1,511	.....	1,935	112	590	1,150	2,398	1,248
Marion.....	1909	55	3,028	40	309	2,619	3,686	7,864	416	1,405	2,577	5,667	3,090
	1904	47	1,965	32	212	1,721	.....	3,395	230	865	1,352	3,228	1,876
	1899	34	.....	.....	121	1,171	.....	2,917	114	556	966	2,426	1,460
Massillon.....	1909	56	2,193	37	222	1,984	4,730	7,788	282	1,127	2,290	4,788	2,498
	1904	52	2,177	46	136	1,995	.....	5,745	178	1,158	1,582	3,707	2,125
	1899	49	.....	.....	87	1,474	.....	3,975	81	745	1,263	2,749	1,486
Middletown.....	1909	41	2,992	22	394	2,576	9,304	10,564	473	1,389	7,950	16,517	8,567
	1904	47	2,044	44	188	1,814	.....	10,418	198	861	3,692	8,538	4,846
	1899	41	.....	.....	255	1,578	.....	3,867	309	621	2,473	5,800	3,327
Newark.....	1909	72	4,282	63	306	3,913	8,630	9,036	315	1,958	3,982	7,851	3,899
	1904	78	3,936	83	226	3,627	.....	3,834	216	2,130	2,433	5,613	3,180
	1899	69	.....	.....	147	2,075	.....	1,681	122	810	1,180	2,879	1,699
Norwood.....	1909	49	4,445	31	507	3,907	6,381	13,368	632	2,081	4,021	9,684	5,663
	² 1904	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	² 1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Piqua.....	1909	82	3,073	74	316	2,683	5,062	5,444	402	1,292	3,852	6,931	3,079
	1904	76	2,282	62	176	2,044	.....	3,196	210	947	1,908	4,030	2,128
	1899	68	.....	.....	193	1,955	.....	3,516	201	914	3,610	5,552	1,942
Portsmouth.....	1909	75	4,319	54	537	3,728	4,028	6,385	680	1,459	3,894	7,277	3,383
	¹ 1904	81	4,500	68	360	4,072	.....	4,670	318	1,479	3,520	6,645	3,125
	1899	100	.....	.....	365	4,153	.....	3,826	302	1,341	3,404	6,658	3,254
Sandusky.....	1909	91	2,518	59	341	2,118	4,856	6,495	353	1,006	2,885	5,947	3,112
	1904	93	2,066	78	265	2,323	.....	6,727	258	1,028	2,136	4,379	2,743
	1899	81	.....	.....	142	1,453	.....	4,453	135	571	1,207	2,834	1,627
Springfield.....	1909	195	8,034	161	1,068	7,405	10,179	22,485	1,262	3,985	8,919	19,248	10,327
	¹ 1904	187	7,215	103	854	6,258	.....	19,739	937	3,253	5,762	13,382	7,620
	1899	104	.....	.....	1,282	6,299	.....	13,844	1,102	3,015	5,289	12,116	6,827
Steuensville.....	1909	55	4,638	55	316	4,267	37,748	18,424	403	3,203	14,443	21,187	6,744
	1904	72	4,517	78	255	4,184	.....	12,627	321	2,328	8,243	12,370	4,127
	1899	54	.....	.....	88	1,773	.....	2,303	74	734	2,406	4,547	2,141
Tiffin.....	1909	75	1,970	78	260	1,632	3,257	3,727	224	828	1,252	3,254	2,002
	1904	87	1,874	94	135	1,645	.....	2,714	125	664	1,000	2,435	1,435
	1899	75	.....	.....	100	1,288	.....	2,252	75	624	808	1,902	1,094
Warren.....	1909	68	2,174	41	385	1,798	5,530	4,511	421	911	3,064	5,988	2,924
	1904	53	1,763	44	214	1,505	.....	2,730	240	738	2,048	4,414	2,366
	1899	44	.....	.....	126	1,832	.....	2,882	157	775	2,543	4,585	2,042
Zanesville.....	1909	109	3,536	95	341	3,150	8,783	6,025	351	1,793	5,504	9,145	3,641
	¹ 1904	99	3,468	91	279	3,093	.....	4,995	268	1,590	3,291	6,347	3,056
	1899	115	.....	.....	323	3,405	.....	4,120	246	1,255	3,086	5,708	2,622

¹ Figures do not agree with those published in 1904, because it was necessary to revise the totals in order to include data only for those establishments located within the corporate limits of the city.
² Figures not available.

TABLE II.—DETAIL STATEMENT FOR

INDUSTRY.	Number of establishments	PERSONS ENGAGED IN INDUSTRY.										WAGE EARNERS—NUMBER DEC. 15, OR NEAREST REPRESENTATIVE DAY.					Primary horse-power.
		Total.	Proprietors and firm members.	Salaried officers, supts. and managers.	Clerks.		Wage earners.			Total.	16 and over.		Under 16.				
					Male.	Female.	Average number.	Number.			Male.	Female.	Male.	Female.			
								Maximum month.	Minimum month.								
1 All Industries.....	15,138	523,004	14,719	16,494	34,101	10,756	446,934	De 480,405	Ja 414,278	(1)	(1)	(1)	(1)	(1)	1,583,155		
2 Agricultural implements.....	55	6,972	23	200	630	122	5,997	Ap 6,721	Jy 5,547	6,231	6,178	43	9	1	9,807		
3 Artificial flowers and feathers and plumes.....	3	21	3	200	630	122	5,997	Jy 19	Jo 12	18	3	15					
4 Artificial stone.....	299	1,315	391	66	39	17	802	Au 1,041	Ja 375	13,458	956	956			1,325		
5 Automobiles, including bodies and parts.....	75	13,458	42	267	802	217	12,130	De 15,700	Ja 10,034	16,214	15,993	180	37	4	14,433		
6 Babbitt metal and solder.....	6	74	5	7	10	5	47	Se 52	Fe 41	46	46				251		
7 Bags, paper.....	8	632		25	37	13	557	De 579	Je 527	580	282	280	1	17	508		
8 Baking powders and yeast.....	10	76	11	4	14	5	42	Mh 47	Jy 37	46	17	27			61		
9 Baskets, and rattan and willow ware.....	30	350	30	10	3	4	297	Je 361	De 238	359	17	27			81		
10 Belting and hose, leather.....	8	164	4	13	25	10	107	No 120	My 98	120	120	72	4	3	794		
11 Belting and hose, woven and rubber.....	5	808	3	25	77	20	683	No 845	Jy 540	835	781	45	9		405		
12 Bicycles, motorcycles, and parts.....	6	1,037	2	12	58	23	942	De 1,089	Jy 711	1,181	1,181				1,522		
13 Blacking and cleansing and polishing preparations.....	49	238	53	26	34	22	103	My 126	Oc 94	119	82	37			1,895		
14 Boots and shoes, including out stock and findings.....	72	17,607	40	393	751	397	16,026	De 17,033	Ap 13,880	17,122	9,510	7,023	254	335	8,925		
15 Boxes, cigar.....	31	600	38	16	10	5	531	No 585	Ap 491	574	220	323	11	20	1,029		
16 Boxes, fancy and paper.....	46	2,777	32	94	77	44	2,530	Oc 2,687	Ja 2,410	2,602	950	1,518	4	190	1,825		
17 Brass and bronze products.....	82	2,650	72	112	152	82	2,232	Oc 2,362	Je 2,055	2,612	2,548	56	8		4,214		
18 Bread and other bakery products.....	1,467	8,758	1,600	162	644	380	5,972	De 6,144	Fe 5,809	6,229	5,025	1,149	32	23	5,398		
19 Brick and tile.....	517	8,575	569	363	132	45	7,466	Je 9,401	Ja 4,878	9,093	9,029	2	62		37,742		
20 Brooms.....	82	536	95	18	22	8	393	De 418	Au 357	428	368	56	4		323		
21 Brushes.....	22	549	17	27	53	27	425	My 481	Au 365	527	322	168	15	22	675		
22 Butter, cheese, and condensed milk.....	325	2,494	1,216	78	91	42	1,007	Au 1,232	Fe 876	1,144	1,026	102	3	8	3,386		
23 Butter, reworking.....	5	73		8	9	4	47	Oc 60	Je 42	47	44				423		
24 Buttons.....	5	104	4	2	4	3	151	My 186	Au 197	152	113	14	6	14	73		
25 Canning and preserving.....	107	2,379	94	116	129	31	2,009	Se 5,868	Ap 581	6,292	2,869	3,321	56	46	4,244		
26 Carpets, rag.....	29	208	26	10	1	7	164	Jy 184	Fe 124	163	96	65			447		
27 Carriages and wagons and materials.....	407	10,350	414	437	447	237	8,815	My 9,596	Au 7,044	9,051	8,757	241	52	1	14,771		
28 Cars and general shop construction and repairs by steam-railroad companies.....	71	22,102		332	1,025	17	20,728	No 22,043	Ap 10,666	21,843	21,797	47	4		19,422		
29 Cars and general shop construction and repairs by street-railroad companies.....	49	1,392		47	23	4	1,318	Au 1,354	Fe 1,268	1,347	1,326	20	1		3,635		
30 Cars, steam-railroad, not including operations of railroad companies.....	6	2,477		83	93	14	2,282	Fe 3,171	Ap 1,571	2,650	2,640	10			4,410		
31 Cars, street-railroad, not including operations of railroad companies.....	4	823		33	45	11	734	De 1,131	Jy 575	1,131	1,129	2			2,875		
32 Cement.....	9	978		23	56	12	887	Ap 1,119	Ja 600	1,001	999	2			12,685		
33 Chemicals.....	33	1,340	17	60	107	30	1,132	No 1,242	Je 1,051	1,282	1,241	41			11,715		
34 Clocks and watches, including cases and materials.....	9	1,534	2	21	37	18	1,456	Fe 1,581	Jy 791	1,477	1,018	41	17	31	877		
35 Cloth, sponging and refinishing.....	6	62	10	1	1	2	48	Je 52	Se 44	50	50				24		
36 Clothing, men's, including shirts.....	342	11,813	405	200	1,009	249	9,950	De 10,421	Ja 9,167	10,768	3,234	7,160	33	341	1,794		
37 Clothing, women's.....	153	10,191	174	197	600	287	8,843	Oc 9,857	My 7,883	9,746	3,414	6,201	13	118	1,654		
38 Coffee and spice, roasting and grinding.....	30	1,586	25	78	614	107	762	No 795	Au 725	784	390	393	1		2,186		
39 Coffins, burial cases, and undertakers' goods.....	24	1,475	11	51	138	30	1,245	No 1,279	Jy 1,175	1,259	1,044	207	8		2,289		
40 Coke.....	4	259		7	4	2	246	Ap 300	Au 219	240	240				1,260		
41 Confectionery.....	114	3,012	103	98	220	95	2,493	No 3,213	Jy 2,030	2,870	873	1,708	80	209	2,005		
42 Cooperage and wooden goods, not elsewhere specified.....	113	1,911	118	76	32	22	1,663	De 1,801	Au 1,568	1,785	1,710	11	14		3,453		
43 Copper, tin, and sheet-iron products.....	221	7,685	195	258	441	193	6,598	Se 7,189	Ja 5,762	7,179	5,647	1,172	199	161	6,352		
44 Cordage and twine and jute and linen goods.....	8	848	3	17	25	12	791	Ap 932	Au 498	912	678	227	5	2	3,225		
45 Corsets.....	4	47	3	3	1	2	38	Mh 52	Au 24	41	1	40			12		
46 Cotton goods, including cotton small wares.....	4	195	1	10	4	3	177	Oc 183	Se 172	181	42	135			446		
47 Cutlery and tools, not elsewhere specified.....	70	3,335	49	117	251	98	2,820	De 3,173	Ja 2,548	3,173	2,872	291	7	3	6,567		
48 Dairymen's, poulterers', and apiarists' supplies.....	18	589	19	25	32	34	479	De 520	Oc 433	520	458	47	10	5	916		
49 Electrical machinery, apparatus, and supplies.....	115	9,605	49	317	745	421	8,073	De 9,456	Ja 6,967	9,471	6,406	2,988	4	78	11,869		
50 Electroplating.....	29	254	30	12	2	5	205	No 218	Ja 191	222	218	3	1		628		
51 Enameling and japanning.....	5	163	3	5	6	4	145	Mh 157	Ja 127	154	95	18	17	24	88		
52 Explosives.....	11	424		24	34	8	358	Au 385	Ap 323	378	355	23			2,692		
53 Fancy articles, not elsewhere specified.....	15	251	15	15	31	5	185	Oc 226	Ja 125	211	137	65	3	6	195		
54 Fertilizers.....	27	1,064	13	51	138	21	841	Se 1,522	Fe 676	739	738	1			3,059		
55 Files.....	7	154	6	1	3	5	139	Oc 147	Ja 117	157	154	3			499		
56 Firearms and ammunition.....	5	910		15	70	12	813	Au 848	De 750	762	497	265			1,129		
57 Flags, banners, regalia, society badges, and emblems.....	13	1,572	4	44	186	76	1,262	Je 1,445	Au 1,162	1,197	393	777	8	19	568		

¹ No figures given for reasons explained in the Introduction.

MANUFACTURES—OHIO.

985

THE STATE, BY INDUSTRIES: 1909.

	Capital.	EXPENSES.										Value of products.	Value added by manuf-acture.
		Total.	Services.			Materials.		Miscellaneous.					
			Officials.	Clerks.	Wage earners.	Fuel and rent of power.	Other.	Rent of factory.	Taxes, including internal revenue.	Contract work.	Other.		
1	\$1,300,732,732	\$1,282,845,511	\$33,755,010	\$38,392,489	\$245,449,904	\$50,117,773	\$774,084,174	\$4,913,712	\$24,499,586	\$6,717,474	\$104,915,368	\$1,437,935,817	\$613,733,870
2	25,637,082	12,339,545	472,305	675,635	3,155,115	161,928	6,156,591	4,445	108,334	8,521	1,596,671	14,440,461	8,121,942
3	9,205	12,968	.....	312	6,659	150	3,314	1,320	82	.....	1,121	17,730	14,286
4	1,274,108	1,075,096	53,839	20,167	403,850	13,337	485,228	11,419	6,871	12,372	68,013	1,377,790	870,225
5	30,891,060	32,192,564	634,690	795,222	7,746,477	248,709	18,273,289	38,778	145,525	220,967	4,088,937	38,838,754	20,316,756
6	463,130	1,000,104	22,948	14,172	25,629	4,151	806,857	1,637	5,713	.....	23,997	1,026,917	125,909
7	1,446,847	2,176,662	60,550	34,498	239,763	13,831	1,624,666	15,981	7,740	3,431	167,202	2,393,385	754,888
8	115,998	251,531	8,280	15,020	15,440	1,885	159,514	4,076	864	.....	46,452	111,273	111,273
9	177,847	230,007	9,579	2,692	107,784	3,079	86,040	2,567	1,329	515	16,422	271,126	182,007
10	650,921	1,035,378	49,500	45,843	79,680	5,247	789,826	6,794	4,852	.....	53,636	1,079,943	284,870
11	3,230,099	2,953,710	56,686	90,351	361,862	37,767	2,077,972	2,686	7,973	.....	318,413	3,443,460	1,327,721
12	2,245,317	2,075,493	40,700	53,528	686,355	35,007	1,031,170	1,000	13,410	.....	214,323	2,308,316	1,242,139
13	381,021	523,986	34,111	34,318	50,064	4,120	292,516	10,261	1,443	.....	97,144	672,117	375,472
14	16,755,293	29,510,430	746,715	1,377,843	6,645,790	126,956	18,745,051	162,529	93,839	128	1,617,579	31,559,957	12,678,950
15	463,577	595,131	21,989	9,514	166,952	8,011	352,136	9,217	3,793	42	23,477	711,370	351,223
16	2,840,735	3,345,199	174,239	83,465	830,401	33,880	1,897,521	49,459	14,954	.....	261,280	3,635,190	1,703,789
17	6,471,775	5,786,809	234,007	183,728	1,372,150	92,505	3,440,876	27,995	32,937	11,906	390,705	6,572,022	3,038,041
18	11,780,708	19,856,771	366,828	732,564	3,370,889	403,802	13,262,431	304,213	94,665	89	1,321,290	23,007,131	9,340,898
19	17,314,892	7,418,610	453,138	136,235	3,527,475	1,797,155	407,188	7,648	78,589	93,030	918,152	9,357,730	7,153,387
20	425,275	944,801	15,783	15,736	172,019	5,343	687,136	3,913	2,458	3,347	39,066	1,079,382	386,903
21	768,332	1,064,209	58,750	62,673	168,076	5,968	617,003	6,975	22,253	73,490	57,031	1,219,461	594,500
22	2,788,717	8,938,606	94,608	78,647	556,764	90,637	7,594,899	12,860	18,851	5,434	486,006	9,689,670	2,004,234
23	571,051	1,330,874	13,700	6,698	30,692	8,421	1,219,201	6,880	13,934	.....	31,348	1,356,245	128,623
24	121,056	96,217	1,780	4,434	54,984	959	28,979	2,840	126	.....	2,115	113,915	83,977
25	3,493,904	4,226,322	124,787	127,240	532,219	39,086	3,063,093	18,912	18,354	10,695	291,936	4,659,674	1,557,495
26	95,823	111,268	11,310	2,980	56,777	2,755	24,242	3,984	1,183	25	8,612	153,671	126,674
27	20,397,675	19,320,042	726,241	555,688	4,647,200	211,381	11,202,620	125,421	119,657	22,129	1,709,705	21,949,459	10,535,458
28	10,653,932	28,703,331	404,428	894,547	12,726,032	473,816	13,791,741	.....	78,108	6,385	328,274	28,690,287	14,424,730
29	2,054,130	1,691,903	47,275	17,880	722,389	23,276	777,775	.....	18,285	2,200	82,823	1,690,903	889,852
30	11,036,610	6,492,724	410,325	134,937	1,303,953	53,281	4,141,234	2,443	37,917	20,272	388,362	6,451,155	2,256,640
31	2,842,157	1,849,075	74,777	49,593	470,572	27,540	1,066,670	1,200	11,430	.....	147,284	1,955,118	860,899
32	4,732,463	1,573,257	69,854	70,313	543,596	325,614	312,864	.....	22,981	14,162	213,873	1,465,413	826,935
33	8,993,780	6,268,370	194,180	129,743	748,913	566,999	4,181,297	11,687	43,324	.....	392,222	7,742,045	2,993,749
34	4,231,693	1,677,188	51,804	38,723	784,220	17,188	508,430	7,325	5,351	164,021	110,126	1,980,957	1,455,399
35	23,982	44,722	2,000	1,240	28,727	2,517	580	4,873	45	80	4,660	66,214	63,117
36	14,432,475	22,432,986	455,255	1,236,963	4,049,927	90,084	12,829,996	321,750	42,823	1,898,437	1,508,751	24,869,437	11,949,357
37	8,150,889	18,014,201	575,278	1,077,461	4,271,984	70,793	10,213,790	197,540	25,117	.....	1,296,788	19,493,060	9,202,477
38	5,400,252	10,363,145	175,243	636,810	351,936	40,707	8,236,632	40,739	28,658	3,348	849,072	11,224,437	2,947,098
39	3,724,239	2,589,691	105,042	161,039	525,229	32,550	1,291,909	7,265	27,926	.....	438,731	3,061,150	1,736,691
40	1,238,106	808,352	13,840	4,788	119,852	616,101	23,509	450	2,327	.....	27,485	850,615	211,005
41	3,416,317	6,092,637	170,745	272,702	839,703	50,028	4,038,890	95,888	18,018	15,853	590,810	7,806,674	3,217,656
42	2,910,894	3,368,074	118,122	42,635	802,653	22,424	2,193,802	18,147	19,181	480	150,625	3,515,516	1,299,290
43	21,685,043	17,059,530	505,968	455,026	3,163,188	225,815	11,399,152	64,151	61,455	24,460	1,163,325	19,086,462	7,464,495
44	2,743,489	2,561,362	48,265	32,725	312,704	26,774	1,957,255	2,100	18,499	.....	163,040	2,727,854	743,825
45	47,164	50,117	2,432	2,484	10,438	529	28,156	1,904	71	.....	4,103	67,226	38,541
46	300,858	337,519	19,850	4,256	52,411	4,621	229,011	4,662	3,137	.....	19,571	399,175	161,543
47	7,768,232	4,385,900	220,578	299,991	1,518,312	99,846	1,550,390	11,475	37,388	5,040	642,880	5,035,889	3,385,653
48	1,041,471	982,045	32,509	39,719	261,558	9,433	517,827	3,062	5,371	.....	112,566	1,148,746	621,486
49	23,706,297	15,497,820	662,674	866,607	3,846,906	317,650	9,908,228	73,975	153,008	18,892	2,649,880	18,776,769	11,650,891
50	128,121	215,249	11,176	3,740	127,305	10,532	43,061	10,088	911	.....	8,436	259,374	205,781
51	132,060	181,014	7,160	5,624	62,608	11,802	83,098	1,560	988	.....	2,322	5,852	116,578
52	2,247,776	1,535,825	66,668	35,686	203,732	40,997	1,062,874	460	14,799	.....	160,659	1,718,871	615,000
53	752,760	337,650	19,160	83,353	2,670	115,551	8,977	1,019	1,239	.....	73,645	412,944	294,723
54	4,950,438	3,533,213	99,669	137,822	387,948	66,752	2,468,003	2,264	22,741	1,229	416,755	4,434,541	1,899,756
55	112,961	141,289	1,200	5,521	75,300	6,794	43,685	3,300	400	.....	5,089	151,522	101,043
56	2,225,245	2,013,684	57,010	100,000	318,118	24,403	1,266,507	1,000	7,457	.....	232,591	2,214,998	924,088
57	2,351,946	2,721,088	106,863	236,169	522,850	10,409	1,498,679	13,103	16,064	.....	315,851	3,026,875	1,516,787

* Same number reported for one or more other months.

TABLE II.—DETAIL STATEMENT FOR THE

INDUSTRY.	Number of establishments	PERSONS ENGAGED IN INDUSTRY.										WAGE EARNERS—NUMBER DEC. 15, OR NEAREST REPRESENTATIVE DAY.					Primary horse-power.
		Total.	Proprietors and firm members.	Salaried officers, supts. and managers.	Clerks.		Wage earners.				Total.	16 and over.		Under 16.			
					Male.	Female.	Average number.	Number.		Male.		Female.	Male.	Female.			
								Maximum month.	Minimum month.								
1 Flour-mill and gristmill products.....	673	4,164	911	257	287	124	2,555	Oc	2,783	Je	2,425	72,773	2,661	112	304	30	52,250
2 Foundry and machine-shop products.....	1,218	74,887	683	2,720	5,331	1,336	64,817	De	74,039	Ja	57,555	5,123	73,839	950	164	1	112,538
3 Fur goods.....	18	200	17	8	3	5	167	No	229	Ap	105	2,221	56	304	2	12	97
4 Furnishing goods, men's.....	63	2,934	59	86	146	75	2,568	De	2,852	Ja	2,317	2,881	304	2,372	2	143	12
5 Furniture and refrigerators.....	228	9,449	170	366	523	153	8,232	De	8,856	Jy	7,557	8,925	8,030	210	58	27	15,961
6 Gas and electric fixtures and lamps and reflectors.....	56	1,788	40	72	195	44	1,437	No	1,699	Ja	1,198	1,642	1,084	527	24	7	2,856
7 Gas, illuminating and heating.....	38	862	2	62	90	33	666	Mh	866	Jy	483	858	858	.....	.....	.....	2,165
8 Glass.....	45	10,030	8	184	178	101	10,159	De	11,814	Jy	5,883	12,540	10,983	1,023	483	51	16,198
9 Gloves and mittens, leather.....	6	106	6	4	2	.....	94	De	97	Fe	90	96	24	72	.....	.....	37
10 Grindstones.....	9	1,355	3	31	37	7	1,277	Jy	1,499	Ja	731	1,246	1,246	.....	.....	.....	5,228
11 Hand stamps and stencils and brands.....	31	177	34	8	10	10	115	Fe ¹	118	Ja	109	117	107	6	4	.....	105
12 Hats and caps, other than felt, straw, and wool.....	25	511	38	17	34	16	400	Fe ¹	416	Ja	396	420	183	218	1	18	83
13 Hats, fur-felt.....	3	10	1	.....	.....	.....	9	Je ¹	10	Ja ¹	7	10	7	3	.....	.....	9
14 Hosiery and knit goods.....	39	3,412	31	84	100	48	3,149	Au	3,427	Ja	2,682	3,371	557	2,578	32	204	1,613
15 Ice, manufactured.....	97	1,176	43	139	69	33	892	Jy	1,303	Ja	525	810	802	8	.....	.....	19,058
16 Ink, printing.....	8	277	.....	19	65	10	183	No	190	Fe	178	190	188	.....	.....	.....	1,437
17 Iron and steel, blast furnaces.....	40	8,278	7	202	717	57	7,295	De	9,193	Fe	6,214	9,187	9,184	3	2	.....	215,739
18 Iron and steel, steel works and rolling mills.....	75	41,912	3	792	2,255	270	38,580	De	45,151	Fe	33,845	45,151	44,798	350	3	.....	515,813
19 Jewelry.....	35	481	43	22	34	26	356	De	384	Jy	339	383	320	43	11	.....	116
20 Kaolin and ground earths.....	4	75	.....	8	1	2	64	No	68	Jy	57	70	70	.....	.....	.....	1,340
21 Leather goods.....	86	2,309	90	107	162	60	1,890	De	1,940	Se	1,822	1,997	1,570	407	15	5	1,399
22 Leather, tanned, curried, and finished.....	36	2,028	24	63	42	15	1,884	De	2,175	Je	1,739	2,196	2,185	11	.....	.....	4,244
23 Lime.....	39	1,403	34	44	32	20	1,273	Se	1,522	Fe	903	1,345	1,843	.....	.....	.....	3,872
24 Liquors, distilled.....	17	434	12	17	27	4	374	Oc	399	Je	341	432	420	12	.....	.....	2,422
25 Liquors, malt.....	105	5,275	35	333	521	30	4,356	Jy	4,782	Je	4,061	4,259	4,250	7	2	.....	31,690
26 Liquors, vinous.....	29	254	22	28	46	9	149	Au	187	Au	135	160	145	14	1	.....	496
27 Lumber and timber products.....	1,390	16,445	1,500	679	527	223	13,456	Oc	14,199	Ja	12,183	15,644	15,452	165	27	.....	69,255
28 Marble and stone work.....	198	2,520	229	109	138	32	2,012	No	2,211	Fe	1,524	2,240	2,223	2	15	.....	7,070
29 Mattresses and spring beds.....	38	1,145	34	30	81	39	961	No	998	Jy	928	985	671	303	8	3	2,069
30 Millinery and lace goods.....	31	1,905	30	47	111	60	1,357	Fe	1,745	Je	866	1,358	306	1,009	12	31	603
31 Mirrors.....	8	114	10	8	1	1	94	Oc	107	Je	86	103	107	1	.....	.....	198
32 Models and patterns, not including paper patterns.....	74	564	95	16	3	9	441	No	470	Ja	410	477	457	4	16	.....	673
33 Musical instruments and materials, not specified.....	8	63	8	1	3	4	47	My ¹	50	Ja ¹	44	46	46	.....	.....	.....	49
34 Musical instruments, pianos and organs and materials.....	30	1,987	16	55	53	22	1,841	Oc	1,953	Jy	1,716	1,929	1,846	81	2	.....	2,254
35 Oil, linseed.....	4	253	.....	11	29	5	213	Mh	308	Se	157	188	185	3	.....	.....	1,347
36 Optical goods.....	17	124	7	14	22	14	67	Se ¹	74	Ap ¹	62	74	64	10	.....	.....	43
37 Paint and varnish.....	87	2,587	39	214	616	183	1,535	My	1,662	De	1,431	1,517	1,342	174	1	.....	5,672
38 Paper and wood pulp.....	47	4,972	3	196	108	62	4,673	My	4,811	My	4,528	4,796	4,055	737	3	1	51,402
39 Paper goods, not elsewhere specified.....	25	2,264	19	75	84	46	2,040	Ap	2,145	Se	1,956	2,082	995	1,072	5	10	1,909
40 Patent medicines and compounds and druggists' preparations.....	261	2,068	236	159	527	241	905	Mh	962	Au	850	941	507	425	6	3	1,568
41 Pens, fountain, stylographic, and gold.....	9	190	5	13	31	41	100	No	113	Ja	83	107	88	17	2	.....	56
42 Petroleum, refining.....	10	2,039	.....	42	293	45	1,659	No	1,943	My	1,500	1,890	1,866	18	6	.....	4,324
43 Photographic apparatus and materials.....	3	42	.....	12	5	2	23	Fe ¹	24	Ja ¹	22	23	20	3	.....	.....	29
44 Photo-engraving.....	20	370	12	34	27	20	277	Je	284	Je	272	281	271	8	2	.....	215
45 Pottery, terra-cotta, and fire-clay products.....	186	17,751	60	409	498	196	16,519	Oc	17,044	Ja	15,197	17,323	13,847	3,296	110	70	26,778
46 Printing and publishing.....	1,655	22,754	1,480	1,270	2,884	1,358	15,756	De	16,428	Jy	15,219	16,555	12,203	4,115	200	37	18,417
47 Pumps, not including steam pumps.....	20	1,083	28	24	120	14	897	De	947	Se	832	900	900	.....	.....	.....	1,322
48 Rubber goods, not elsewhere specified.....	37	12,546	15	199	1,530	420	10,882	De	11,119	Ja	9,292	11,610	9,845	1,662	39	64	25,885
49 Safes and vaults.....	10	2,437	1	55	288	79	2,014	De	2,145	Fe	1,943	2,145	2,124	21	.....	.....	3,177
50 Salt.....	8	722	.....	23	36	15	648	Ja ¹	675	Au	609	677	596	80	1	.....	4,034
51 Saws.....	7	184	5	12	16	5	140	Mh	161	Jy	132	148	148	.....	.....	.....	443
52 Screws, machine.....	6	363	.....	15	16	8	324	De	409	Ja	265	409	402	7	.....	.....	615
53 Sewing machines, cases, and attachments.....	4	4,050	1	25	154	39	3,831	De	4,099	Jy	3,639	4,105	3,996	54	55	.....	2,973
54 Shipbuilding, including boat building.....	39	3,408	43	51	92	22	3,200	Mh	4,231	Se	1,945	3,485	3,485	.....	.....	.....	8,125
55 Shoddy.....	4	469	1	12	16	2	438	Mh ¹	442	Au	432	441	302	139	.....	.....	1,100
56 Show cases.....	14	402	6	25	14	8	349	De	385	Fe	318	385	369	12	4	.....	569
57 Signs and advertising novelties.....	28	1,290	13	57	47	77	1,096	Se	1,143	Ja	1,066	1,090	622	464	2	2	1,125
58 Slaughtering and meat packing.....	158	3,864	154	158	404	62	3,086	De	3,219	Ap	2,993	3,203	3,133	70	.....	.....	9,873
59 Smelting and refining, not from the ore.....	6	73	6	5	2	3	57	Ja	73	Au	46	66	66	.....	.....	.....	280
60 Soap.....	44	2,280	25	87	323	71	1,774	De	1,953	My	1,628	1,962	1,451	476	16	19	3,573
61 Steam packing.....	4	40	1	3	4	.....	32	De	38	My	25	42	42	.....	.....	.....	132
62 Stereotyping and electrotyping.....	14	255	9	12	16	11	207	Oc	225	Ja	190	223	219	1	3	.....	323
63 Stoves and furnaces, including gas and oil stoves.....	102	8,352	38	259	591	190	7,274	Oc	7,822	Ja	6,621	7,686	7,648	23	15	.....	9,478
64 Sulphuric, nitric, and mixed acids.....	4	148	.....	8	10	1	129	Se	162	Ja	101	121	121	.....	.....	.....	213
65 Surgical appliances and artificial limbs.....	23	186	23	7	32	12	112	De	117	Mh ¹	110	117	71	39	2	5	58
66 Tin plate and terneplate.....	4	742	.....	10	48	8	676	Je	899	Au	438	896	707	129	.....	.....	1,849

¹ Same number reported for one or more other months.

MANUFACTURES—OHIO.

987

STATE, BY INDUSTRIES: 1909—Continued.

Capital.	EXPENSES.										Value of products.	Value added by manufacture.
	Total.	Services.			Materials.		Miscellaneous.					
		Officials.	Clerks.	Wage earners.	Fuel and rent of power.	Other.	Rent of factory.	Taxes, including internal revenue.	Contract work.	Other.		
1 \$19,962,573	\$44,617,047	\$377,050	\$305,101	\$1,415,155	\$361,954	\$40,990,653	\$23,042	\$133,229	\$10,652	\$1,000,211	\$48,093,353	\$6,740,740
2 177,744,821	129,424,717	5,973,713	5,934,233	38,014,707	2,636,816	61,923,079	454,096	989,472	718,395	12,779,006	145,836,648	81,276,763
3 277,682	327,239	11,618	3,910	74,478	1,805	204,959	20,216	1,007	.....	9,740	410,681	204,417
4 2,308,187	4,294,045	115,660	173,577	667,993	20,520	3,029,751	24,360	6,997	20,520	234,361	4,622,959	1,572,358
5 16,250,911	14,294,222	585,971	408,828	4,141,784	163,222	7,079,223	113,757	101,453	29,460	1,010,524	16,258,737	9,016,312
6 2,676,959	3,264,904	137,113	164,767	747,943	35,692	1,740,843	27,186	9,964	60,287	341,109	3,563,239	1,786,704
7 11,960,337	2,182,051	96,435	84,123	431,305	741,935	84,809	303,695	175,832	10,802	193,055	3,079,670	2,252,026
8 16,201,190	12,753,518	456,535	259,523	5,976,989	1,091,415	3,596,571	31,979	68,177	19,321	1,252,703	14,353,274	9,670,288
9 67,620	134,052	6,900	700	31,594	704	88,456	2,328	359	.....	2,021	138,656	49,496
10 4,678,818	1,315,811	81,872	64,773	597,217	55,590	329,279	.....	19,209	3,132	164,749	1,498,256	1,113,397
11 161,327	148,631	8,775	9,618	59,163	2,653	47,885	11,896	780	55	7,756	194,898	144,260
12 384,362	711,787	29,622	43,948	174,355	4,528	417,730	18,948	728	296	21,632	804,229	381,971
13 4,245	10,459	.....	.....	4,718	883	3,457	1,440	42	.....	421	14,683	10,843
14 4,407,562	5,700,921	229,642	160,950	1,071,780	37,563	3,813,856	44,033	14,319	32,156	356,622	6,433,431	2,582,012
15 8,380,852	1,736,257	163,192	56,538	558,758	414,763	149,621	15,499	59,052	458	318,876	2,270,112	1,705,728
16 1,559,069	1,591,627	84,362	106,344	131,103	13,876	795,375	1,135	12,374	.....	446,958	1,907,369	1,098,118
17 94,532,845	77,273,870	565,038	800,777	5,089,999	21,227,222	47,107,500	38,520	430,205	26,360	1,898,259	83,699,238	15,274,516
18 163,383,821	178,093,126	1,792,510	2,268,379	28,614,117	7,672,641	131,570,514	3,050	735,414	58,786	5,377,715	197,780,043	58,536,888
19 1,191,041	1,037,939	33,402	50,313	251,926	5,556	613,528	24,947	4,003	.....	54,264	1,255,110	636,026
20 352,564	294,762	11,217	2,200	33,770	22,393	200,276	.....	2,455	.....	22,451	330,501	107,832
21 4,069,792	4,433,205	151,596	150,752	879,013	27,012	2,831,668	40,218	26,155	.....	317,801	4,939,092	2,080,412
22 13,753,911	9,398,890	141,055	55,835	1,033,121	89,260	7,630,335	7,000	43,612	855	347,049	10,127,836	2,408,232
23 2,634,728	1,424,852	84,831	44,463	553,371	254,658	343,070	1,480	13,107	350	129,522	1,620,060	1,022,332
24 4,731,718	11,529,484	62,970	34,656	230,036	77,402	2,436,914	15,060	8,428,651	1,000	252,846	12,011,115	9,496,709
25 57,748,188	21,008,272	998,973	684,613	3,207,244	731,019	5,832,081	11,824	4,624,313	66,300	4,892,005	25,332,059	18,708,959
26 1,979,718	1,037,261	40,640	48,462	79,439	10,728	707,459	3,622	66,289	.....	125,042	1,363,697	585,510
27 28,500,012	30,347,035	935,687	531,712	6,700,919	219,872	19,752,901	144,685	185,684	252,266	1,623,749	34,597,069	14,624,706
28 3,505,269	3,269,445	149,228	146,594	1,161,397	89,231	1,361,926	22,473	19,337	27,206	286,893	3,847,308	2,397,061
29 2,934,991	2,693,906	73,260	109,654	435,498	553,371	9,849,188	16,899	15,662	6,016	355,265	3,300,539	1,625,087
30 1,333,902	2,368,872	98,301	125,067	478,313	13,780	1,444,869	34,203	5,372	.....	168,907	2,744,492	1,285,843
31 166,000	262,373	9,248	1,150	55,722	2,620	179,555	3,640	915	800	8,723	291,187	109,012
32 315,989	516,425	21,520	6,149	293,545	8,067	150,724	16,235	1,530	300	18,355	669,855	511,064
33 74,145	59,608	1,125	4,329	32,604	1,023	7,071	1,054	395	1,559	10,448	80,884	72,790
34 3,593,177	3,549,176	111,593	60,562	1,092,113	30,944	1,891,439	53,808	19,209	1,985	287,525	3,925,757	2,003,374
35 2,562,088	3,387,051	33,959	22,184	83,232	26,778	3,054,269	360	7,405	.....	158,864	3,627,492	546,445
36 159,808	233,230	20,725	19,658	41,621	2,138	107,066	16,819	1,068	.....	24,135	274,050	164,846
37 11,757,377	12,482,218	598,065	778,140	904,378	86,353	8,473,693	42,917	72,040	000	1,515,126	13,617,189	5,047,143
38 20,069,694	15,515,130	404,240	192,088	2,419,215	1,049,097	9,849,188	4,800	80,867	10,708	1,498,867	16,965,260	6,000,975
39 5,094,576	5,478,505	195,343	116,409	881,779	48,497	3,385,189	24,493	282,825	3	543,967	6,306,606	2,872,920
40 4,071,946	4,908,370	287,680	512,590	385,063	31,100	1,856,865	66,293	31,865	5,380	1,741,533	5,859,469	3,971,503
41 305,989	410,002	27,203	53,886	49,852	1,096	221,023	6,732	975	2,040	47,695	469,869	247,750
42 11,152,443	10,492,159	156,675	255,175	1,028,304	522,595	7,621,988	9,436	100,092	4,025	343,869	10,753,738	2,609,155
43 67,357	101,460	22,040	7,724	10,166	322	42,646	1,600	748	.....	16,138	105,628	62,060
44 266,262	499,709	53,589	31,813	241,785	7,360	101,984	12,575	910	4,524	45,168	575,819	460,475
45 32,166,636	18,838,269	801,509	641,338	8,627,779	2,025,175	4,436,305	15,859	151,374	98,159	2,040,771	21,173,272	14,711,792
46 38,053,259	34,564,572	2,394,986	3,063,222	9,354,848	396,263	11,508,091	649,970	211,913	1,391,211	5,594,068	41,657,306	29,752,952
47 2,272,010	2,280,327	35,020	108,869	517,309	21,166	1,249,632	3,508	12,554	.....	332,369	2,747,190	1,476,401
48 37,545,665	45,575,644	637,545	1,390,141	5,659,522	300,166	32,082,249	5,810	151,455	1,177	5,287,579	53,910,131	21,468,116
49 5,074,718	4,903,112	207,557	641,330	1,321,055	47,024	2,114,961	12,945	27,503	6,335	624,342	5,488,341	3,326,356
50 1,980,873	1,640,212	45,650	32,144	360,534	250,292	840,063	8,791	8,791	.....	102,738	1,807,347	710,992
51 399,335	276,201	13,848	11,781	95,449	5,547	101,992	4,110	3,405	.....	40,069	297,667	190,128
52 665,589	459,669	28,400	13,281	203,797	14,460	163,530	3,120	5,689	.....	27,392	597,966	419,976
53 4,973,085	5,691,231	96,080	179,914	2,104,703	42,875	2,475,451	.....	40,686	.....	751,622	5,972,228	3,453,902
54 13,025,199	4,799,707	153,380	105,776	1,704,530	98,317	2,363,825	8,092	49,821	800	315,466	5,676,416	3,214,574
55 1,095,502	1,137,725	32,700	29,679	199,770	26,710	714,934	.....	10,761	.....	123,171	1,257,173	615,529
56 634,654	593,535	37,818	14,221	172,556	7,874	299,040	9,494	3,207	4,000	45,316	607,866	300,943
57 2,039,182	2,247,537	99,043	63,479	505,118	19,216	922,146	17,148	14,556	2,200	604,631	2,598,093	1,650,731
58 12,398,691	48,174,845	279,518	407,343	1,856,602	224,429	44,122,733	21,769	74,172	7,750	1,180,629	50,804,490	6,456,938
59 270,502	247,297	18,368	3,720	41,384	30,617	142,993	930	569	.....	6,728	379,205	205,595
60 12,731,616	14,050,747	186,625	388,553	826,561	222,034	11,438,956	17,279	57,390	843	914,466	17,077,308	5,416,278
61 63,532	35,654	5,300	1,320	14,365	1,436	8,101	.....	770	.....	38,158	38,158	28,621
62 239,453	402,982	20,781	18,102	142,532	12,403	158,901	11,922	694	.....	37,567	475,215	303,821
63 15,024,866	13,627,363	519,138	681,673	4,217,193	174,710	6,125,783	46,158	86,343	94,334	1,682,031	15,357,500	9,057,007
64 574,391	394,571	17,367	12,168	82,350	20,293	228,339	.....	3,276	.....	30,733	417,702	169,125
65 253,873	225,983	10,650	43,205	50,110	1,150	80,999	5,758	1,678	2,865	29,598	288,943	201,794
66 1,063,491	7,783,678	18,473	57,033	449,242	29,835	7,125,309	.....	7,036	.....	46,695	7,889,367	734,223

TABLE II.—DETAIL STATEMENT FOR THE

INDUSTRY.	Number of establishments	PERSONS ENGAGED IN INDUSTRY.										WAGE EARNERS—NUMBER DEC. 15, OR NEAREST REPRESENTATIVE DAY.					Primary horse-power.
		Total.	Proprietors and firm members.	Salaried officers, supts. and managers.	Clerks.		Wage earners.				Total.	16 and over.		Under 16.			
					Male.	Fe-male.	Average number.	Number.		Male.		Fe-male.	Male.	Fe-male.			
								Maximum month.	Minimum month.								
1 Tobacco manufactures.....	1,146	14,681	1,209	237	455	89	12,631	De 13,194	Fe 12,256	13,384	4,327	8,938	110	9	1,401		
2 Type founding and printing materials.....	5	87	5	3	5	1	73	Ap ¹ 75	My 70	74	71	2	1	55			
3 Typewriters and supplies.....	4	20	2	2	2	3	11	Ap ¹ 12	Ja ¹ 9	11	9	2	1	17			
4 Umbrellas and canes.....	16	371	15	13	42	14	287	De 314	Ja 252	314	87	208	6	13	82		
5 Wall plaster.....	23	340	10	35	25	11	259	Au ¹ 291	Ja 215	243	243	.....	.....	.....	1,823
6 Whips.....	4	205	.....	8	43	6	148	Mh 162	Se 137	142	91	50	.....	1	210
7 Woolen, worsted, and felt goods, and wool hats.....	20	2,711	23	41	65	16	2,506	Au 2,724	Ja 2,358	2,688	857	1,594	42	105	6,504		
8 All other industries ²	979	36,524	813	1,828	2,435	883	31,065	.....	.....	.....	.....	.....	.....	.....	73,492

¹ Same number reported for one or more other months.

² All other industries embrace—

Artists' materials.....	1	Emery and other abrasive wheels.....	3	Horseshoes, not made in steel works or rolling mills.....	1
Awnings, tents, and sails.....	30	Engraving and diesinking.....	8	House-furnishing goods, not elsewhere specified.....	22
Axle grease.....	5	Engraving, wood.....	4	Ink, writing.....	1
Bags, other than paper.....	6	Fire extinguishers, chemical.....	2	Instruments, professional and scientific.....	17
Beet sugar.....	1	Fireworks.....	3	Iron and steel, bolts, nuts, washers, and rivets, not made in steel works or rolling mills.....	17
Billiard tables and materials.....	4	Flavoring extracts.....	37	Iron and steel, doors and shutters.....	3
Bluing.....	3	Food preparations.....	61	Iron and steel forgings.....	30
Bone, carbon, and lamp black.....	1	Foundry supplies.....	10	Iron and steel nails and spikes, cut and wrought, including wire nails, not made in steel works or rolling mills.....	4
Carpets and rugs, other than rag.....	2	Furs, dressed.....	1	Iron and steel pipe, wrought.....	5
Carriages and sleds, children's.....	9	Galvanizing.....	5	Jewelry and instrument cases.....	2
Cash registers and calculating machines.....	8	Glass, cutting, staining, and ornamenting.....	34	Labels and tags.....	4
Charcoal.....	8	Glucose and starch.....	2	Lasts.....	2
Clothing, horse.....	1	Glue.....	3	Lead, bar, pipe, and sheet.....	2
Clothing, men's, buttonholes.....	7	Gold and silver, reducing and refining, not from the ore.....	2	Locomotives, not made by railroad companies.....	1
Cordials and syrups.....	5	Grease and tallow.....	23	.....	.....
Dentists' materials.....	1	Hair work.....	7	.....	.....
Drug grinding.....	5	Hats, straw.....	1
Dyeing and finishing textiles.....	6

MANUFACTURES—OHIO.

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STATE, BY INDUSTRIES: 1909—Continued.

Capital.	EXPENSES.										Value of products.	Value added by manufacture.
	Total.	Services.			Materials.		Miscellaneous.					
		Officials.	Clerks.	Wage earners.	Fuel and rent of power.	Other.	Rent of factory.	Taxes, including internal revenue.	Contract work.	Other.		
1 \$11,070,490	\$25,573,191	\$490,777	\$489,449	\$4,504,787	\$66,380	\$12,008,443	\$184,249	\$4,758,332	\$22,702	\$3,048,072	\$28,907,269	\$16,832,446
2 367,693	159,174	7,360	5,428	58,046	2,724	69,018	6,320	674	9,604	192,220	120,478	
3 25,693	47,797	2,600	4,546	6,224	243	25,944	1,908	27	6,305	54,102	27,915	
4 504,884	885,072	25,214	43,766	104,642	2,502	604,851	12,389	3,295	500	87,913	1,005,130	397,777
5 679,065	712,459	49,346	20,038	105,556	38,704	395,577	36,195	6,343	4,615	49,485	935,165	500,884
6 302,852	314,633	13,210	50,925	55,452	3,780	137,863	1,910	1,910	51,493	349,077	207,434	
7 7,158,812	6,767,443	115,080	91,688	924,844	61,360	4,554,069	2,785	32,612	479,818	504,537	7,690,149	3,074,120
8 83,524,536	94,176,549	2,728,243	2,731,218	16,489,005	1,397,744	55,569,415	302,606	528,617	308,265	14,121,436	105,098,862	48,131,703

* All other industries embrace—Continued.

Looking-glass and picture frames.....	15	Pulp goods.....	2	Vault lights and ventilators.....	1
Malt.....	8	Roofing materials.....	11	Vinegar and elder.....	19
Matches.....	4	Rules, ivory and wood.....	1	Wall paper.....	2
Mineral and soda waters.....	174	Scales and balances.....	6	Washing machines and clothes wringers.....	18
Mucilage and paste.....	18	Screws, wood.....	1	Waste.....	1
Needles, pins, and hooks and eyes.....	1	Silk and silk goods, including throwsters.....	1	Wheelbarrows.....	3
Oil, cottonseed, and cake.....	1	Silverware and plated ware.....	5	Windmills.....	3
Oil, not elsewhere specified.....	21	Soda-water apparatus.....	1	Window shades and fixtures.....	7
Oilecloth and linoleum.....	3	Sporting and athletic goods.....	12	Wire.....	6
Oleomargarine.....	2	Springs, steel, car and carriage.....	5	Wirework, including wire rope and cable.....	60
Paper patterns.....	2	Stationary goods, not elsewhere specified.....	14	Wood, turned and carved.....	83
Paving materials.....	5	Statuary and art goods.....	8	Wool pulling.....	1
Peanuts, grading, roasting, cleaning, and shelling..	2	Toys and games.....	19		
Pipes, tobacco.....	1	Upholstering materials.....	9		

MANUFACTURES—OHIO.

TABLE III.—DETAIL STATEMENT FOR CITIES OF 50,000 INHABITANTS OR MORE, BY INDUSTRIES, CITIES OF 50,000 INHABITANTS OR MORE, BY INDUSTRIES.

AKRON.

INDUSTRY.	Number of establishments	PERSONS ENGAGED IN INDUSTRY.										WAGE EARNERS—NUMBER DEC. 15, OR NEAREST REPRESENTATIVE DAY.					Primary horse-power.
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks.		Wage earners (average number).			Total.	16 and over.		Under 16.				
					Male.	Female.	Total.	16 and over.			Under 16.	Male.	Female.	Male.	Female.		
								Male.	Female.								
1 All industries.....	246	19,023	159	432	2,006	595	15,831	13,387	2,223	221	17,411	14,728	2,445	87	153	36,233	
2 Artificial stone.....	10	51	16	3	1	1	30	30			30	30				16	
3 Bread and other bakery products.....	25	145	23	6	12	14	90	81	9		95	85	10			105	
4 Brick and tile.....	3	06	3	5	3		85	84		1	98	97				345	
5 Carriages and wagons and materials.....	7	137	8	6	5	3	115	114	1		117	116		1		357	
6 Foundry and machine-shop products.....	20	1,061	12	35	36	9	969	908	25	36	1,062	1,014	28	27	13	2,015	
7 Liquors, malt.....	3	110		14	14	1	81	81			80	80				1,522	
8 Lumber and timber products.....	10	378	8	16	23	12	319	279	40		264	231	33			969	
9 Patent medicines and compounds and druggists' preparations.....	8	18	9	1	1	1	6	3	3		9	5	4				
10 Pottery, terra-cotta, and fire-clay products.....	15	1,162	5	33	26	11	1,087	907	77	13	1,108	1,016	70		18	2,557	
11 Printing and publishing.....	27	990	16	37	103	100	734	352	370	3	751	375	403	3		634	
12 Stoves and furnaces, including gas and oil stoves.....	5	396		11	40	11	334	334			354	354				610	
13 Tobacco manufactures.....	7	17	7				10	9	1		11	10	1				
14 All other industries ¹	100	14,462	52	265	1,742	432	11,071	10,115	1,688	165	13,382	11,313	1,886	56	127	26,813	

¹ All other industries embrace: Agricultural implements, 1; automobiles, including bodies and parts, 5; awnings, tents, and sails, 1; baking powders and yeast, 1; belting and hose, leather, 1; blacking and cleansing and polishing preparations, 2; boxes, fancy and paper, 1; brass and bronze products, 2; brooms, 2; brushes, 1; butter, cheese, and condensed milk, 1; canning and preserving, 1; carpets, rag, 3; cars and general shop construction and repairs by street-railroad companies, 1; clothing, women's, 1; coffee and spice, roasting and grinding, 1; confectionery, 3; cooperage and wooden goods, not elsewhere specified, 1; copper, tin, and sheet-iron products, 8; cordage and twine and jute and linen goods, 1; electrical machinery, apparatus, and supplies, 3; electroplating, 1; engraving and diesinking, 1; files, 1; flavoring extracts, 1; flour-mill and gristmill products, 1; food preparations, 4; furnishing goods, men's, 1; gas and electric fixtures and lamps and reflectors, 1; glass, 1; hand stamps and stencils and brands, 1;

CANTON.

1 All industries.....	204	11,313	129	328	641	253	9,964	8,892	955	117	10,815	9,648	1,043	95	31	27,016
2 Agricultural implements.....	5	351		15	44	9	283	283			319	319				442
3 Brass and bronze products.....	5	35	7	1	1	4	22	21		1	37	36		1		38
4 Bread and other bakery products.....	19	97	23	3	7	5	59	55	4		60	56	4			38
5 Confectionery.....	7	44	7	1	3	3	30	9	20	1	31	9	21	1		18
6 Cutlery and tools, not elsewhere specified.....	5	179		12	13	16	138	123	15		146	130	16			230
7 Foundry and machine-shop products.....	32	2,044	13	74	158	51	1,748	1,678	18	52	1,832	1,758	19	55		3,409
8 Furniture and refrigerators.....	5	208	2	10	10	7	179	175	4		194	190	4			354
9 Leather goods.....	3	305	2	12	12	12	267	175	90	2	284	186	96	2		131
10 Lumber and timber products.....	3	52	1	4	1		46	46			50	50				180
11 Printing and publishing.....	17	210	17	10	20	11	161	139	22		173	149	24			185
12 Tobacco manufactures.....	19	93	23				70	35	30	5	83	42	35	6		
13 All other industries ¹	84	7,686	34	184	372	135	6,961	6,153	752	56	7,006	6,721	824	30	31	21,661

¹ All other industries embrace: Artificial stone, 3; automobiles, including bodies and parts, 1; awnings, tents, and sails, 1; axle grease, 1; blacking and cleansing and polishing preparations, 2; boxes, fancy and paper, 1; brooms, 2; butter, cheese, and condensed milk, 2; canning and preserving, 1; carriages and wagons and materials, 2; cars and general shop construction and repairs by steam-railroad companies, 1; cars and general shop construction and repairs by street-railroad companies, 1; clocks and watches, including cases and materials, 2; clothing, men's, including shirts, 1; clothing, women's 1; coffee and spice, roasting and grinding, 2; cooperage and wooden goods, not elsewhere specified, 1; copper, tin, and sheet-iron products, 7; dairymen's, poulterers', and apiarists' supplies, 2; electrical machinery, apparatus, and supplies, 1; electroplating, 2; flour-mill and gristmill products, 2; furnishing goods, men's, 2; gas and electric fixtures and lamps and reflectors, 3; gas, illuminating and heating, 1; house-

CINCINNATI.

1 All industries.....	2,184	72,488	2,015	2,670	5,659	1,952	60,192	43,899	14,949	1,344	64,696	47,432	15,785	621	858	88,597
2 Bags, paper.....	5	358		18	31	10	299	153	128	18	303	155	130	1	17	320
3 Blacking and cleansing and polishing preparations.....	14	92	21	4	19	10	38	21	17		41	23	18			34
4 Boots and shoes, including cut stock and findings.....	32	8,702	21	199	285	208	7,989	4,514	3,132	343	8,328	4,701	3,266	137	224	4,631
5 Boxes, cigar.....	8	248	10	9	5	2	222	109	107	6	236	116	114	6		405
6 Boxes, fancy and paper.....	15	738	9	30	20	10	609	102	425	82	715	173	455	1	86	218
7 Brass and bronze products.....	14	635	12	18	31	11	503	534	24	5	579	549	25	5		424
8 Bread and other bakery products.....	187	1,768	186	43	121	73	1,340	1,029	296	15	1,446	1,110	320	6	10	909
9 Brick and tile.....	7	114	7	7	1		99	99			131	131				280
10 Canning and preserving.....	9	315	5	16	61	10	217	130	76	11	251	160	88	4	9	420
11 Carriages and wagons and materials.....	74	2,677	64	125	163	75	2,250	2,144	97	9	2,190	2,087	94	9		2,523
12 Cars and general shop construction and repairs by steam-railroad companies.....	3	327		3	10		314	304	10		317	307	10			660
13 Chemicals.....	11	162	4	16	12	8	122	119	3		129	119	3			608
14 Clothing, men's, including shirts.....	183	6,956	237	106	757	138	5,718	1,870	3,654	194	6,177	2,022	3,947	24	184	659
15 Clothing, women's.....	26	1,541	41	28	103	44	1,325	444	341	40	1,454	487	924	13	30	176
16 Coffee and spice, roasting and grinding.....	8	356	7	14	94	20	221	115	106		231	120	111			691
17 Confectionery.....	22	922	21	23	73	34	771	322	401	48	912	381	474	2	55	873
18 Cooperage and wooden goods, not elsewhere specified.....	20	697	17	29	15	4	632	630	1	1	579	577	1			1,269
19 Copper, tin, and sheet-iron products.....	37	1,019	30	47	78	31	833	540	31	262	1,057	685	39	175	158	1,154
20 Cutlery and tools, not elsewhere specified.....	9	80	14	5	6		55	53	2		61	59	2			166
21 Electrical machinery, apparatus, and supplies.....	13	393	9	20	32	13	313	301	12		362	348	14			397

MANUFACTURES—OHIO.

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AND TOTALS FOR ALL INDUSTRIES IN CITIES OF 10,000 BUT LESS THAN 50,000 INHABITANTS: 1909.

CITIES OF 50,000 INHABITANTS OR MORE, BY INDUSTRIES.

AKRON.

Capital.	EXPENSES.										Value of products.	Value added by manufacture.
	Total.	Services.			Materials.		Miscellaneous.					
		Officials.	Clerks.	Wage earners.	Fuel and rent of power.	Other.	Rent of factory.	Taxes, including internal revenue.	Contract work.	Other.		
1 \$58,216,484	\$62,846,917	\$1,094,885	\$1,909,378	\$8,935,850	\$756,617	\$42,315,011	\$36,722	\$373,263	\$236,513	\$7,189,678	\$73,158,206	\$30,087,578
2 31,884	33,518	2,090	794	14,556	357	14,334	110	270	-----	998	41,280	26,539
3 161,326	368,283	7,580	15,686	58,194	8,324	246,243	8,711	957	-----	22,588	416,828	162,261
4 115,919	121,891	5,000	2,188	42,680	30,205	3,628	-----	640	10,672	-----	20,329	100,770
5 442,009	151,165	9,262	6,010	68,286	4,174	73,974	300	2,202	157	-----	16,800	235,680
6 3,008,142	1,916,425	60,300	45,800	650,481	35,127	1,027,124	6,840	14,152	152	-----	76,449	2,248,059
7 914,133	470,171	71,420	14,536	57,339	19,162	150,730	-----	100,497	-----	-----	56,478	645,038
8 663,164	736,603	20,972	36,212	191,048	6,497	430,957	200	4,327	-----	-----	46,390	792,141
9 18,630	20,224	780	1,620	2,440	180	8,350	400	109	-----	200	6,165	28,983
10 1,983,546	1,215,275	56,172	30,600	556,755	212,049	191,072	-----	17,413	7,356	143,858	1,349,808	946,687
11 3,587,216	1,811,038	100,450	66,568	452,446	13,846	583,180	4,360	12,898	213,353	364,428	2,352,910	1,756,375
12 804,197	647,561	19,900	57,224	227,811	7,294	237,335	2,580	4,074	-----	91,343	753,955	509,326
13 5,231	13,510	-----	-----	4,245	-----	5,704	-----	678	-----	-----	17,989	12,195
14 46,476,007	55,311,753	740,869	1,632,190	6,609,560	412,922	39,342,272	12,534	213,065	4,623	6,343,718	64,134,973	24,379,779

hats, fur-felt, 2; hosiery and knit goods, 1; ice, manufactured, 1; ink, printing, 1; iron and steel, steel works and rolling mills, 1; leather goods, 1; marble and stone work, 2; mattresses and spring beds, 1; mineral and soda waters, 3; models and patterns, not including paper patterns, 1; mucilage and paste, 4; oilcloth and linoleum, 1; paint and varnish, 1; paper and wood pulp, 1; pens, fountain, stylographic, and gold, 1; photo-engraving, 1; rubber goods, not elsewhere specified, 14; shipbuilding, including boat building, 1; signs and advertising novelties, 1; sporting and athletic goods, 2; steam packing, 1; surgical appliances and artificial limbs, 1; umbrellas and canes, 1; wirework, including wire rope and cable, 1; wood, turned and carved, 1.

CANTON.

1 \$25,342,343	\$24,607,354	\$663,154	\$683,926	\$5,718,517	\$569,832	\$14,074,131	\$31,367	\$180,661	\$162,736	\$2,523,210	\$28,562,811	\$13,939,048
2 1,047,885	765,025	32,534	66,105	127,007	7,132	393,443	2,625	3,693	-----	132,486	819,171	418,666
3 46,993	52,738	880	1,264	16,377	1,160	26,222	933	180	2,829	2,893	55,461	28,079
4 89,551	215,138	5,200	7,280	34,055	4,266	142,642	1,321	633	-----	19,711	253,488	106,550
5 50,868	59,152	250	1,982	10,046	1,894	40,703	2,680	117	-----	1,980	68,733	26,636
6 308,108	246,122	31,743	14,156	74,032	3,203	89,420	160	2,203	-----	31,155	257,833	165,210
7 4,578,085	4,155,983	182,113	170,974	1,005,372	97,044	2,170,142	11,541	23,460	82,804	412,533	4,891,406	2,624,220
8 530,425	250,573	14,344	17,901	99,188	5,005	73,249	-----	2,456	-----	33,430	296,295	213,041
9 467,833	530,161	18,032	16,453	115,903	2,344	336,306	-----	1,697	-----	39,366	548,803	210,153
10 106,997	138,203	4,872	1,040	29,441	1,109	94,260	-----	700	-----	6,781	134,525	39,156
11 326,322	248,733	17,615	19,850	88,097	3,839	74,309	4,529	1,716	15	38,763	292,656	214,603
12 32,758	88,242	-----	-----	26,620	305	41,932	1,095	17,417	-----	873	105,931	63,694
13 17,757,523	17,857,284	355,671	366,921	4,092,269	442,801	10,586,503	6,483	126,409	77,088	1,803,239	20,858,509	9,820,205

furnishing goods, not elsewhere specified, 1; ice, manufactured, 1; iron and steel, steel works and rolling mills, 5; iron and steel, doors and shutters, 1; iron and steel forgings, 1; liquors, malt, 3; marble and stone work, 1; mattresses and spring beds, 1; mineral and soda waters, 3; paint and varnish, 3; paper goods, not elsewhere specified, 1; patent medicines and compounds and druggists' preparations, 3; photo-engraving, 1; rubber goods, not elsewhere specified, 2; sales and vaults, 1; saws, 1; signs and advertising novelties, 1; soap, 1; springs, steel, car and carriage, 1; stereotyping and electrotyping, 1; surgical appliances and artificial limbs, 2; tin plate and terneplate, 1; toys and games, 1; wirework, including wire rope and cable, 2.

CINCINNATI.

1 \$150,254,292	\$174,788,679	\$5,825,222	\$6,934,087	\$31,100,972	\$1,913,963	\$100,017,987	\$2,178,707	\$9,004,668	\$2,192,341	\$15,620,732	\$194,515,692	\$92,583,742
2 673,221	1,019,945	44,558	27,598	129,254	8,331	721,189	15,851	1,626	3,431	68,057	1,088,250	358,680
3 90,292	195,598	4,836	19,625	15,845	826	111,532	4,190	469	-----	40,275	254,960	142,902
4 7,656,352	14,208,886	414,573	601,213	3,517,986	51,995	8,531,675	124,626	34,044	128	932,646	14,998,672	6,415,002
5 212,835	294,721	11,732	4,784	81,809	3,363	173,769	4,905	1,810	42	12,707	347,066	169,934
6 442,246	603,243	53,162	16,785	184,858	6,905	284,799	19,134	1,937	-----	35,063	679,170	387,466
7 1,304,131	864,571	44,048	35,457	328,527	12,034	372,733	9,338	5,034	20	57,380	996,195	611,428
8 2,652,881	4,429,625	101,380	135,706	723,094	72,787	2,961,280	75,566	21,691	-----	338,129	5,102,593	2,068,540
9 100,207	73,571	6,160	3,000	41,173	10,244	3,129	1,200	964	840	9,461	93,649	80,276
10 646,176	779,288	33,444	71,139	77,465	5,444	477,450	6,830	3,347	-----	104,169	825,010	342,116
11 4,477,372	6,008,649	200,463	180,711	1,295,236	41,464	3,660,246	83,984	24,036	17,337	505,172	6,824,715	3,123,005
12 398,490	328,308	4,140	9,618	203,470	9,048	101,911	-----	121	-----	-----	328,308	217,349
13 712,874	724,611	43,270	19,980	76,268	27,483	446,808	8,703	5,260	-----	96,839	898,720	424,438
14 10,211,774	15,938,315	300,939	910,798	2,512,386	54,063	8,626,031	240,745	23,107	1,539,819	1,130,427	16,974,928	8,294,834
15 1,229,502	2,648,176	79,986	139,937	613,775	10,896	1,502,888	44,920	2,915	3,810	247,069	2,912,862	1,399,008
16 1,083,406	1,968,564	24,120	106,393	91,271	11,183	1,584,026	20,155	5,782	-----	122,634	2,110,024	514,815
17 070,132	1,831,106	50,500	88,241	279,006	16,564	1,205,359	35,261	4,552	12,000	139,623	2,029,075	807,152
18 1,445,850	1,219,146	55,028	20,410	291,804	9,248	756,768	7,891	7,280	-----	70,717	1,232,289	466,273
19 2,018,646	2,438,655	79,863	67,310	413,030	10,726	1,613,672	27,145	11,597	2,122	204,184	2,774,597	1,141,199
20 100,595	120,722	8,220	5,048	35,462	4,354	66,613	2,889	574	-----	-----	136,284	85,317
21 529,186	712,546	55,918	39,446	200,215	8,966	324,529	16,410	3,332	-----	63,730	835,500	502,005

MANUFACTURERS—OHIO.

TABLE III.—DETAIL STATEMENT FOR CITIES OF 50,000 INHABITANTS OR MORE, BY INDUSTRIES, AND CITIES OF 50,000 INHABITANTS OR MORE, BY INDUSTRIES—Continued. CINCINNATI—Continued.

INDUSTRY.	Number of establishments	PERSONS ENGAGED IN INDUSTRY.										WAGE EARNERS—NUMBER DEC. 15, OR NEAREST REPRESENTATIVE DAY.						Primary horse-power.
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks.		Wage earners (average number).				Total.	16 and over.		Under 16.				
					Male.	Female.	Total.	16 and over.		Under 16.		Male.	Female.	Male.	Female.			
								Male.	Female.									
22 Flags, banners, regalia, society badges, and emblems.	8	498	3	10	51	25	403	118	279	6	355	104	240	1	4	317		
23 Flour-mill and gristmill products.	6	84	3	8	12	9	52	50	2	.....	52	50	2	.....	.....	685
24 Foundry and machine-shop products.	200	10,110	120	433	838	185	8,534	8,449	51	34	10,032	9,031	65	36	.....	12,590	
25 Furniture and refrigerators.	60	2,306	67	80	94	33	2,026	1,069	49	8	2,202	2,202	56	8	.....	3,499	
26 Hats and caps, other than felt, straw, and wool.	12	323	20	11	20	12	200	102	145	13	265	104	148	1	12	33		
27 Hosiery and knit goods.	6	231	5	4	1	1	220	31	176	13	218	31	174	2	11	192		
28 Ice, manufactured.	8	168	1	24	10	4	129	129	.....	.....	137	137	.....	.....	.....	3,229
29 Jewelry.	15	284	25	8	20	15	210	176	31	3	216	181	32	3	.....	88	
30 Leather goods.	16	659	20	30	61	15	533	500	27	6	553	519	28	6	.....	230	
31 Leather, tanned, curried, and finished.	13	1,043	10	17	16	3	997	995	2	.....	1,214	1,211	3	.....	.....	2,269
32 Liquors, distilled.	4	300	.....	10	17	2	271	261	10	.....	312	300	12	.....	.....	1,750
33 Liquors, malt.	22	1,858	.....	96	181	3	1,578	1,574	4	.....	1,555	1,551	4	.....	.....	11,416
34 Liquors, vinous.	5	16	7	1	.....	.....	8	.....	.....	.....	9	9	.....	.....	.....	6
35 Lumber and timber products.	45	1,866	30	82	88	45	1,021	1,003	2	16	1,077	1,058	2	17	.....	6,808	
36 Marble and stone work.	25	340	30	18	24	4	209	209	.....	.....	310	310	.....	.....	.....	854
37 Mattresses and spring beds.	9	203	10	3	15	10	165	98	57	10	171	102	59	8	2	227		
38 Millinery and lace goods.	11	494	10	15	20	15	428	42	378	8	393	39	347	2	5	59		
39 Models and patterns, not including paper patterns.	9	104	11	2	1	1	89	89	.....	.....	90	90	.....	.....	.....	65
40 Musical instruments, pianos and organs and materials.	7	760	5	12	25	6	712	646	65	1	784	711	72	1	.....	835	
41 Paint and varnish.	24	636	19	51	127	31	408	400	8	.....	412	404	8	.....	.....	1,356
42 Paper goods, not elsewhere specified.	6	144	7	13	5	6	113	80	31	2	135	95	37	1	2	252		
43 Patent medicines and compounds and druggists' preparations.	50	448	40	31	129	40	202	106	93	3	222	116	102	2	2	404		
44 Pottery, terra-cotta, and fire-clay products.	7	276	3	17	12	7	237	192	45	.....	237	192	45	.....	.....	970
45 Printing and publishing.	280	5,391	246	277	716	288	3,866	3,070	723	73	4,010	3,183	750	68	9	4,071		
46 Safes and vaults.	5	703	1	28	62	33	579	577	.....	.....	607	605	2	.....	.....	970
47 Show cases.	3	74	.....	7	3	1	63	63	.....	.....	61	61	.....	.....	.....	118
48 Slaughtering and meat packing.	55	1,368	69	51	114	18	1,116	1,063	63	.....	1,202	1,134	68	.....	.....	3,710
49 Soap.	16	663	8	25	104	35	491	253	225	13	505	260	232	1	12	699		
50 Stoves and furnaces, including gas and oil stoves.	15	1,092	3	57	88	72	872	807	5	.....	920	915	5	.....	.....	1,086
51 Tobacco manufactures.	208	2,029	228	49	107	19	2,526	937	1,584	5	2,500	961	1,024	5	.....	247	
52 All other industries ¹ .	337	9,017	299	422	709	303	7,224	5,599	1,531	94	7,094	5,966	1,029	73	26	13,315		

¹ All other industries embrace: Artificial flowers and leathers and plumes, 1; artificial stone, 1; automobiles, including bodies and parts, 3; awnings, tents, and sails, 7; axle grease, 1; babbit metal and solder, 4; bags, other than paper, 1; baking powders and yeast, 3; baskets, and rattan and willow ware, 5; belting and hose, leather, 3; belting and hose, woven and rubber, 1; billiard tables and materials, 2; bluing, 1; bone, carbon, and lamp black, 1; brooms, 4; brushes, 5; buttons, 1; carpets, rag, 3; carriages and sleds, children's, 4; cash registers and calculating machines, 1; clocks and watches, including cases and materials, 4; cloth, sponging and rednishing, 3; clothing, men's, buttonholes, 5; coffins, burialcases, and undertakers' goods, 4; coke, 1; cordage and twine and lute and linen goods, 1; cordials and syrups, 1; cotton goods, including cotton small wares, 2; dyeing and finishing textiles, 1; electroplating, 6; enameling and japanning, 1; engraving and diesinking, 6; engraving, wood, 2; fancy articles, not elsewhere specified, 6; fertilizers, 1; fire extinguishers, chemical, 1; flavoring extracts, 11; food preparations, 7; foundry supplies, 4; fur goods, 3; furnishing goods, men's, 8; galvanizing, 2; gas and electric fixtures and lamps and reflectors, 8; gas, illuminating and heating, 2; glass, 1; glass, cutting, staining, and ornamenting, 8; glue, 1; gold and silver, reducing and refining, not from the ore, 2; grease and tallow, 9; hair work, 3; hand stamps and stenils and brands, 9; hats, fur-felt, 1; hats, straw, 1; house-furnishing

CLEVELAND.

1 All industries	2,148	98,686	1,718	2,927	7,259	2,054	84,728	69,643	13,746	1,339	94,511	78,201	14,870	630	810	199,898
2 Artificial stone	18	158	19	10	8	.....	121	121	.....	.....	111	111	.....	.....	.....	153
3 Automobiles, including bodies and parts	32	7,115	20	137	460	90	6,408	6,331	94	13	8,388	8,288	84	12	4	9,135
4 Blacking and cleansing and polishing preparations.	19	100	16	17	8	8	51	85	10	.....	62	43	19	.....	.....	55
5 Boots and shoes, including cut stock and findings.	6	631	8	15	40	11	557	255	205	97	565	259	208	63	35	304
6 Boxes, cigar	5	78	5	3	.....	.....	69	19	50	.....	73	20	53	.....	.....	27
7 Boxes, fancy and paper	6	790	.....	16	22	13	739	366	322	51	773	383	337	1	52	647
8 Brass and bronze products	28	931	23	44	34	29	801	800	1	.....	1,053	1,052	1	.....	.....	872
9 Bread and other bakery products	198	1,696	201	32	169	65	1,220	1,026	192	11	1,277	1,066	199	7	5	14
10 Brick and tile	13	583	9	19	8	1	546	543	.....	.....	633	630	.....	.....	.....	1,965
11 Carriages and wagons and materials	33	330	38	12	6	7	267	266	1	.....	255	254	1	.....	.....	175
12 Cars and general shop construction and repairs by steam-railroad companies.	6	1,473	.....	33	67	1	1,372	1,366	6	.....	1,497	1,490	7	.....	.....	1,640
13 Chemicals	5	557	.....	16	60	12	469	464	5	.....	533	528	5	.....	.....	1,840
14 Clothing, men's, including shirts	93	3,166	110	49	185	77	2,745	914	1,705	126	2,981	992	1,852	5	132	346
15 Clothing, women's	96	6,226	100	121	425	162	5,418	2,270	3,105	43	5,976	2,504	3,422	.....	50	711
16 Confectionery	16	908	10	27	48	20	803	132	484	187	858	141	517	76	125	679
17 Cooperage and wooden goods, not elsewhere specified.	10	289	9	7	4	8	261	259	.....	.....	317	314	.....	.....	.....	583
18 Copper, tin, and sheet-iron products	37	1,531	32	41	75	19	1,364	1,097	259	8	1,478	1,184	280	9	.....	1,221
19 Cutlery and tools, not elsewhere specified	15	1,662	11	22	162	33	1,444	1,282	153	4	1,731	1,537	189	2	3	3,246
20 Electrical machinery, apparatus, and supplies.	40	1,899	20	85	135	81	1,578	1,002	575	1	1,831	1,163	667	1	.....	1,980
21 Foundry and machine-shop products	231	20,348	121	615	1,364	333	17,915	17,557	251	107	20,809	20,392	297	114	6	24,204
22 Furniture and refrigerators	25	557	19	18	36	17	467	436	25	6	489	456	26	5	2	578
23 Gas and electric fixtures and lamps and reflectors.	17	409	16	15	43	9	326	274	52	.....	337	283	54	.....	.....	199
24 Hats and caps, other than felt, straw, and wool.	9	132	15	5	12	3	97	45	47	5	104	49	50	.....	.....	11
25 Hosiery and knit goods	13	1,395	12	41	57	21	1,234	189	801	154	1,306	200	943	30	133	407
26 Ice, manufactured	5	131	1	12	4	3	111	105	6	111	105	6	3,266

MANUFACTURES—OHIO.

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TOTALS FOR ALL INDUSTRIES IN CITIES OF 10,000 BUT LESS THAN 50,000 INHABITANTS: 1909—Continued.

CITIES OF 50,000 INHABITANTS OR MORE, BY INDUSTRIES—Continued.

CINCINNATI—Continued.

Capital.	EXPENSES.										Value of products.	Value added by manufacture.	
	Total.	Services.			Materials.		Miscellaneous.						
		Officials.	Clerks.	Wage earners.	Fuel and rent of power.	Other.	Rent of factory.	Taxes, including internal revenue.	Contract work.	Other.			
22	\$668,178	\$845,494	\$25,475	\$62,647	\$162,418	\$3,545	\$499,606	\$11,317	\$2,266	\$1,100	\$77,120	\$388,361	\$385,210
23	400,465	1,058,317	14,591	18,196	37,672	8,862	948,407	2,486	2,712	25,391	1,082,770	125,501	
24	21,399,975	16,155,737	977,016	898,887	4,984,809	216,750	6,827,185	186,279	113,838	42,960	1,908,013	13,370,658	11,335,723
25	3,024,480	3,549,059	150,847	112,593	1,070,633	32,331	1,694,355	60,743	25,844	2,492	399,821	4,061,953	2,335,267
26	263,776	470,158	19,700	25,142	112,280	2,689	280,839	13,616	384	15,508	632,325	243,797	
27	426,362	398,449	15,000	1,200	84,479	3,501	253,868	1,867	1,690	1,000	35,844	441,745	184,376
28	1,851,321	338,244	40,150	10,485	81,332	92,071	31,550	5,049	10,621	66,986	385,286	261,665	
29	1,002,184	786,138	15,410	37,054	156,398	3,485	514,074	17,786	2,973	38,968	935,935	418,376	
30	1,474,520	1,301,187	46,941	53,945	276,784	7,013	782,656	17,120	6,069	110,659	1,498,788	709,119	
31	9,503,170	4,528,007	52,925	18,282	570,074	48,190	3,629,073	5,228	24,999	855	176,401	5,058,920	1,381,657
32	2,833,836	8,398,484	39,887	22,662	178,395	50,511	1,773,953	15,000	6,129,991	188,085	8,744,761	6,920,297	
33	15,464,116	7,412,217	330,999	282,616	1,167,743	239,307	1,934,139	9,610	1,592,221	1,855,582	8,873,507	6,700,061	
34	56,869	20,440	1,040	5,185	275	19,192	990	1,716	1,042	39,570	20,103		
35	6,559,630	4,459,531	188,117	104,444	862,596	35,028	2,851,922	40,328	27,612	1,312	350,172	5,021,098	2,134,148
36	581,667	563,622	18,322	31,804	181,128	9,797	242,089	9,272	3,254	14,200	53,756	631,580	379,694
37	310,942	359,420	3,950	17,775	74,287	3,245	220,044	6,595	953	32,571	394,168	170,879	
38	136,086	492,911	21,047	27,781	120,381	2,002	292,155	13,908	556	15,081	546,648	252,491	
39	70,495	128,546	4,160	1,344	62,982	2,100	51,525	2,810	307	250	3,068	151,198	67,573
40	1,184,890	1,627,034	36,310	25,609	371,324	3,572	1,076,858	45,490	6,054	61,817	1,752,617	672,187	
41	4,026,491	3,307,098	124,362	157,867	214,994	31,744	2,454,057	19,141	26,954	277,979	3,879,810	1,394,009	
42	319,039	314,154	21,823	7,206	41,807	4,258	200,707	9,934	1,554	26,855	349,285	141,320	
43	953,480	1,021,564	81,016	117,294	89,805	9,713	487,009	15,160	6,780	214,727	1,230,060	733,338	
44	727,210	283,077	31,048	13,065	118,107	24,374	27,197	810	3,455	21,970	53,051	370,001	318,430
45	8,450,749	9,600,927	608,354	770,673	2,479,822	97,600	3,251,087	200,043	50,540	445,644	1,697,129	11,519,118	8,170,431
46	1,156,228	1,329,854	76,742	180,053	358,838	10,357	610,493	9,220	9,926	65,236	1,401,157	771,317	
47	57,823	121,211	8,140	4,250	42,972	2,502	47,216	4,510	570	11,051	115,538	65,820	
48	4,553,922	18,303,786	91,920	112,979	669,084	72,007	16,901,498	14,193	28,996	2,400	410,729	19,320,237	2,346,732
49	1,620,682	2,066,292	60,182	144,897	193,042	10,211	1,339,324	9,545	10,320	543	289,228	2,352,006	993,471
50	2,160,012	2,075,539	100,077	109,049	485,300	21,701	991,354	28,607	13,048	2,685	323,718	2,324,950	1,311,895
51	2,363,702	3,702,550	76,548	112,524	988,422	11,634	1,627,963	61,909	524,783	980	357,787	4,153,232	2,513,635
52	19,605,825	23,886,786	928,777	953,075	3,743,089	459,034	14,641,209	590,398	214,210	74,901	2,280,913	26,639,534	11,538,691

goods, not elsewhere specified, 4; ink, printing, 7; ink, writing, 1; instruments, professional and scientific, 3; iron and steel, steel works and rolling mills, 1; iron and steel, bolts, nuts, washers, and rivets, not made in steel works or rolling mills, 1; iron and steel forgings, 3; jewelry and instrument cases, 2; labels and tags, 1; lasts, 1; lead, bar, pipe, and sheet, 1; looking-glass and picture frames, 5; malt, 3; mineral and soda waters, 14; mirrors, 2; mucilage and paste, 3; musical instruments and materials, not specified, 3; oil, cottonseed, and cake, 1; oil, not elsewhere specified, 4; oleomargarine, 1; optical goods, 5; paper patterns, 5; pens, fountain, stylographic, and gold, 2; photo-engraving, 6; pulp goods, 1; pumps, not including steam pumps, 2; roofing materials, 3; saws, 2; scales and balances, 2; shipbuilding, including boat building, 3; shoddy, 1; signs and advertising novelties, 5; silverware and plated ware, 4; smelting and refining, not from the ore, 2; sporting and athletic goods, 1; springs, steel, car and carriage, 1; stationary goods, not elsewhere specified, 1; statuary and art goods, 4; stereotyping and electrotyping, 5; surgical appliances and artificial limbs, 8; toys and games, 3; type foundry and printing materials, 4; umbrellas and canes, 3; upholstering materials, 2; vinegar and cider, 1; washing machines and clothes wringers, 4; waste, 1; window shades and fixtures, 3; wirework, including wire rope and cable, 9; wood, turned and carved, 8; wool pulling, 1.

CLEVELAND.

1	\$227,397,484	\$245,390,440	\$6,970,282	\$8,535,567	\$48,052,971	\$8,019,953	\$140,895,070	\$1,092,362	\$2,701,598	\$2,074,081	\$21,048,556	\$271,960,833	\$117,045,810
2	164,802	204,828	11,255	4,520	75,984	3,599	88,367	4,434	575	16,094	232,784	140,818	
3	16,600,162	18,034,495	374,883	500,698	4,022,846	125,531	10,291,503	17,569	76,636	57,989	2,566,950	21,403,026	10,985,892
4	230,575	279,914	26,260	9,630	28,554	2,630	150,531	4,282	737	51,445	355,069	196,033	
5	466,861	857,859	29,159	55,282	225,339	8,338	501,167	8,755	1,756	28,063	651,470	441,965	
6	57,302	74,971	5,697	560	18,929	1,058	41,534	1,800	733	4,660	96,885	54,293	
7	823,648	1,070,281	39,127	28,412	265,692	12,572	614,414	16,590	4,700	88,828	1,140,581	513,695	
8	2,736,760	2,216,900	87,035	33,828	518,327	37,216	1,325,176	10,079	14,042	5,300	184,387	2,567,768	1,205,376
9	2,600,924	4,276,576	65,659	246,171	804,436	76,780	2,646,569	46,779	20,225	370,957	4,730,640	2,008,300	
10	960,836	608,999	35,060	7,533	285,688	195,283	17,223	200	5,731	62,231	769,218	556,712	
11	429,253	378,833	16,880	7,822	181,601	7,525	134,837	6,600	3,643	1,180	19,245	462,146	320,284
12	1,074,883	2,055,672	45,996	52,764	843,330	29,460	1,047,211	8,545	28,366	2,055,672	979,001		
13	1,571,754	1,593,932	72,798	67,783	307,084	86,291	891,950	2,091	21,282	144,653	1,865,957	887,716	
14	3,318,688	5,394,031	104,806	268,699	1,095,644	23,509	3,179,261	65,696	13,822	335,989	5,953,321	2,750,551	
15	4,940,533	11,837,165	391,811	734,652	2,903,174	50,425	6,446,062	122,314	16,053	275,642	897,232	12,788,775	6,292,288
16	1,294,403	2,284,974	65,314	84,337	253,380	13,457	1,539,661	24,842	7,178	296,365	2,851,927	1,298,809	
17	500,289	688,784	25,281	10,220	136,266	2,748	467,753	4,034	6,758	35,724	708,106	237,605	
18	4,781,532	2,680,118	111,679	70,868	639,659	57,779	1,570,122	12,347	14,783	21,350	181,631	2,066,476	1,338,575
19	4,007,006	2,070,762	72,180	155,657	759,362	38,180	626,552	5,888	18,724	15	394,204	2,395,562	1,730,704
20	3,306,386	3,482,087	159,476	180,536	780,159	65,788	1,714,279	42,911	18,536	3,200	531,202	4,035,808	2,255,741
21	41,609,539	32,828,725	1,582,480	1,551,933	10,484,895	760,474	14,563,335	117,641	296,683	83,984	3,387,900	37,443,030	22,119,230
22	660,051	916,670	30,730	41,935	288,072	10,433	480,800	25,094	4,307	35,799	1,068,551	577,809	
23	313,359	603,178	32,507	63,988	192,863	7,535	221,240	11,664	1,322	72,050	663,709	424,934	
24	99,620	180,919	8,830	17,618	42,921	936	101,539	4,022	210	296	4,547	198,548	96,073
25	1,894,348	2,709,814	103,080	81,667	484,818	15,100	1,797,709	34,250	5,281	27,884	160,515	2,957,248	1,144,439
26	2,148,856	272,808	20,390	4,882	84,932	81,900	21,409	8,520	20,497	29,978	367,612	264,803	

TABLE III.—DETAIL STATEMENT FOR CITIES OF 50,000 INHABITANTS OR MORE, BY INDUSTRIES, AND CITIES OF 50,000 INHABITANTS OR MORE, BY INDUSTRIES—Continued.
CLEVELAND—Continued.

INDUSTRY.	Number of establishments	PERSONS ENGAGED IN INDUSTRY.										WAGE EARNERS—NUMBER DEC. 15, OR NEAREST REPRESENTATIVE DAY.					Pri- mary horse- power.
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks.		Wage earners (average number).			Total.	16 and over		Under 16.				
					Male.	Female.	Total.	16 and over.			Under 16.	Male.	Female.	Male.	Female.		
								Male.	Female.								
27 Iron and steel, steel works and rolling mills.	14	8,278	2	158	509	71	7,538	7,248	287	3	8,218	7,902	313	3	60,675		
28 Jewelry.	15	124	12	7	1	2	102	93	1	8	104	95	1	8	84		
29 Leather goods.	14	153	10	7	6	5	125	107	18		135	116	19		84		
30 Leather, tanned, curried, and finished.	4	124	1	11	3	1	108	108			128	128			422		
31 Liquors, distilled.	4	6	5				1	1			2	2			14		
32 Liquors, malt.	11	904	5	43	106	6	744	743	1		718	717	1		3,395		
33 Liquors, vinous.	4	54	3	5	18		28	28			35	35			23		
34 Lumber and timber products.	51	1,310	22	68	64	18	1,147	1,147			1,233	1,233			5,263		
35 Marble and stone work.	18	367	19	19	9	5	315	315			359	359			789		
36 Mattresses and spring beds.	6	173	4	6			150	101	48	1	154	104	40	1	178		
37 Millinery and lace goods.	6	536	4	16	30	14	472	121	336	15	507	130	361	16	143		
38 Models and patterns, not including paper patterns.	21	220	23	11	1	4	190	173	3	14	207	189	3	15	213		
39 Musical instruments, pianos and organs and materials.	3	52		7	1	2	42	41	1		47	46			75		
40 Paint and varnish.	24	1,258	5	77	320	96	760	657	102	1	736	636	99	1	2,624		
41 Patent medicines and compounds and druggists' preparations.	50	322	56	29	67	45	125	66	58	1	146	77	68	1	66		
42 Photo-engraving.	3	84	1	11	7	7	58	58			61	61			23		
43 Printing and publishing.	245	4,671	171	319	783	294	3,104	2,521	518	65	3,247	2,637	543	51	3,828		
44 Slaughtering and meat packing.	85	1,336	28	51	159	22	1,076	1,075	1		1,074	1,073	1		2,670		
45 Soap.	6	57	2	6	7	1	41	38	3		42	39	3		143		
46 Stoves and furnaces, including gas and oil stoves.	20	2,097	7	46	177	24	1,843	1,828	8	7	2,075	2,059	9	7	1,899		
47 Tobacco manufactures.	254	2,234	277	35	47	9	1,866	709	1,155	2	1,961	745	1,214	1	29		
48 Umbrellas and canes.	5	98	5	5	16	3	69	21	48		66	20	46		12		
49 Wall plaster.	3	64		4	3	1	56	56			51	51			270		
50 All other industries ¹ .	356	21,081	241	574	1,494	396	18,376	15,234	2,738	404	19,662	16,303	2,922	214	223	63,443	

¹ All other industries embrace: Agricultural implements, 2; artificial flowers and feathers and plumes, 2; awnings, tents, and sails, 7; axle grease, 1; bags, other than paper, 2; bags, paper, 1; baking powders and yeast, 1; baskets, and rattan and willow ware, 3; belting and hose, leather, 2; belting and hose, woven and rubber, 2; bicycles, motorcycles, and parts, 3; brooms, 7; brushes, 6; butter, cheese, and condensed milk, 5; butter, reworking, 2; buttons, 2; canning and preserving, 4; carpets, rag, 5; cash registers and calculating machines, 1; clocks and watches, including cases and materials, 2; cloth, sponging and refinishing, 3; clothing, men's, button-holes, 3; coffee and spice, roasting and grinding, 2; coffins, burial cases, and undertakers' goods, 2; cordials and sirups, 3; corsets, 1; dairymen's, poultryers', and apiarists' supplies, 1; drug grinding, 1; dyeing and finishing textiles, 1; electroplating, 9; enameling and japanning, 1; engraving and diesinking, 1; engraving, wood, 1; fancy articles, not elsewhere specified, 2; fertilizers, 1; files, 2; flavoring extracts, 3; flour-mill and gristmill products, 3; food preparations, 17; foundry supplies, 4; fur goods, 8; furnishing goods, men's, 3; galvanizing, 2; gas, illuminating and heating, 3; glass, cutting, staining, and ornamenting, 13; glue, 1; grease and tallow, 2; hair work, 3; hand stamps and stencils and brands, 10; house-furnishing goods, not elsewhere specified, 2; instruments, professional and scientific, 5; iron and steel, blast furnaces, 4; iron and steel, bolts, nuts, washers, and rivets, not made in steel works or rolling mills, 10; iron and steel forgings, 10; iron and steel, nails and spikes, cut and wrought, including wire nails, not

COLUMBUS.

1 All industries.	586	20,523	435	902	2,158	600	16,428	13,137	3,146	145	17,911	14,280	3,465	137	29	35,780
2 Artificial stone.	5	36	4	5	2		25	25			26	26				38
3 Boots and shoes, including cut stock and findings.	8	2,791	4	47	214	47	2,479	1,423	1,049	7	2,725	1,565	1,151	6	3	845
4 Brass and bronze products.	5	53	5	2	2		44	43		1	42	41		1		55
5 Bread and other bakery products.	58	642	53	10	106	29	435	333	97	5	449	344	100	1	4	75
6 Brick and tile.	3	37	4	1			32	31		1	58	56		2		180
7 Carriages and wagons and materials.	14	483	17	29	26	4	407	332	25		398	345	23			477
8 Coffee and spice, roasting and grinding.	3	204		8	199	12	45	35	10		48	37	11			65
9 Copper, tin, and sheet-iron products.	6	173	4	8	16	5	140	140			153	153				93
10 Flour-mill and gristmill products.	4	32	6	5	1		20	20			21	21				816
11 Foundry and machine-shop products.	58	3,745	46	107	457	63	3,012	2,949	54	9	3,220	3,153	57	10		4,148
12 Furniture and refrigerators.	8	422	4	25	15	4	374	333	40	1	420	374	45	1		553
13 Gas and electric fixtures and lamps and reflectors.	9	373	4	12	14	9	334	164	170		360	177	183			263
14 Ice, manufactured.	5	183		11	11	3	158	158			126	126				1,784
15 Leather goods.	11	200	13	12	41	6	128	105	21	2	122	100	20	1	1	127
16 Liquors, malt.	4	561		28	54	6	473	473			462	462				3,045
17 Lumber and timber products.	27	530	20	32	38	6	434	433		1	470	469		1		1,803
18 Marble and stone work.	6	90	5	7	8		70	70			77	77				445
19 Models and patterns, not including paper patterns.	8	49	10	2	1	2	34	34			42	42				63
20 Paint and varnish.	5	119	1	15	33	15	55	49	6		53	47	6			141
21 Patent medicines and compounds and druggists' preparations.	13	281	11	16	56	53	140	88	52		118	75	43			285
22 Printing and publishing.	91	1,433	71	91	263	107	901	678	211	12	944	711	221	8	4	379
23 Slaughtering and meat packing.	6	108	5	5	22	4	130	129	1		133	132	1			365
24 Stoves and furnaces, including gas and oil stoves.	10	360	4	23	28	11	294	288	6		320	314	6			377
25 Tobacco manufactures.	35	278	37	10	7	1	223	54	166	3	247	60	184	3		141
26 All other industries ¹ .	184	7,222	107	322	544	208	6,041	4,700	1,238	103	6,907	5,373	1,414	103	17	18,900

¹ All other industries embrace: Agricultural implements, 2; automobiles, including bodies and parts, 7; awnings, tents, and sails, 2; axle grease, 1; babbit metal and solder, 1; baking powders and yeast, 1; baskets, and rattan and willow ware, 1; blacking and cleansing and polishing preparations, 1; boxes, cigar, 1; boxes, fancy and paper, 2; brooms, 9; butter, cheese, and condensed milk, 2; canning and preserving, 1; carpets and rugs, other than rag, 1; cash registers and calculating machines, 1; chemicals, 1; clothing, men's, including shirts, 3; clothing, women's, 1; coffins, burial cases, and undertakers' goods, 4; confectionery, 7; cooperage and wooden goods, not elsewhere specified, 2; corsets, 1; cutlery and tools, not elsewhere specified, 3; dentists' materials, 1; dyeing and finishing textiles, 1; electrical machinery, apparatus, and supplies, 2; electroplating, 3; fertilizers, 1; files, 1; flags, banners, regalia, society badges, and emblems, 3; flavoring extracts, 2; food preparations, 6; fur goods, 1; furnishing goods, men's, 4; gas, illuminating and heating, 2; glass, 1; glass, cutting, staining, and ornamenting, 3; gloves and mittens, leather, 2; glucose and starch, 1; hair work, 1; hand stamps and stencils and brands, 1; hats and caps, other than felt, straw, and wool, 2; house-furnishing goods, not elsewhere specified, 1; instruments, professional

MANUFACTURES—OHIO.

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TOTALS FOR ALL INDUSTRIES IN CITIES OF 10,000 BUT LESS THAN 50,000 INHABITANTS: 1909—Continued.

CITIES OF 50,000 INHABITANTS OR MORE, BY INDUSTRIES—Continued.

CLEVELAND—Continued.

Capital.	EXPENSES.										Value of products.	Value added by manufacture.	
	Total.	Services.			Materials.		Miscellaneous.						
		Officials.	Clerks.	Wage earners.	Fuel and rent of power.	Other.	Rent of factory.	Taxes, including internal revenue.	Contract work.	Other.			
27 \$25,086,577	\$35,672,010	\$342,794	\$505,773	\$5,140,604	\$1,340,590	\$26,689,426	.....	\$137,475	\$22,356	\$1,475,802	\$38,463,316	\$10,424,300	
28 114,827	152,008	9,792	1,800	65,973	1,462	60,558	.....	387	.....	5,583	207,897	145,877	
29 154,162	247,992	10,000	0,706	67,737	2,345	131,121	.....	1,042	.....	20,885	270,637	137,071	
30 385,757	592,158	14,750	3,420	69,155	7,886	460,296	.....	600	.....	33,782	636,153	167,991	
31 4,140	11,394	.....	.....	556	154	5,401	.....	60	.....	4,835	14,341	8,786	
32 9,887,715	4,297,248	222,600	135,255	593,579	113,778	1,370,365	.....	240	1,045,746	66,300	749,295	5,124,478	3,640,335
33 194,150	195,410	7,600	10,500	17,450	996	134,550	.....	732	.....	.....	20,822	206,090	70,514
34 2,380,082	3,834,222	106,169	66,211	698,767	27,772	2,704,637	.....	42,420	16,146	6,240	165,860	4,021,326	1,238,917
35 408,809	445,763	23,477	10,778	191,655	8,421	188,623	.....	1,908	.....	.....	17,625	467,892	270,848
36 205,664	332,977	10,620	7,403	70,824	3,683	203,920	.....	5,904	.....	3,177	25,807	365,067	157,459
37 458,565	1,033,104	46,464	36,750	189,979	6,276	720,185	.....	9,570	.....	1,704	22,176	1,206,250	479,789
38 94,584	206,320	14,460	3,195	123,124	2,884	47,835	.....	6,995	.....	364	7,463	251,264	200,545
39 125,623	88,834	7,870	5,130	31,869	886	23,342	.....	1,600	.....	.....	11,071	93,059	63,831
40 5,393,450	5,894,987	269,314	435,134	468,471	39,685	3,849,293	.....	11,917	.....	.....	783,465	6,138,466	2,249,488
41 429,277	855,813	44,996	78,735	62,188	3,171	312,769	.....	15,246	.....	348	335,361	1,010,113	694,173
42 47,966	132,040	20,071	8,936	49,708	2,000	34,401	.....	2,820	.....	.....	13,911	143,674	107,183
43 6,944,331	8,378,501	657,426	847,365	2,008,507	81,832	2,698,240	.....	167,017	43,053	429,482	1,445,579	9,634,683	6,854,611
44 3,555,435	16,736,382	109,897	152,638	599,489	73,334	15,325,328	.....	5,890	.....	1,700	445,447	17,192,048	1,793,386
45 108,122	204,926	7,600	8,890	26,445	6,708	142,760	.....	1,056	.....	.....	11,108	213,681	65,213
46 4,002,590	4,411,744	103,101	178,025	1,155,072	43,068	2,243,138	.....	6,988	.....	23,193	76,000	4,977,096	2,600,890
47 926,161	2,476,999	70,509	64,867	734,229	5,661	1,040,843	.....	32,691	.....	.....	300,643	2,709,129	1,722,025
48 114,079	219,210	9,614	16,895	25,459	934	142,548	.....	2,949	.....	.....	449	209,662	110,167
49 111,600	186,351	7,088	4,469	31,528	2,913	120,427	.....	5,668	.....	.....	1,317	8,334	81,251
50 69,486,304	61,161,053	1,339,107	1,658,457	9,917,648	4,521,617	37,755,851	.....	157,188	.....	466,496	651,504	67,075,982	24,798,514

made in steel works or rolling mills, 2; labels and tags, 1; lead, bar, pipe, and sheet, 1; looking-glass and picture frames, 3; malt, 1; mineral and soda waters, 25; mirrors, 1; muclilage and paste, 2; musical instruments and materials, not specified, 2; needles, pins, and hooks and eyes, 1; oil, linseed, 1; oil, not elsewhere specified, 10; optical goods, 7; paper and wood pulp, 2; paper goods, not elsewhere specified, 3; paving materials, 1; pens, fountain, stylographic, and gold, 1; petroleum, refining, 2; photographic apparatus and materials, 1; pottery, terra-cotta, and fire-clay products, 3; pumps, not including steam pumps, 2; rubber goods, not elsewhere specified, 2; rules, ivory and wood, 1; safes and vaults, 1; salt, 1; screws, machine, 1; sewing machines, cases, and attachments, 3; shipbuilding, including boat building, 4; shoddy, 3; show cases, 3; signs and advertising novelties, 3; silverware and plated ware, 1; smelting and refining, not from the ore, 2; soda-water apparatus, 1; sporting and athletic goods, 1; springs, steel, car and carriage, 2; stationary goods, not elsewhere specified, 2; statuary and art goods, 3; stereotyping and electrotyping, 3; surgical appliances and artificial limbs, 5; tin plate and terneplate, 1; toys and games, 3; type founding and printing materials, 1; typewriters and supplies, 4; vinegar and cider, 2; wall paper, 1; washing machines and clothes wringers, 1; window shades and fixtures, 2; wire, 1; wirework, including wire rope and cable, 17; wood, turned and carved, 4; woolen, worsted, and felt goods, and wool hats, 3.

COLUMBUS.

1	\$48,747,055	\$44,139,253	\$1,659,387	\$2,122,453	\$8,892,420	\$899,561	\$24,304,249	\$262,778	\$787,396	\$328,909	\$4,863,100	\$49,031,872	\$23,828,062
2	37,820	49,511	3,880	720	16,588	544	22,795	560	506	2,500	1,418	56,719	33,380
3	3,181,006	4,984,078	106,633	281,227	1,075,993	20,560	3,203,427	10,382	18,526	.....	269,330	5,436,709	2,211,722
4	76,216	107,112	5,200	1,800	27,978	1,498	63,760	880	588	.....	5,928	123,656	56,398
5	1,607,788	1,588,102	46,861	98,930	222,112	29,140	1,062,497	8,853	8,887	.....	111,822	1,765,227	673,590
6	28,307	21,580	980	.....	13,890	5,095	115	280	216	.....	1,054	35,400	80,190
7	713,901	983,053	52,281	27,384	216,721	5,616	599,839	3,600	5,592	.....	72,020	1,077,805	472,350
8	198,045	548,718	18,615	123,168	19,229	867	328,262	1,400	1,650	.....	55,617	604,054	274,925
9	250,573	589,217	14,900	18,634	70,583	1,531	470,757	3,780	1,925	.....	7,204	700,099	227,811
10	239,150	363,558	7,200	614	15,168	3,817	292,709	500	4,539	.....	38,950	384,213	87,696
11	9,666,325	7,177,732	346,126	389,172	1,840,900	110,564	3,354,054	15,193	64,990	50,590	1,005,583	7,743,744	4,278,528
12	487,055	712,368	34,152	27,184	188,660	6,680	398,138	6,015	3,633	.....	724	47,176	342,107
13	572,918	602,992	21,059	16,897	141,222	3,911	367,071	4,134	1,548	.....	1,316	45,834	399,233
14	675,789	208,165	11,920	9,227	90,806	38,175	29,373	168	4,308	.....	.....	24,190	252,888
15	533,982	534,516	19,544	23,854	74,012	3,324	349,564	10,640	5,889	.....	.....	48,189	560,213
16	10,633,893	2,475,244	89,233	59,693	371,403	70,814	547,861	.....	428,517	.....	.....	910,783	2,728,143
17	635,895	1,172,117	52,561	32,504	268,934	9,608	747,931	9,098	7,216	.....	5,940	42,425	1,239,540
18	230,113	137,757	7,220	5,049	47,293	3,488	71,139	1,500	1,175	.....	.....	923	168,928
19	48,374	41,532	2,000	1,250	22,761	461	10,247	1,104	204	.....	.....	3,455	70,059
20	413,480	517,942	34,800	33,214	27,826	3,512	342,135	1,656	5,780	.....	.....	69,519	601,623
21	730,445	827,206	30,351	64,717	61,043	3,390	236,760	6,326	9,654	.....	.....	416,995	946,406
22	1,823,120	2,179,101	151,461	205,966	591,661	25,007	663,612	68,663	9,650	.....	134,124	2,660,202	1,971,583
23	636,469	2,104,319	7,200	22,220	101,292	15,284	1,948,516	.....	2,393	.....	360	2,354,447	390,447
24	707,124	674,013	39,880	24,805	173,089	0,081	304,316	3,396	5,406	.....	15,149	101,891	411,957
25	150,152	398,297	10,220	10,734	81,203	650	154,401	4,681	99,180	.....	21,692	10,536	281,105
26	14,123,115	16,086,023	549,610	583,020	3,137,080	529,908	8,735,379	90,519	96,066	.....	96,504	1,267,277	7,581,794

and scientific, 2; iron and steel, blast furnaces, 1; iron and steel, steel works and rolling mills, 2; iron and steel, bolts, nuts, washers, and rivets, not made in steel works or rolling mills, 3; iron and steel forgings, 3; jewelry, 1; leather, tanned, curried, and finished, 2; looking-glass and picture frames, 1; mattresses and spring beds, 2; millinery and lace goods, 5; mineral and soda waters, 3; mirrors, 1; muclilage and paste, 3; musical instruments and materials, not specified, 1; musical instruments, pianos and organs and materials, 1; oil, not elsewhere specified, 1; oilcloth and linoleum, 1; oleomargarine, 1; optical goods, 2; paper goods, not elsewhere specified, 2; photographic apparatus and materials, 2; photo-engraving, 2; pumps, not including steam pumps, 2; roofing materials, 1; saws, 2; show cases, 4; signs and advertising novelties, 2; soap, 5; stationary goods, not elsewhere specified, 2; stereotyping and electrotyping, 3; surgical appliances and artificial limbs, 2; umbrellas and canes, 1; wall plaster, 3; washing machines and clothes wringers, 3; window shades and fixtures, 1; wirework, including wire rope and cable, 6; wood, turned and carved, 2; woolen, worsted, and felt goods, and wool hats, 1.

TABLE III.—DETAIL STATEMENT FOR CITIES OF 50,000 INHABITANTS OR MORE, BY INDUSTRIES, AND CITIES OF 50,000 INHABITANTS OR MORE, BY INDUSTRIES—Continued.

DAYTON.

INDUSTRY.	Number of establishments	PERSONS ENGAGED IN INDUSTRY.										WAGE EARNERS—NUMBER DEC. 15, OR NEAREST REPRESENTATIVE DAY.					Primary horse-power.
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks.		Wage earners (average number).			Total.	16 and over.		Under 10.				
					Male.	Female.	Total.	Male.	Female.		Under 10.	Male.	Female.	Male.	Female.		
																16 and over.	
1 All industries.....	513	24,740	418	880	1,528	387	21,549	17,876	3,572	101	23,605	19,611	3,882	40	72	31,501	
2 Boxes, cigar.....	3	97	4	2	4	1	86	25	51	10	95	28	56	4	7	353	
3 Boxes, fancy and paper.....	5	594	7	19	21	14	540	189	336	15	504	198	351	4	15	376	
4 Brass and bronze products.....	7	246	7	12	15	2	210	208	2	.....	254	251	3	.....	340
5 Bread and other bakery products.....	65	519	74	12	62	21	350	257	91	2	384	282	100	2	401	
6 Brick and tile.....	4	31	5	1	.....	.....	25	25	.....	.....	42	42	.....	.....	165
7 Carriages and wagons and materials.....	17	425	18	20	11	2	374	371	3	.....	377	374	3	.....	697
8 Clothing, men's, including shirts.....	4	237	4	9	22	6	196	11	174	11	211	12	187	.....	125	
9 Coffee and spice, roasting and grinding.....	5	271	3	14	94	24	136	52	84	.....	138	53	85	.....	304
10 Confectionery.....	11	176	12	4	9	9	142	46	80	16	182	59	102	.....	50	
11 Copper, tin, and sheet-iron products.....	11	98	14	5	5	11	63	63	.....	.....	69	69	.....	.....	50
12 Cutlery and tools, not elsewhere specified.....	4	50	2	3	1	4	40	40	.....	.....	51	51	.....	.....	50
13 Electrical machinery, apparatus, and supplies.....	7	134	3	12	5	10	104	97	7	.....	107	100	7	.....	334
14 Flour-mill and gristmill products.....	6	65	8	6	8	2	41	41	.....	.....	40	40	.....	.....	334
15 Foundry and machine-shop products.....	69	4,130	34	170	294	53	3,585	3,474	104	7	4,130	4,000	121	3	6	5,676	
16 Furniture and refrigerators.....	10	491	5	30	24	9	423	410	7	6	450	437	7	6	795	
17 Liquors, malt.....	3	275	.....	21	30	3	221	221	.....	.....	193	193	.....	.....	2,365
18 Lumber and timber products.....	11	580	9	24	28	7	512	511	1	561	550	1	1,650	
19 Marble and stone work.....	6	52	9	.....	2	.....	41	41	.....	.....	44	44	.....	.....	80
20 Mattresses and spring beds.....	3	14	4	.....	.....	.....	10	8	2	.....	10	8	2	.....	100
21 Models and patterns, not including paper patterns.....	5	38	7	.....	.....	.....	31	31	.....	.....	32	32	.....	.....	44
22 Patent medicines and compounds and druggists' preparations.....	11	86	7	16	13	7	43	25	18	.....	26	15	11	.....	35
23 Printing and publishing.....	45	937	39	55	153	60	630	498	128	4	636	542	140	4	1,078	
24 Slaughtering and meat packing.....	10	299	8	11	35	.....	245	245	.....	.....	247	247	.....	.....	484
25 Soap.....	6	228	3	21	57	8	139	97	37	5	141	98	38	5	232	
26 Tobacco manufactures.....	56	1,544	56	32	23	5	1,428	173	1,255	.....	1,500	139	1,371	.....	52
27 All other industries.....	129	13,117	81	361	612	129	11,934	10,717	1,193	24	13,011	11,087	1,298	15	11	15,368	

¹ All other industries embrace: Agricultural implements, 2; artificial stone, 7; automobiles, including bodies and parts, 6; awnings, tents, and sails, 2; baskets, and rattan and willow ware, 2; blacking and cleansing and polishing preparations, 1; brooms, 1; butter, cheese, and condensed milk, 1; buttons, 1; canning and preserving, 2; carpets, rag, 1; cars and general shop construction and repairs by steam-railroad companies, 1; cars and general shop construction and repairs by street-railroad companies, 2; cars, steam-railroad, not including operations of railroad companies, 1; cash registers and calculating machines, 3; cooperage and wooden goods, not elsewhere specified, 2; electroplating, 1; emery and other abrasive wheels, 1; fertilizers, 1; files, 1; flavoring extracts, 3; fur goods, 1; furnishing goods, men's, 2; gas and electric fixtures and lamps and reflectors, 1; gas, illuminating and heating, 1; glass, cutting, staining, and ornamenting, 2; grease and tallow, 1; hand stamps and stenosis and brands, 2; house-furnishing goods, not elsewhere specified, 1; ice, manufactured, 2; instruments, professional and scientific, 2; iron and steel, steel works and rolling mills, 1; jewelry, 2;

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1 All industries.....	760	22,900	665	854	1,897	608	18,878	15,279	3,327	272	22,381	18,148	3,893	168	172	43,946
2 Boxes, fancy and paper.....	5	111	2	8	3	1	97	34	62	1	99	35	63	1	78
3 Brass and bronze products.....	6	35	10	2	.....	1	22	20	2	.....	23	21	2	.....	68
4 Bread and other bakery products.....	88	633	96	12	35	22	468	388	126	4	480	347	129	2	2	314
5 Brick and tile.....	8	191	2	10	5	2	172	164	8	194	185	0	675
6 Carriages and wagons and materials.....	16	602	11	33	26	13	514	512	2	.....	448	445	2	.....	1,283
7 Cars and general shop construction and repairs by steam-railroad companies.....	4	1,330	28	103	1	1,198	1,198	1,140	1,140	635
8 Clothing, women's.....	13	1,282	16	20	81	15	1,150	293	826	26	1,242	322	892	28	155
9 Confectionery.....	12	197	14	8	22	7	146	39	101	6	197	53	136	8	105
10 Cooperage and wooden goods, not elsewhere specified.....	10	134	10	2	4	2	116	107	9	.....	135	125	10	.....	145
11 Copper, tin, and sheet-iron products.....	37	675	37	24	41	26	547	407	139	1	648	482	165	1	265
12 Electrical machinery, apparatus, and supplies.....	7	483	1	19	37	10	416	158	258	.....	413	157	256	.....	248
13 Flour-mill and gristmill products.....	7	257	3	18	27	5	204	204	.....	.....	224	224	.....	.....	3,510
14 Foundry and machine-shop products.....	75	3,768	50	172	297	58	3,191	3,166	22	3	3,809	3,780	26	3	6,831
15 Furniture and refrigerators.....	23	674	18	29	30	17	580	552	14	14	625	597	14	14	834
16 Leather goods.....	4	104	3	4	7	2	88	75	13	.....	88	75	13	.....	36
17 Liquors, malt.....	4	365	.....	16	34	3	312	311	1	.....	314	313	1	.....	1,631
18 Lumber and timber products.....	28	689	21	33	37	8	585	584	1	.....	609	608	1	.....	2,490
19 Marble and stone work.....	6	89	5	9	9	4	62	61	1	.....	68	67	1	.....	142
20 Models and patterns, not including paper patterns.....	7	26	10	.....	.....	.....	16	16	.....	.....	18	18	.....	.....	29
21 Paint and varnish.....	5	61	4	7	13	3	34	30	4	.....	32	28	4	.....	150
22 Patent medicines and compounds and druggists' preparations.....	51	169	50	12	22	0	76	42	31	3	78	43	32	3	154
23 Petroleum, refining.....	3	331	.....	16	41	4	270	270	.....	.....	294	294	.....	.....	540
24 Printing and publishing.....	72	1,219	60	85	238	73	763	684	163	16	807	618	172	14	3	886
25 Slaughtering and meat packing.....	11	40	10	.....	1	2	27	27	.....	.....	27	27	.....	.....	60
26 Tobacco manufactures.....	48	593	51	7	44	5	486	152	334	.....	500	166	344	.....	395
27 Wall plaster.....	6	66	.....	13	5	3	45	45	.....	.....	38	38	.....	.....	380
28 All other industries.....	204	8,776	181	257	735	210	7,293	5,885	1,218	190	9,771	7,889	1,630	121	131	21,487

¹ All other industries embrace: Artificial stone, 10; automobiles, including bodies and parts, 5; awnings, tents, and sails, 3; bags, paper, 1; belting and hose, leather, 2; bicycles, motorcycles, and parts, 1; billiard tables and materials, 2; blacking and cleansing and polishing preparations, 5; bluing, 1; boxes, cigar, 2; brooms, 4; brushes, 4; butter, reworking, 1; canning and preserving, 1; carpets, rag, 4; carriages and sleds, children's, 3; cars and general shop construction and repairs by street-railroad companies, 1; chemicals, 1; clothing, men's, including shirts, 8; coffee and spice, roasting and grinding, 6; cordage and twine and jute and linen goods, 1; corsets, 2; cutlery and tools, not elsewhere specified, 3; dairymen's, poultrymen's, and apiarists' supplies, 2; dyeing and finishing textiles, 1; electroplating, 2; engraving, wood, 1; fancy articles, not elsewhere specified, 2; firearms and ammunition, 1; fire extinguishers, chemical, 1; flavoring extracts, 4; food preparations, 4; fur goods, 4; furnishing goods, leather, 1; gas and electric fixtures and lamps and reflectors, 3; gas, illuminating and heating, 2; glass, 2; glass, cutting, staining, and ornamenting, 3; gloves and mittens, leather, 1; grease and tallow, 1; hand stamps and stenosis and brands, 3; hats and caps, other than felt, straw, and wool, 2; hosiery and knit goods, 3; house-furnishing goods, not

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TOTALS FOR ALL INDUSTRIES IN CITIES OF 10,000 BUT LESS THAN 50,000 INHABITANTS: 1909—Continued.
CITIES OF 50,000 INHABITANTS OR MORE, BY INDUSTRIES—Continued.

DAYTON.

	Capital.	EXPENSES.										Value of products.	Value added by manufacture.
		Total.	Services.			Materials.		Miscellaneous.					
			Officials.	Clerks.	Wage earners.	Fuel and rent of power.	Other.	Rent of factory.	Taxes, including internal revenue.	Contract work.	Other.		
1	\$61,315,917	\$53,591,808	\$2,051,115	\$1,520,806	\$12,450,608	\$717,382	\$26,810,436	\$205,288	\$678,288	\$68,214	\$9,089,671	\$60,378,376	\$32,850,558
2	74,966	80,201	1,560	3,420	22,749	913	45,669	1,200	386	.....	4,304	85,168	38,586
3	880,903	836,866	42,656	22,626	195,515	6,092	479,585	5,765	5,415	.....	79,212	981,871	448,194
4	493,762	447,956	20,250	21,249	145,048	7,464	205,803	1,345	4,476	.....	36,201	480,630	267,308
5	719,288	1,277,480	23,600	62,152	187,007	24,555	924,478	13,166	7,300	.....	35,222	1,531,019	581,986
6	27,300	17,778	810	.....	10,565	3,975	450	.....	153	.....	1,825	25,950	21,525
7	676,691	682,064	39,186	12,586	202,792	9,717	337,471	6,542	5,028	.....	68,742	801,068	454,780
8	211,365	331,907	7,890	18,472	18,472	1,578	207,819	2,725	1,496	.....	20,655	353,607	144,210
9	1,164,519	2,022,984	46,900	98,112	72,864	7,643	1,599,165	5,380	5,831	.....	188,909	2,244,959	688,151
10	104,462	280,918	4,100	7,000	51,224	3,420	192,956	6,590	781	3,850	10,997	339,239	142,883
11	77,407	148,739	3,398	1,660	44,207	640	87,357	2,604	1,052	.....	7,812	177,869	89,883
12	51,310	44,771	4,200	2,350	21,385	1,105	6,219	600	531	.....	8,381	61,940	54,616
13	231,702	191,503	19,920	8,609	48,629	3,622	86,235	3,408	511	500	20,169	234,969	145,212
14	265,965	621,588	16,500	8,934	27,889	5,210	542,447	360	2,876	.....	17,372	668,541	120,884
15	9,530,933	6,080,801	308,360	274,626	2,033,269	154,092	2,646,397	33,734	45,493	8,554	576,286	6,777,823	3,977,334
16	1,086,619	661,712	36,748	24,047	200,125	10,725	276,451	3,172	4,749	1,349	103,446	743,740	456,564
17	5,749,904	888,941	50,353	37,987	148,418	51,231	209,696	1,274	194,607	.....	195,375	1,218,394	657,467
18	1,107,551	1,338,104	41,696	27,759	324,561	11,307	866,485	1,840	5,396	8,753	50,307	1,417,044	539,252
19	59,335	83,722	.....	3,436	32,797	734	38,340	1,455	190	1,500	5,270	94,620	55,546
20	18,700	34,675	.....	.....	7,780	352	23,984	600	188	.....	1,771	41,248	16,912
21	9,635	26,324	.....	.....	19,656	40	5,200	1,244	35	.....	149	35,200	29,960
22	101,441	144,620	32,669	14,646	10,191	816	50,388	4,076	367	.....	31,467	183,371	132,167
23	1,198,108	1,258,852	125,096	129,960	385,701	17,484	422,083	20,747	8,630	34,396	114,755	1,552,151	1,112,584
24	1,048,287	2,925,251	14,808	36,968	145,216	20,309	2,615,466	.....	3,809	.....	88,675	3,170,916	535,141
25	1,076,916	1,082,018	41,188	60,187	51,275	8,246	762,581	1,200	5,631	.....	161,810	1,905,738	534,911
26	699,909	1,770,479	40,455	32,775	486,916	2,881	828,447	14,785	211,519	.....	162,701	1,892,629	1,061,201
27	34,649,789	30,311,554	1,124,582	610,345	7,503,577	363,322	13,349,204	71,476	161,938	9,312	7,117,798	34,007,872	20,295,346

labels and tags, 2; lasts, 1; leather goods, 3; millinery and lace goods, 2; mineral and soda waters, 4; mirrors, 1; mucilage and paste, 2; musical instruments, pianos and organs and materials, 1; paint and varnish, 6; paper and wood pulp, 2; paper goods, not elsewhere specified, 2; peanuts, grading, roasting, cleaning, and shelling, 1; pottery, terra-cotta, and fire-clay products, 1; pulp goods, 1; pumps, not including steam pumps, 1; roofing materials, 1; rubber goods, not elsewhere specified, 2; saws, 1; scales and balances, 2; screws, machine, 1; screws, wood, 1; sewing machines, cases, and attachments, 1; signs and advertising novelties, 2; stationery goods, not elsewhere specified, 3; stoves and furnaces, including gas and oil stoves, 4; toys and games, 2; umbrellas and canes, 1; upholstering materials, 1; vault lights and ventilators, 1; wall plaster, 2; washing machines and clothes wringers, 2; wirework, including wire rope and cable, 2; wood, turned and carved, 2.

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1	\$58,318,902	\$54,560,292	\$1,638,366	\$1,993,243	\$9,910,729	\$1,748,786	\$32,334,801	\$295,283	\$1,118,429	\$278,056	\$5,245,599	\$61,229,542	\$27,145,955
2	85,660	103,975	8,633	3,600	25,630	1,530	56,859	2,580	201	.....	5,042	103,097	44,708
3	43,033	47,302	1,660	520	12,623	1,618	26,639	780	404	757	2,291	52,218	23,911
4	693,393	1,444,709	21,080	43,419	260,222	40,479	918,253	19,993	5,112	35	136,116	1,597,955	639,223
5	232,536	152,867	10,460	3,830	80,213	38,527	1,918	1,650	2,524	1,000	17,745	177,088	141,643
6	2,369,889	1,066,678	61,752	42,883	257,048	38,621	590,255	6,115	13,848	.....	75,956	1,317,140	708,064
7	533,701	1,427,301	31,080	84,066	633,646	17,813	656,616	.....	2,580	.....	1,500	1,427,302	752,878
8	788,049	2,165,428	54,320	122,088	491,731	7,941	1,867,509	26,225	2,291	.....	93,323	2,323,418	947,968
9	119,095	343,062	13,060	18,906	60,639	4,068	230,549	6,212	473	3	19,122	410,786	176,139
10	132,082	171,848	3,200	3,200	52,405	2,073	103,972	423	929	.....	5,640	184,962	88,917
11	3,556,574	1,153,753	44,856	40,858	282,356	10,772	638,534	8,616	5,034	50	122,947	1,303,243	653,937
12	721,745	635,040	27,283	27,840	168,311	7,494	281,519	2,689	3,243	.....	116,601	932,223	643,210
13	2,484,964	5,315,759	53,685	30,305	140,470	30,953	4,900,076	.....	10,728	.....	149,542	5,662,191	731,162
14	8,955,532	6,462,587	285,430	335,739	1,904,954	155,575	3,005,491	30,937	52,850	16,996	674,615	7,029,984	3,862,918
15	1,069,131	1,048,507	51,794	34,272	302,645	13,165	531,863	12,053	9,294	22,409	71,012	1,128,257	533,229
16	78,875	185,153	4,400	6,225	34,640	1,079	76,428	1,184	692	.....	10,505	189,128	61,621
17	7,107,725	1,529,989	49,698	41,976	250,031	42,356	409,499	.....	349,770	.....	386,759	1,887,344	1,435,489
18	1,432,732	1,615,155	61,525	34,203	286,360	9,499	1,101,839	13,439	12,042	6,000	90,248	1,792,802	681,494
19	187,516	179,465	13,000	8,790	42,775	1,702	105,839	310	818	.....	6,231	216,658	109,117
20	15,010	15,368	.....	.....	8,600	423	4,785	1,063	71	.....	426	23,622	18,414
21	271,268	230,435	9,960	11,692	19,651	2,684	155,550	2,440	662	.....	27,796	252,194	93,960
22	311,670	393,019	19,609	23,027	36,034	2,515	146,242	8,189	1,369	588	155,476	539,822	391,065
23	2,636,194	2,252,287	62,750	40,450	166,551	150,434	1,694,687	.....	13,608	.....	133,807	2,431,170	589,049
24	1,550,679	1,717,993	152,241	200,524	480,148	23,987	499,407	43,682	6,615	27,116	284,293	2,004,334	1,480,940
25	68,200	326,570	.....	2,050	19,016	1,856	292,296	1,220	748	3,290	6,094	375,743	81,501
26	541,469	1,794,797	21,299	38,585	145,505	3,668	791,678	14,740	496,024	.....	273,348	2,129,436	1,334,090
27	113,828	193,461	13,280	4,402	25,496	6,172	124,085	2,092	802	.....	17,122	220,752	90,495
28	22,247,862	22,647,794	562,511	790,213	3,743,029	1,156,552	13,622,363	88,671	122,637	199,842	2,361,976	25,562,673	10,783,758

elsewhere specified, 1; ice, manufactured, 3; instruments, professional and scientific, 1; iron and steel, blast furnaces, 1; iron and steel, steel works and rolling mills, 2; iron and steel forgings, 1; iron and steel pipe, wrought, 1; jewelry, 1; liquors, vinous, 1; looking-glass and picture frames, 3; mattresses and spring beds, 1; millinery and lace goods, 4; mineral and soda waters, 5; mirrors, 3; mucilage and paste, 2; oil, unseed, 3; oil, not elsewhere specified, 2; optical goods, 3; paper and wood pulp, 1; paving materials, 1; peanuts, grading, roasting, cleaning, and shelling, 1; pens, fountain, stylographic, and gold, 5; photo-engraving, 3; pottery, terra-cotta, and fire-clay products, 1; rubber goods, not elsewhere specified, 2; safes and vaults, 1; saws, 1; scales and balances, 1; shipbuilding, including boat building, 9; show cases, 1; signs and advertising novelties, 2; soap, 1; sporting and athletic goods, 3; springs, steel, car and carriage, 1; stereotyping and electrotyping, 1; stoves and furnaces, including gas and oil stoves, 2; surgical appliances and artificial limbs, 4; toys and games, 2; umbrellas and canes, 1; upholstering materials, 1; wheelbarrows, 1; wirework, including wire rope and cable, 2; wood, turned and carved, 2.

TABLE III.—DETAIL STATEMENT FOR CITIES OF 50,000 INHABITANTS OR MORE, BY INDUSTRIES, AND CITIES OF 50,000 INHABITANTS OR MORE, BY INDUSTRIES—Continued. YOUNGSTOWN.

INDUSTRY AND CITY.	Number of establishments	PERSONS ENGAGED IN INDUSTRY.										WAGE EARNERS—NUMBER DEC. 15, OR NEAREST REPRESENTATIVE DAY.					Primary horse-power.
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks.		Wage earners (average number).			Total.	16 and over.		Under 16.				
					Male.	Female.	Total.	16 and over.			Under 16.	Male.	Female.	Male.	Female.		
								Male.	Female.								
1 All industries.....	115	11,851	94	255	833	171	10,498	10,214	272	12	12,524	12,178	334	10	2	140,907	
2 Bread and other bakery products.....	22	100	27	8	65	58	3	4	67	60	3	2	2	23			
3 Carriages and wagons and materials.....	3	74	2	3	4	64	63	1	69	68	1	1	1	89			
4 Foundry and machine-shop products.....	15	1,453	4	60	170	66	1,153	1,148	5	1,618	1,512	6	1	2,674			
5 Iron and steel, steel works and rolling mills..	7	7,128	.....	95	356	27	6,650	6,650	.....	7,776	7,776	.....	.....	75,530		
6 Lumber and timber products.....	8	232	7	14	7	5	199	199	.....	178	178	.....	.....	615		
7 Printing and publishing.....	13	251	9	13	48	17	164	136	21	7	169	140	22	7	188		
8 Tobacco manufactures.....	6	39	7	1	1	.....	30	10	14	.....	38	20	18	.....	.....
9 All other industries ¹	41	2,574	38	69	247	47	2,173	1,944	228	1	2,709	2,424	284	1	61,789		

¹ All other industries embrace: Artificial stone, 3; awnings, tents, and sails, 1; brass and bronze products, 1; butter, cheese, and condensed milk, 1; carpets, rag, 1; cars, steam-railroad, not including operations of railroad companies, 1; clothing, men's, including shirts, 1; coffee and spice, roasting and grinding, 1; dentists' materials, 1; electrical machinery, apparatus, and supplies, 1; electroplating, 1; flour-mill and gristmill products, 2; food preparations, 2; gas and electric fixtures and lamps and

CITIES OF 10,000 TO 50,000 INHABITANTS—ALL INDUSTRIES COMBINED.

1 ALLIANCE.....	44	3,026	35	71	238	108	2,524	2,385	131	8	2,800	2,731	149	3	7	3,453
2 ASHTABULA.....	44	1,601	31	49	31	10	1,471	1,334	128	9	1,563	1,417	136	9	1	2,379
3 BELLAIRE.....	36	2,846	44	65	103	37	2,597	2,301	254	42	3,245	2,874	319	28	24	17,790
4 CAMBRIDGE.....	32	1,406	30	28	102	16	1,230	1,174	56	.....	1,509	1,526	73	.....	.....	5,055
5 CHILLICOTHE.....	57	1,872	59	43	74	22	1,674	1,157	517	.....	2,072	1,432	640	.....	.....	3,558
6 EAST LIVERPOOL.....	82	5,254	49	143	136	53	4,873	3,587	1,218	68	5,216	3,841	1,302	40	33	5,523
7 ELYRIA.....	58	3,117	30	100	226	88	2,673	2,357	280	27	2,920	2,553	317	15	14	9,053
8 FINDLAY.....	74	1,623	67	55	85	40	1,376	921	454	1	1,513	1,012	500	1	.....	2,574
9 HAMILTON.....	125	7,770	81	191	451	152	6,895	6,047	752	96	7,894	6,489	804	59	42	22,563
10 IRONTON.....	63	2,119	51	72	43	33	1,920	1,647	269	4	2,083	1,788	291	.....	4	15,545
11 LANCASTER.....	42	1,657	48	33	33	11	1,532	1,118	412	2	1,664	1,214	448	1	1	2,453
12 LIMA.....	35	3,899	79	67	116	30	3,607	2,474	1,082	51	3,946	2,708	1,185	55	.....	3,264
13 LOGAN.....	57	7,347	36	155	398	61	6,607	6,674	20	3	8,014	7,987	24	3	.....	203,992
14 MANSFIELD.....	121	3,901	120	142	338	97	3,204	2,201	984	19	3,360	2,307	1,033	16	4	5,077
15 MARIETTA.....	66	1,549	59	66	103	33	1,288	1,181	106	1	1,423	1,305	117	1	.....	2,742
16 MARION.....	55	3,028	40	79	248	42	2,619	2,344	272	3	3,202	2,866	332	.....	4	3,686
17 MASSILON.....	56	2,193	37	91	102	29	1,934	1,826	87	21	2,330	2,199	105	25	1	4,730
18 MIDDLETOWN.....	41	2,992	22	93	228	73	2,576	1,805	769	2	2,752	1,028	822	.....	2	9,304
19 NEWARK.....	72	4,282	63	82	148	76	3,913	3,576	286	51	4,096	3,743	299	52	2	8,630
20 NORWOOD.....	49	4,445	31	95	280	126	3,907	3,215	684	8	4,114	3,384	722	.....	8	6,381
21 PIQUA.....	82	3,073	74	95	170	51	2,683	1,913	751	10	2,984	2,128	834	6	16	5,062
22 PORTSMOUTH.....	75	4,319	54	164	241	132	3,728	2,237	1,300	101	4,234	2,539	1,579	45	71	4,028
23 SANDUSKY.....	91	2,518	59	133	148	60	2,118	1,608	466	44	2,487	1,886	545	15	38	4,866
24 SPRINGFIELD.....	195	8,634	161	283	561	224	7,405	6,616	777	12	7,997	7,145	839	10	3	10,179
25 STEUBENVILLE.....	55	4,638	55	116	164	36	4,207	4,045	196	26	4,600	4,363	210	19	8	37,748
26 TIPPIN.....	75	1,970	78	60	142	53	1,632	1,289	278	65	1,883	1,489	319	46	29	3,237
27 WARREN.....	68	2,174	41	98	163	74	1,798	1,190	547	61	2,197	1,455	668	3	71	5,530
28 ZANESVILLE.....	109	3,586	95	76	211	54	3,150	2,800	325	25	3,569	3,173	367	26	3	8,783

MANUFACTURES—OHIO.

999

TOTALS FOR ALL INDUSTRIES IN CITIES OF 10,000 BUT LESS THAN 50,000 INHABITANTS: 1909—Continued.

CITIES OF 50,000 INHABITANTS OR MORE, BY INDUSTRIES—Continued.

YOUNGSTOWN.

Capital.	EXPENSES.										Value of products.	Value added by manufacture.
	Total.	Services.			Materials.		Miscellaneous.					
		Officials.	Clerks.	Wage earners.	Fuel and rent of power.	Other.	Rent of factory.	Taxes, including internal revenue.	Contract work.	Other.		
1 \$87,160,357	\$74,806,867	\$660,173	\$932,588	\$7,834,685	\$8,963,880	\$55,328,094	\$24,773	\$476,206	\$23,212	\$2,563,256	\$81,270,747	\$18,978,773
2 89,820	182,256	.....	2,736	38,148	4,036	123,799	4,314	1,211	.....	3,012	249,237	116,402
3 113,041	137,261	6,200	6,500	39,970	1,334	64,700	480	1,333	.....	16,744	145,600	79,566
4 5,822,456	4,301,873	146,151	192,094	800,296	58,716	2,643,724	2,038	28,886	.....	420,968	4,865,365	2,162,865
5 50,515,874	47,317,691	298,848	370,709	5,204,351	1,751,460	38,217,155	.....	168,279	.....	1,306,839	50,175,153	10,206,538
6 730,090	838,567	21,580	10,008	135,095	3,467	650,057	510	4,958	.....	12,892	952,941	299,417
7 402,483	369,322	24,676	57,395	108,976	5,414	122,163	5,886	1,657	4,200	38,955	454,407	326,830
8 18,417	29,201	600	800	11,990	24	9,653	535	5,579	.....	20	37,927	28,250
9 29,467,267	21,630,696	162,118	292,346	1,495,859	5,139,429	13,491,843	11,010	264,303	19,012	754,776	24,390,177	5,758,905

reflectors, 1; gas, illuminating and heating, 1; glass, cutting, staining, and ornamenting, 2; gloves and mittens, leather, 1; ice, manufactured, 1; iron and steel, blast furnaces, 5; leather goods, 1; liquors, malt, 2; marble and stone work, 1; mattresses and spring beds, 1; mineral and soda waters, 2; models and patterns, not including paper patterns, 2; photo-engraving, 1; slaughtering and meat packing, 1; umbrellas and canes, 1; wall plaster, 1.

CITIES OF 10,000 TO 50,000 INHABITANTS—ALL INDUSTRIES COMBINED.

1 \$7,211,616	\$5,541,577	\$141,613	\$305,068	\$1,462,314	\$112,289	\$2,740,565	\$6,404	\$38,623	\$1,350	\$733,346	\$6,135,429	\$3,282,575
2 2,075,887	3,173,269	100,600	37,515	814,175	48,334	2,034,944	5,582	13,512	800	117,247	3,458,012	1,374,834
3 6,426,806	9,203,873	105,584	119,585	1,412,132	788,958	6,370,450	3,378	66,424	15,385	322,927	10,091,554	2,932,146
4 2,379,213	4,051,312	30,682	74,214	919,104	85,096	2,799,816	3,457	18,445	5,723	114,775	4,290,560	1,405,649
5 2,364,433	4,064,657	53,988	80,901	707,244	79,023	2,958,760	6,820	66,955	1,725	109,251	4,345,224	1,307,451
6 7,988,058	6,252,881	246,068	202,134	2,764,115	443,457	2,077,625	7,843	62,706	480	448,453	6,629,076	4,107,994
7 7,323,594	7,045,012	213,640	250,241	1,572,832	127,441	4,367,541	9,320	35,196	2,393	466,408	8,064,914	3,569,932
8 2,955,044	3,115,835	90,750	95,146	573,601	109,742	1,984,616	9,361	34,068	350	218,201	3,486,793	1,392,435
9 24,628,068	16,603,005	590,571	757,592	3,798,440	410,654	9,239,705	24,280	184,200	6,823	1,630,740	18,183,693	8,543,334
10 4,963,282	6,369,467	111,689	85,988	887,788	719,942	4,274,029	7,855	111,806	16,399	144,471	7,118,259	2,124,288
11 1,458,899	3,926,325	42,404	32,495	677,326	42,901	3,008,227	2,118	19,934	.....	100,920	4,074,004	1,022,876
12 5,487,852	7,002,077	215,655	146,970	2,023,902	126,532	3,742,719	14,779	256,176	1,093	474,251	7,758,877	3,894,626
13 34,386,551	30,443,247	368,423	393,533	4,737,822	4,270,634	10,950,950	5,366	253,542	60	412,927	38,986,996	14,765,412
14 8,538,840	7,308,564	229,499	355,164	1,472,037	105,865	4,250,591	21,636	141,273	.....	732,449	8,172,911	3,816,455
15 3,275,321	2,798,292	100,117	89,683	594,406	48,365	1,738,520	17,728	51,637	8,410	149,525	3,214,553	1,427,668
16 7,864,474	5,043,207	152,860	263,270	1,404,956	68,198	2,509,200	11,981	48,328	171,288	413,126	5,666,976	3,089,578
17 7,787,668	4,091,529	181,369	100,346	1,127,092	146,747	2,142,911	4,422	42,734	350	345,558	4,787,772	2,498,114
18 10,563,845	14,172,005	240,752	232,239	1,389,143	281,778	7,668,603	14,387	2,182,525	.....	2,162,638	16,516,785	8,566,404
19 9,035,816	6,974,303	150,175	165,224	1,957,796	212,839	3,785,718	5,942	77,848	580	635,181	7,851,118	3,869,561
20 13,367,715	8,534,513	281,235	350,277	2,080,567	68,601	3,952,172	9,522	329,475	18,300	1,444,364	9,684,332	5,693,559
21 5,443,594	6,103,857	240,225	161,712	1,292,246	87,418	3,764,853	12,344	37,898	3,863	503,293	6,930,672	3,075,401
22 6,385,461	6,525,539	243,137	436,596	1,458,546	83,336	3,811,107	14,333	60,382	215	417,887	7,276,893	3,382,450
23 6,494,683	4,991,122	201,747	151,216	1,006,006	105,743	2,729,425	12,575	173,492	.....	610,918	5,946,853	3,111,685
24 22,485,382	16,574,878	674,925	686,877	3,984,818	225,956	8,693,106	47,992	170,330	52,000	2,138,874	19,246,141	10,327,079
25 18,423,529	18,455,386	241,004	162,275	3,203,068	1,459,598	12,983,494	8,095	114,655	400	282,797	21,187,127	6,744,035
26 3,726,017	2,094,897	90,022	134,406	828,017	98,128	1,154,132	8,827	63,492	887	316,980	3,254,328	2,002,062
27 4,511,041	5,130,966	283,499	187,850	910,745	94,649	2,963,886	7,799	18,505	259,582	449,481	5,988,174	2,924,639
28 6,025,109	8,326,902	133,971	217,339	1,793,077	232,580	5,271,226	17,645	66,365	1,905	592,854	9,144,953	3,641,147

OKLAHOMA.

INDUSTRIES IN GENERAL.

General character of the state.—The territory of Oklahoma and Indian Territory were admitted to the Union as one state under the name of Oklahoma, November 16, 1907. For the census years preceding the consolidation of the two territories their statistics have, therefore, been combined in this report for purposes of comparison.

The state has an area of 70,057 square miles, of which 643 represent water surface. It ranks seventeenth in size among the 49 states and territories of continental United States. Its population in 1910 was 1,657,155, as compared with 790,391 in 1900 and 258,657 in 1890. In 1910 the density of population for the entire state was 23.9 per square mile, the corresponding figure for 1900 being 11.4. It ranked twenty-third among the states and territories as regards population in 1910 and thirtieth in 1900. The percentage of increase in population during the decade 1900–1910 was greater than for any other state except Washington. The population is mostly rural; only 19.3 per cent of the entire population of the state in 1910 resided in incorporated places having a population of 2,500 or over.

There are eight cities in the state which in 1910 had a population of over 10,000—Oklahoma City, Muskogee, Tulsa, Enid, McAlester, Shawnee, Guthrie, and Chickasha. These eight cities contained 10.2 per cent of the total population of the state, and in 1909 were credited with 37.3 per cent of the total value of its manufactures.

The Arkansas and Red Rivers are navigable for boats of light draft for some distance, thus giving water connections with the lower Mississippi. The facilities for railway transportation have been greatly developed during the past few years, and the principal manufacturing centers have good railroad connection with other parts of the country.

Importance and growth of manufactures.—The manufactures of Oklahoma have increased rapidly in their importance, although many of the industries are as yet in their infancy. In 1909, as in 1904 and 1899, the leading industries were those directly dependent on the products of agriculture, but in 1909 these industries, although large, did not report such a large proportion of the total value of products for all industries combined as in the previous years. A marked increase in the independent industrial activities of the

state commenced with the development of the oil fields in 1907 and the discovery of natural gas. This cheap fuel has attracted manufacturers, who have established a number of new enterprises. An abundance of coal and lumber and the location in the state of such minerals as gypsum, cement rock, asphalt, granite, limestone, lead, and zinc have further stimulated manufacturing. In 1899 the total value of manufactured products amounted to only \$8,133,000, as compared with \$24,459,000 in 1904 and \$53,682,000 in 1909. Of the total increase of \$29,223,000 from 1904 to 1909, nearly one-fourth represents the value of the output of about 30 new industries. From 1899 to 1909 the gross value of products per capita of the total population of the state increased from \$10 to \$32. The proportion which the manufactures of the state represent of the total value of the products of manufacturing industries in the United States increased from seven-hundredths of 1 per cent in 1899 to seventeen-hundredths of 1 per cent in 1904 and twenty-six hundredths of 1 per cent in 1909.

The first table on the next page gives the more important figures relative to all classes of manufactures combined for the state at the censuses of 1909, 1904, and 1899, with the percentages of increase from census to census.

In 1909 the state of Oklahoma had 2,310 manufacturing establishments, which gave employment to an average of 18,034 persons during the year and paid out \$9,285,000 in salaries and wages. Of the persons employed, 13,143 were wage earners. These establishments turned out products to the value of \$53,682,000, to produce which materials costing \$34,153,000 were used. The value added by manufacture was thus \$19,529,000, which figure best represents the net wealth created by manufacturing operations during the year.

In general, this table brings out the fact that there has been a rapid growth of the manufacturing interests of the state. During the five-year period 1904–1909 every item more than doubled, the number of establishments increasing 105.7 per cent and the average number of wage earners 140.9 per cent, while the value of products increased 119.5 per cent and the value added by manufacture 142.1 per cent. As pointed out in the Introduction, however, it would be improper to infer that manufactures increased in

volume to the full extent indicated by the figures representing values, since the increases shown are certainly due, in part, to the increase that has taken place in the prices of commodities.

	NUMBER OR AMOUNT.			PER CENT OF INCREASE.	
	1909	1904	1899	1904-1909	1899-1904
	Number of establishments.....	2,310	1,123	495	105.7	126.9
Persons engaged in manufactures.....	18,034	7,456	(1)	141.9	
Proprietors and firm members.....	2,698	1,187	(1)	127.3	
Salaried employees.....	2,193	813	269	169.7	202.2
Wage earners (average number).....	13,143	5,456	2,381	140.9	129.1
Primary horsepower.....	71,139	29,608	11,572	140.3	155.9
Capital.....	\$38,873,000	\$16,124,000	\$4,054,000	141.1	297.7
Expenses.....	47,216,000	21,383,000	6,800,000	120.8	214.5
Services.....	9,285,000	3,517,000	1,113,000	164.0	216.0
Salaries.....	2,045,000	718,000	219,000	184.8	227.9
Wages.....	7,240,000	2,799,000	894,000	158.7	213.1
Materials.....	34,153,000	16,394,000	5,430,000	108.3	201.9
Miscellaneous.....	3,778,000	1,472,000	257,000	156.7	472.8
Value of products.....	53,682,000	24,459,000	8,134,000	119.5	200.7
Value added by manufacture (value of products less cost of materials).....	19,529,000	8,065,000	2,704,000	142.1	198.3

¹ Figures not available.

The relative importance and growth of the leading manufacturing industries of the state are shown in the table following. It should be borne in mind, in considering this table, that the value of products in

some of the industries involves a certain amount of duplication due to the use of the product of one establishment in the industry as material for another establishment.

INDUSTRY.	Number of establishments.	WAGE EARNERS.		VALUE OF PRODUCTS.		VALUE ADDED BY MANUFACTURE.		PER CENT OF INCREASE. ¹			
		Average number.	Per cent distribution.	Amount.	Per cent distribution.	Amount.	Per cent distribution.	Value of products.		Value added by manufacture.	
								1904-1909	1899-1904	1904-1909	1899-1904
All industries.....	2,310	13,143	100.0	\$53,682,000	100.0	\$19,529,000	100.0	119.5	200.7	142.1	198.3
Flour-mill and gristmill products.....	295	842	6.4	19,144,000	35.7	2,051,000	13.6	59.3	155.0	44.7	121.3
Oil, cottonseed, and cake.....	39	581	4.4	9,187,000	9.7	942,000	4.8	66.8	255.7	24.6	181.0
Lumber and timber products.....	342	3,175	24.2	4,439,000	8.3	2,052,000	15.1				
Printing and publishing.....	598	1,698	12.9	3,989,000	7.4	2,085,000	15.3	89.9	216.9	83.4	210.1
Bread and other bakery products.....	252	418	3.2	1,794,000	3.3	825,000	4.2	159.2	620.8	102.6	442.3
Foundry and machine-shop products.....	64	457	3.5	1,371,000	2.6	784,000	4.0	488.4	294.9	399.4	460.7
Ice, manufactured.....	77	449	3.4	1,273,000	2.4	806,000	4.9	141.1	371.4	137.3	402.5
Butter, cheese, and condensed milk.....	10	62	0.5	1,150,000	2.1	222,000	1.1				
Brick and tile.....	38	730	5.6	1,029,000	1.9	803,000	4.1	101.8	175.7	110.2	148.1
Slaughtering and meat packing.....	7	63	0.5	880,000	1.7	140,000	0.7	202.4		154.5	
Copper, tin, and sheet-iron products.....	62	233	1.8	799,000	1.5	385,000	2.0	271.6		259.3	
Artificial stone.....	129	238	1.8	539,000	1.0	300,000	1.6	582.3		551.0	
Marble and stone work.....	41	147	1.1	418,000	0.8	231,000	1.2	294.3		220.8	
Leather goods.....	15	66	0.5	375,000	0.7	149,000	0.8	33.9	78.3	17.3	104.8
Brooms.....	23	76	0.6	248,000	0.5	103,000	0.5	244.4	620.0	151.2	583.3
Carriages and wagons and materials.....	19	123	0.9	228,000	0.4	152,000	0.8				
All other industries.....	290	3,787	28.8	10,805,000	20.1	4,630,000	25.2				

¹ Percentages are based on figures in Table I. Where the percentages are omitted, comparable figures can not be given.

The smelting and refining of zinc, the refining of petroleum, and the steam-railroad repair shops, which are among the most important industries in the state when measured by value of products, are included under the head of "All other industries" in the above table. The first two of these industries were started after 1904, and for this reason no comparative figures are available, while for the third industry comparative figures can not be given without disclosing the operations of individual establishments. The 1909 statistics for each of these industries, however, are given in Table II, page 1014. In 1909 three establishments were engaged in the smelting and refining of zinc, the average number of wage earners employed being 566. Measured by value of products, this industry, with

\$3,002,000 in 1909, held fifth place among the manufacturing industries of the state. The nine establishments engaged in refining petroleum gave employment to an average of 75 employees and reported products valued at \$1,055,000. In 1909 the eight steam-railroad car repair shops gave employment to an average of 1,412 wage earners and reported products valued at \$1,702,000.

Although a few industries predominate in importance, it will be seen from Table II, page 1014, that there is, on the whole, considerable diversity in the manufacturing activities of the state. The most important industries listed in the table given above, in which they are arranged in the order of the value of products, call for brief consideration.

Flour-mill and gristmill products.—This industry, which was the first in importance among the manufacturing industries of the state, gave employment in 1909 to 842 wage earners and reported products valued at \$19,144,000, or 35.7 per cent of the total value of manufactured products for the state. During the decade 1899–1909 the value of flour-mill and gristmill products increased over 300 per cent.

Oil, cottonseed, and cake.—The statistics presented include those for all establishments engaged primarily in extracting oil from the seed and in refining oil for sale. The industry shows a decided increase during the decade in the average number of wage earners, the value of products, and the value added by manufacture.

Lumber and timber products.—This industry embraces establishments engaged in logging and also sawmills, planing mills, and wooden packing-box factories. Its growth was most rapid during the latter half of the decade, and in 1909 more wage earners were employed in this industry than in any other in the state.

Printing and publishing.—This classification includes establishments which publish newspapers, books, and periodicals, job-printing offices, and those engaged in bookbinding and blank-book making. This industry reported more establishments, and, with the exception of the lumber industry, gave employment to more wage earners than any other in the state.

The rank of the industries according to value added by manufacture differs considerably from the rank in value of products. Because of the extent to which the processes of manufacture are carried on by machinery in the flour mills and gristmills and in the cottonseed-oil mills the value added by manufacture in these industries is not commensurate with the gross value of products. As a result, the flour mills and gristmills would become third in order according to value added by manufacture, and the cottonseed-oil mills would be fifth. Printing and publishing and lumber advance to first and second places, respectively, and the manufacture of ice, which was seventh in value of products, goes to fourth place.

This table also shows the percentages of increase for these leading industries in respect to value of products and value added by manufacture where these statistics are comparable. The butter, cheese, and condensed-milk industry shows a greater rate of increase from 1904 to 1909 both in value of products and in value added by manufacture than any of the other industries shown separately in the table. The bakeries and broom factories show by far the greatest percentages of increase in value of products from 1899 to 1904, and the broom factories show also the greatest rate of increase in value added by manufacture for the same period. Remarkable rates of increase are shown, however, for nearly all of the industries for which a separate presentation is made, and generally for both periods of the decade.

In addition to the 16 industries shown separately in the table and the 3 mentioned in the preceding paragraph, there are 14 other industries which had a value of products in 1909 in excess of \$100,000. They are included under the head of "All other industries" in the table, because in some cases the operations of individual establishments would be disclosed if they were shown separately; in others, because the returns do not properly represent the true condition of the industry, for the reason that it is more or less interwoven with one or more other industries; and in others, because comparable statistics for the different census years are not available, or on account of changes in classification. These industries are as follows: Boxes, fancy and paper; cement; clothing, men's; coffee and spice, roasting and grinding; confectionery; cordage and twine and jute and linen goods; explosives; food preparations; furniture and refrigerators; gas, illuminating and heating; mattresses and spring beds; mineral and soda waters; wall plaster; and wood preserving. Statistics for 1909 for men's clothing, confectionery, furniture, gas, mattresses and spring beds, and wall plaster are presented in Table II, page 1014.

Persons engaged in manufacturing industries.—The following table shows, for 1909, the distribution of the number of persons engaged in manufactures, the average number of wage earners being distributed by sex and age. It should be borne in mind, however, that the sex and age classification of the average number of wage earners in this and other tables is an estimate obtained by the method described in the Introduction.

CLASS.	PERSONS ENGAGED IN MANUFACTURES.		
	Total.	Male.	Female.
All classes.....	18,034	17,071	963
Proprietors and officials.....	3,630	3,547	83
Proprietors and firm members.....	2,698	2,628	70
Salaried officers of corporations.....	284	278	6
Superintendents and managers.....	648	641	7
Clerks.....	1,261	1,059	202
Wage earners (average number).....	13,143	12,465	678
16 years of age and over.....	13,020	12,345	675
Under 16 years of age.....	123	120	3

The average number of persons engaged in manufactures during 1909 was 18,034, of whom 13,143 were wage earners. Of the remainder, 3,630 were proprietors and officials and 1,261 were clerks. Corresponding figures for individual industries will be found in Table II, page 1014.

The next table shows, for 1909, the percentage of proprietors and officials, clerks, and wage earners, respectively, among the total number of persons employed in manufactures. It covers all industries combined and nine important industries individually.

Of the total number of persons engaged in all manufacturing industries, 20.1 per cent were proprietors and officials, 7 per cent clerks, and 72.9 per cent wage

earners. In most of the industries the majority of the establishments are small and in many of them the work is done to a large extent by the proprietors or their representatives, so that the proportion of persons falling in the class of proprietors and officials is much higher than in states where the industries are more highly developed and the establishments larger.

INDUSTRY.	PERSONS ENGAGED IN MANUFACTURES.			
	Total number.	Per cent of total.		
		Proprietors and officials.	Clerks.	Wage earners (average number).
All industries.....	18,034	20.1	7.0	72.9
Bread and other bakery products.....	766	40.3	5.1	54.6
Brick and tile.....	823	8.6	2.7	88.7
Butter, cheese, and condensed milk.....	101	26.7	11.9	61.4
Flour-mill and gristmill products.....	1,679	39.2	10.6	50.1
Foundry and machine-shop products.....	587	17.0	6.1	77.9
Ice, manufactured.....	614	18.1	8.8	73.1
Lumber and timber products.....	3,809	14.2	2.6	83.4
Oil, cottonseed, and cake.....	770	14.2	10.4	75.6
Printing and publishing.....	2,945	27.9	14.5	57.7
All other industries.....	5,940	14.9	5.6	79.6

The following table shows, for 1909, in percentages, for all industries combined, the distribution of the average number of wage earners by age periods, and for those 16 years of age and over by sex, calculated in the manner described in the Introduction. It also shows, for some of the important industries separately, a similar distribution of wage earners as reported for December 15, or the nearest representative day. As a means of judging the importance of the several industries, the average number employed for the year in all industries is also given in each case.

INDUSTRY.	WAGE EARNERS.				
	Average number. ¹	Per cent of total.			
		16 years of age and over.		Under 16 years of age.	
		Male.	Female.		
All industries.....	13,143	93.9	5.1	0.9	
Bread and other bakery products.....	418	90.4	8.1	1.4	
Brick and tile.....	730	99.7		0.3	
Butter, cheese, and condensed milk.....	62	80.6	17.7	1.6	
Flour-mill and gristmill products.....	842	99.8		0.2	
Foundry and machine-shop products.....	457	100.0			
Ice, manufactured.....	449	98.9		1.1	
Lumber and timber products.....	3,175	99.7	(²)	0.2	
Oil, cottonseed, and cake.....	581	100.0			
Printing and publishing.....	1,698	79.9	17.4	2.8	
All other industries.....	4,731	91.8	7.1	1.1	

¹ For method of estimating the distribution, by sex and age periods, of the average number in all industries combined, see Introduction.

² Less than one-tenth of 1 per cent.

For all industries combined, 93.9 per cent of the average number of wage earners were males 16 years of age and over; 5.1 per cent, females 16 years of age and over; and nine-tenths of 1 per cent, children under the age of 16. The larger part of the total number of female wage earners and of the wage earners under 16 years of age is made up of those employed in bakeries, creameries, and printing and publishing establishments.

In order to compare the distribution of persons engaged in manufactures in 1909 with that shown at the census of 1904, it is necessary to use the classification employed at the earlier census. (See Introduction.) The following table makes this comparison according to occupational status:

CLASS.	PERSONS ENGAGED IN MANUFACTURES.				
	1909		1904		Per cent of increase, 1904-1909.
	Number.	Per cent distribution.	Number.	Per cent distribution.	
Total.....	18,034	100.0	7,456	100.0	141.5
Proprietors and firm members.....	2,698	15.0	1,187	15.9	127.3
Salaried employees.....	2,193	12.2	813	10.9	109.7
Wage earners (average number).....	13,143	72.9	5,456	73.2	140.9

Comparable figures are not obtainable for 1899. Salaried employees show a greater percentage of increase than either of the other two classes, as well as the only increase in the proportion of the total.

The following table shows the average number of wage earners, distributed according to age periods, and in the case of those 16 years of age and over according to sex, for 1909, 1904, and 1899. The averages for 1909 are estimated on the basis of the actual number reported for a single representative day. (See Introduction.)

CLASS.	AVERAGE NUMBER OF WAGE EARNERS.					
	1909		1904		1899	
	Number.	Per cent distribution.	Number.	Per cent distribution.	Number.	Per cent distribution.
Total.....	13,143	100.0	5,456	100.0	2,381	100.0
16 years of age and over.....	13,020	99.1	5,346	98.0	2,331	97.9
Male.....	12,345	93.9	5,019	92.0	2,254	94.7
Female.....	675	5.1	327	6.0	77	3.2
Under 16 years of age.....	123	0.9	110	2.0	50	2.1

This table indicates that for all industries combined the proportion of females was greater in 1909 than in 1899, while that of males 16 years of age and over and children under 16 years of age was less. In 1909 males 16 years of age and over formed 93.9 per cent of all wage earners, as compared with 92 per cent in 1904 and 94.7 per cent in 1899.

Wage earners employed, by months.—The next table gives the number of wage earners employed on the 15th of each month during the year 1909 for all industries combined, for the cottonseed-oil industry, and for all other industries combined; it gives also the percentage which the number reported for each month is of the greatest number reported for any month. In Table II, page 1014, are shown, for practically all of the important industries in the state, the largest number and the smallest number of wage earners reported for any month. The figures are for the 15th day, or the nearest representative day, of the month.

MONTH.	WAGE EARNERS.					
	All industries.		Oil, cottonseed, and cake.		All other industries.	
	Number.	Percent of maximum.	Number.	Percent of maximum.	Number.	Percent of maximum.
January.....	11,826	80.7	1,000	79.0	10,826	79.9
February.....	11,782	80.4	641	50.6	11,141	82.2
March.....	12,237	83.5	807	40.0	11,730	86.6
April.....	12,285	83.8	267	21.1	12,018	88.7
May.....	12,518	85.4	162	12.8	12,356	91.2
June.....	12,905	88.0	126	10.0	12,779	94.3
July.....	13,153	89.7	115	9.1	13,038	96.2
August.....	13,465	91.9	132	10.4	13,333	98.4
September.....	13,826	94.3	408	32.2	13,418	99.0
October.....	14,659	100.0	1,112	87.8	13,547	100.0
November.....	14,551	99.3	1,266	100.0	13,285	98.1
December.....	14,505	98.9	1,232	97.3	13,273	98.0

For all industries combined the greatest number of wage earners, 14,659, is shown for October, and the smallest number, 11,782, for February, the minimum number representing 80.4 per cent of the maximum number. The most important seasonal industry in Oklahoma is the manufacture of cottonseed oil. The smallest number employed in this industry was 115, in

July, and the greatest number, 1,266, in November. The relative variation in the number of wage earners employed for the several months in the more important industries, except in the manufacture of brick and tile, where the number employed in January was only 39.6 per cent of the number employed in July, was not much greater than that which is shown for all industries of the state combined. The minimum number employed in flour mills and gristmills, as shown in Table II, was 80.4 per cent of the maximum number; in the lumber industry the minimum number was 83.4 per cent of the maximum; and in printing and publishing the minimum was 88.8 per cent of the maximum.

Prevailing hours of labor.—In the following table wage earners have been classified according to the hours of labor prevailing in the establishments in which they are employed. In making this classification the average number of wage earners employed during the year is used, and the number employed in each establishment is classified as a total according to the hours prevailing in that establishment, even though a few employees work a greater or less number of hours.

INDUSTRY.	AVERAGE NUMBER OF WAGE EARNERS IN ESTABLISHMENTS GROUPED ACCORDING TO PREVAILING HOURS OF WORK PER WEEK.								
	Total.	48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72.	Over 72.
All industries.....	13,143	2,965	303	1,949	526	4,711	1,463	858	368
Artificial stone.....	236	86	5	54	2	89	.....	.....	.....
Bread and other bakery products.....	418	58	4	52	14	233	15	34	5
Brick and tile.....	730	15	.....	46	.....	669	.....	.....	.....
Brooms.....	76	10	19	1	37	9	.....	.....	.....
Butter, cheese, and condensed milk.....	62	1	.....	1	29	19	9	3	.....
Carriages and wagons and materials.....	123	4	.....	43	.....	76	.....	.....	.....
Copper, tin, and sheet-iron products.....	233	137	4	18	.....	24	.....	.....	.....
Flour-mill and gristmill products.....	842	98	10	11	4	280	168	271	.....
Foundry and machine-shop products.....	457	18	1	90	1	343	4	.....	.....
Ice, manufactured.....	449	5	.....	.....	9	40	12½	24	247
Lumber and timber products.....	3,175	800	180	155	150	1,631	253	.....	.....
Marble and stone work.....	147	69	.....	45	5	23	.....	.....	.....
Oil, cottonseed, and cake.....	581	.....	.....	.....	.....	15	14	488	64
Printing and publishing.....	1,098	1,122	58	323	32	163	.....	.....	.....
Slaughtering and meat packing.....	63	.....	.....	.....	.....	54	7	2	.....
All other industries.....	3,853	492	22	1,110	237	1,035	869	36	52

It is evident from these figures that for the majority of wage earners employed in the manufacturing industries of Oklahoma in 1909 the prevailing hours of labor were 60 or more a week, 56.3 per cent being employed in establishments where these hours prevailed and 43.7 per cent in establishments where less than 60 hours a week prevailed. Of the total number of wage earners, 35.8 per cent were employed in plants in which 60 hours constituted a week's work.

In the cottonseed-oil mills most of the wage earners were employed in mills where the prevailing number of hours of labor was 72 or more per week; in the flour mills and gristmills the prevailing hours for the greater part of the wage earners were from 60 to 72 per week; in the lumber industry about three-fifths of the wage earners worked 60 hours or more per week, though slightly more than one-fourth of the total number worked 48 hours or less; and in printing and publish-

ing almost two-thirds of the wage earners were employed for 48 hours or less per week.

Location of establishments.—The next table shows the extent to which the manufactures of Oklahoma are carried on in cities of 10,000 population or over. (See Introduction.) The statistics for 1904 are omitted from this table, because there was no Federal census of population for that year from which to determine the cities that came within the group having over 10,000 inhabitants.

In 1909, 37.3 per cent of the total value of products was reported from cities having over 10,000 inhabitants, and 33.4 per cent of the average number of wage earners were employed in such cities. In the relative importance of their manufacturing industries, this class of cities made a decided gain during the period from 1899 to 1909. There were only two of these cities, however, since Muskogee, Tulsa, Enid, McAlester,

Shawnee, and Chickasha, each had less than 10,000 inhabitants in 1900, and so were included in the districts outside in 1899. The extent of this change will be appreciated when it is considered that in 1909 the manufacturing establishments in these six cities gave employment to an average of 2,704 wage earners and turned out products valued at \$10,694,651, which represented 20.6 per cent and 19.9 per cent of the respective totals for the state.

ITEM.	Year.	Total.	LOCATION OF ESTABLISHMENTS.		PER CENT OF TOTAL.	
			In cities with population of 10,000 and over.	Outside districts.	In cities with population of 10,000 and over.	Out-side districts.
Population.....	1910	1,657,155	168,866	1,488,289	10.2	89.8
	1900	790,391	20,043	770,348	2.5	97.5
Number of establishments.	1909	2,310	486	1,824	21.0	79.0
	1899	495	69	426	13.9	86.1
Average number of wage earners.	1909	13,143	4,384	8,759	33.4	66.6
	1899	2,381	461	1,920	19.4	80.6
Value of products....	1909	\$53,682,405	\$20,005,330	\$33,677,075	37.3	62.7
	1899	8,133,936	1,493,998	6,639,938	18.4	81.6
Value added by manufacture.	1909	19,529,511	7,110,080	12,419,431	36.4	63.6
	1899	2,703,489	639,860	2,063,629	23.7	76.3

The population in 1910 and 1900 of the eight cities which had 10,000 inhabitants or over in 1910 is given in the following table:

CITY.	1910	1900	CITY.	1910	1900
Oklahoma City.....	64,205	10,037	McAlester.....	12,954	4,125
Muskogee.....	25,278	4,254	Shawnee.....	12,474	3,462
Tulsa.....	18,182	1,390	Guthrie.....	11,654	10,006
Enid.....	13,799	3,444	Chickasha.....	10,320	3,299

The relative importance in manufactures of the eight cities having a population of 10,000 or over in 1910 is shown in the following table, in which the value of products and average number of wage earners are shown separately, so far as available, for 1909, 1904, and 1899:

CITY.	AVERAGE NUMBER OF WAGE EARNERS.			VALUE OF PRODUCTS.		
	1909	1904	1899	1909	1904	1899
Oklahoma City.....	1,398	720	458	\$7,867,884	\$3,670,730	\$1,241,987
Enid.....	303	(1)	(1)	2,453,188	(1)	(1)
Muskogee.....	381	(1)	(1)	2,279,151	(1)	(1)
Shawnee.....	1,014	(1)	(1)	2,081,477	(1)	(1)
Chickasha.....	354	(1)	(1)	1,866,959	(1)	(1)
Tulsa.....	462	(1)	(1)	1,562,642	(1)	(1)
Guthrie.....	282	333	241	1,442,705	1,200,602	648,933
McAlester.....	180	(1)	(1)	451,234	(1)	(1)

¹ Figures not available.

Oklahoma City and Guthrie, the only cities for which comparative figures are given, show increases in value of products at each census. Oklahoma City, however, showed by far the greater growth in manufactures, as it did in population. The value of its

manufactured products increased 195.6 per cent from 1899 to 1904 and 114.3 per cent from 1904 to 1909, and the average number of wage earners employed increased 57.2 per cent and 94.2 per cent, respectively, during the same periods. In Guthrie the value of products increased 85 per cent from 1899 to 1904 and 20.2 per cent from 1904 to 1909, while the average number of wage earners increased 38.2 per cent between 1899 and 1904 and decreased 15.3 per cent between 1904 and 1909. In four of the cities shown separately for 1909—Oklahoma City, Enid, Muskogee, and Guthrie—the flour-mill and gristmill products and the printing and publishing industries were predominant.

The leading industries or products in the remaining cities shown in the table are as follows: In Chickasha, flour mills and gristmills, cottonseed-oil mills, and steam-railroad repair shops; in McAlester, manufactured ice and printing and publishing; in Shawnee, steam-railroad repair shops, cottonseed-oil mills, and flour-mill and gristmill products; and in Tulsa, foundries and machine shops, flour-mill and gristmill products, and the lumber industry.

Character of ownership.—The table that follows has for its purpose the presentation of conditions in respect to the character of ownership, or legal organization, of manufacturing enterprises. For all industries combined comparative figures are given covering the censuses of 1909 and 1904. Comparative data for 1899 are not available. Figures for 1909 only are presented for several important industries individually. In order to avoid disclosing the operations of individual concerns it is necessary to omit several important industries from this table and the one following.

The most important distinction shown is that between corporate and all other forms of ownership. For all industries combined, 21.7 per cent of the total number of establishments were, in 1909, under corporate ownership, as against 78.3 per cent under all other forms. The corresponding figures for 1904 were 21.5 per cent and 78.4 per cent, respectively. For all industries combined, as measured by value of products and value added by manufacture, corporate ownership gained ground during the period covered by the table, establishments operated by corporations reporting 73.4 per cent of the total value of products and 65 per cent of the total value added by manufacture in 1909, as against 71.1 per cent and 61.2 per cent, respectively, in 1904. This class of establishments reported one-half or more of the total value of products for each of the industries shown separately, with the exception of the bakeries, in which individually owned establishments reported the greater value of products. Among the establishments engaged in the important industries not shown in the preceding table, all of the zinc smelters and refineries, all but two of the cottonseed-oil mills, and all but one of the petroleum refineries were under corporate ownership.

number of wage earners, value of products, and value added by manufacture.

INDUSTRY AND CHARACTER OF OWNERSHIP.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.
ALL INDUSTRIES:				
1909.....	2,310	13,143	\$53,682,405	\$19,529,511
1904.....	1,123	5,456	24,459,107	8,065,155
Individual:				
1909.....	1,257	3,113	7,699,080	4,101,449
1904.....	635	1,380	4,173,454	1,937,094
Firm:				
1909.....	541	1,787	6,412,806	2,705,968
1904.....	242	696	2,870,369	1,139,309
Corporation:				
1909.....	501	8,225	39,390,339	12,687,947
1904.....	242	3,366	17,401,144	4,984,424
Other:				
1909.....	11	18	180,180	34,147
1904.....	4	5	5,140	4,263
Per cent of total:				
1909.....	100.0	100.0	100.0	100.0
1904.....	100.0	100.0	100.0	100.0
Individual:				
1909.....	54.4	23.7	14.3	21.0
1904.....	56.5	25.5	17.1	24.6
Firm:				
1909.....	23.4	13.6	11.9	13.9
1904.....	21.5	12.8	11.8	14.1
Corporation:				
1909.....	21.7	62.6	73.4	65.0
1904.....	21.5	61.7	71.1	61.2
Other:				
1909.....	0.5	0.1	0.3	0.2
1904.....	0.4	0.1	(1)	0.1
Bread and other bakery products, 1909.....	252	418	\$1,794,113	\$825,098
Individual:	205	330	1,363,542	633,542
Firm²:	47	88	426,961	191,556
Per cent of total:				
Individual.....	100.0	100.0	100.0	100.0
Individual.....	81.3	78.9	76.3	76.8
Firm ²	18.6	21.1	23.7	23.2
Flour-mill and gristmill products, 1909.....	295	842	\$19,144,475	\$2,651,580
Individual:	106	105	1,387,666	236,456
Firm:	91	141	2,460,548	387,211
Corporation³:	98	596	15,296,261	2,027,913
Per cent of total:				
Individual.....	100.0	100.0	100.0	100.0
Individual.....	35.9	12.5	7.2	8.9
Firm.....	30.8	16.7	12.9	14.6
Corporation ³	33.2	70.8	79.9	76.5
Foundry and machine-shop products, 1909.....	64	457	\$1,371,463	\$784,784
Individual:	25	125	318,170	193,555
Firm:	17	92	366,408	226,551
Corporation:	22	240	686,885	359,698
Per cent of total:				
Individual.....	100.0	100.0	100.0	100.0
Individual.....	39.1	27.4	23.2	25.3
Firm.....	26.6	20.1	26.7	28.9
Corporation.....	34.4	52.5	50.1	45.8
Lumber and timber products, 1909.....	342	3,175	\$4,438,563	\$2,951,317
Individual:	198	1,094	1,170,914	911,246
Firm:	103	710	331,409	637,687
Corporation:	41	1,371	2,336,240	1,332,384
Per cent of total:				
Individual.....	100.0	100.0	100.0	100.0
Individual.....	57.9	34.5	26.4	30.0
Firm.....	30.1	22.4	21.0	22.3
Corporation.....	12.0	43.2	52.6	46.8
Printing and publishing, 1909.....	598	1,698	\$3,988,542	\$2,984,419
Individual:	397	647	1,233,929	989,002
Firm:	109	265	551,112	429,366
Corporation:	87	780	2,197,781	1,561,926
Other:	5	6	5,720	4,125
Per cent of total:				
Individual.....	100.0	100.0	100.0	100.0
Individual.....	66.4	38.1	30.9	33.1
Firm.....	18.2	15.6	13.8	14.4
Corporation.....	14.5	45.9	55.1	52.3
Other.....	0.8	0.4	0.1	0.1

¹ Less than one-tenth of 1 per cent.
² Includes the group "Corporation," to avoid disclosure of individual operations.
³ Includes the group "Other," to avoid disclosure of individual operations.

Size of establishment.—The tendency for manufacturing to become concentrated in large establishments, or the reverse, is a matter of interest from the standpoint of industrial organization. In order to throw some light upon it the following table groups the establishments according to the value of their products. The table also shows the average size of establishments for all industries combined and for important industries separately as measured by the

INDUSTRY AND VALUE OF PRODUCTS.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.
ALL INDUSTRIES:				
1909.....	2,310	13,143	\$53,682,405	\$19,529,511
1904.....	1,123	5,456	24,459,107	8,065,155
Less than \$5,000:				
1909.....	1,182	1,668	2,675,597	1,792,560
1904.....	612	700	1,430,330	999,858
\$5,000 and less than \$20,000:				
1909.....	727	2,863	7,194,668	4,142,194
1904.....	326	1,382	3,124,083	1,847,463
\$20,000 and less than \$100,000:				
1909.....	295	3,908	13,057,808	5,877,865
1904.....	125	1,460	5,720,060	2,188,556
\$100,000 and less than \$1,000,000:				
1909.....	102	4,406	25,870,562	7,001,117
1904.....	60	1,854	14,184,034	5,029,278
\$1,000,000 and over:				
1909.....	4	298	4,884,270	715,775
Per cent of total:				
1909.....	100.0	100.0	100.0	100.0
1904.....	100.0	100.0	100.0	100.0
Less than \$5,000:				
1909.....	51.2	12.7	5.0	9.2
1904.....	54.5	13.9	5.8	12.4
\$5,000 and less than \$20,000:				
1909.....	31.5	21.8	13.4	21.2
1904.....	29.0	25.3	12.8	22.0
\$20,000 and less than \$100,000:				
1909.....	12.8	29.7	24.3	30.1
1904.....	11.1	26.8	23.4	27.1
\$100,000 and less than \$1,000,000:				
1909.....	4.4	33.5	48.2	35.8
1904.....	5.3	34.0	58.0	37.6
\$1,000,000 and over:				
1909.....	0.2	2.3	9.1	3.7
Average per establishment:				
1909.....	6	5	\$23,239	\$8,454
1904.....	5	5	21,780	7,182
Bread and other bakery products, 1909.....	252	418	\$1,794,113	\$825,098
Less than \$5,000:	135	77	323,997	154,495
1909.....	101	210	895,674	420,209
1904.....	16	131	574,442	250,394
Per cent of total:				
1909.....	100.0	100.0	100.0	100.0
1904.....	53.6	18.4	18.1	18.7
1909.....	40.1	50.2	49.9	50.9
1904.....	6.3	31.3	32.0	30.3
Average per establishment:				
1909.....	3	2	\$7,119	\$3,274
Flour-mill and gristmill products, 1909.....	295	842	\$19,144,475	\$2,651,580
Less than \$5,000:	82	55	240,320	52,550
1909.....	103	121	1,147,394	231,804
1904.....	63	109	3,000,735	491,723
\$5,000 and less than \$20,000:				
1909.....	30	394	11,042,152	1,403,929
1904.....	3	103	3,713,874	472,063
Per cent of total:				
1909.....	100.0	100.0	100.0	100.0
1904.....	27.8	6.5	1.3	2.0
1909.....	36.6	14.4	6.0	8.7
1904.....	21.4	20.1	15.7	18.5
1909.....	13.2	46.8	57.7	52.0
1904.....	1.0	12.2	19.4	17.8
Average per establishment:				
1909.....	3	3	\$64,897	\$8,985
Foundry and machine-shop products, 1909.....	64	457	\$1,371,463	\$784,784
Less than \$5,000:	21	33	58,638	35,401
1909.....	27	121	319,347	211,194
1904.....	13	139	519,010	317,771
\$5,000 and less than \$20,000:				
1909.....	3	164	480,468	217,418
Per cent of total:				
1909.....	100.0	100.0	100.0	100.0
1904.....	32.8	7.2	4.3	4.9
1909.....	42.2	26.5	23.3	28.9
1904.....	20.3	30.4	37.4	40.5
1909.....	4.7	35.9	35.0	27.7
Average per establishment:				
1909.....	7	7	\$21,429	\$12,262
Lumber and timber products, 1909.....	342	3,175	\$4,438,563	\$2,951,317
Less than \$5,000:	200	664	448,807	372,616
1909.....	92	744	894,724	676,469
1904.....	42	995	1,662,859	1,104,353
1909.....	8	772	1,432,173	797,974
Per cent of total:				
1909.....	100.0	100.0	100.0	100.0
1904.....	53.5	20.9	10.1	12.6
1909.....	26.9	23.4	20.2	22.9
1904.....	12.3	31.3	37.5	37.4
1909.....	2.3	24.3	32.3	27.0
Average per establishment:				
1909.....	9	9	\$12,978	\$8,630
Printing and publishing, 1909.....	598	1,698	\$3,988,542	\$2,984,419
Less than \$5,000:	436	507	784,130	784,130
1909.....	133	595	1,198,006	943,119
1904.....	26	444	1,094,833	828,820
1909.....	3	152	729,615	428,350
Per cent of total:				
1909.....	100.0	100.0	100.0	100.0
1904.....	72.9	29.0	24.2	28.3
1909.....	22.2	35.0	30.0	31.6
1904.....	4.3	26.1	27.4	27.8
1909.....	0.5	9.0	18.3	14.4
Average per establishment:				
1909.....	3	3	\$9,070	\$4,991

The totals for all industries are shown for the last two censuses, while for individual industries figures are given for 1909 only.

This table shows that, in 1909, of the 2,310 manufacturing establishments in the state only 4, or two-tenths of 1 per cent, had a value of products exceeding \$1,000,000, while 102 other establishments, or 4.4 per cent, had a value of products exceeding \$100,000. These 106 establishments, however, had an average of 4,704 wage earners, or 35.8 per cent of the total number in all establishments, and reported 57.3 per cent of the total value of products and 39.5 per cent of the total value added by manufacture.

On the other hand, the very small establishments—that is, those having a value of products less than \$5,000—constituted 51.2 per cent of the total number of establishments, but the value of their products amounted to only 5 per cent of the total.

The fact that the average value of products per

establishment increased from \$21,780 in 1904 to \$23,239 in 1909, and the average value added by manufacture from \$7,182 to \$8,454, can not be taken as in itself indicating a tendency toward concentration. The increased values shown may be, and probably are, due in part to the increase that has taken place in the prices of commodities. The average number of wage earners per establishment increased from five in 1904 to six in 1909.

In some respects, and especially from the standpoint of conditions under which persons engaged in manufactures work, the best classification of establishments to bring out the feature of size is a classification according to the number of wage earners employed. The following table shows, for 1909, such a classification for all industries combined and for nine important industries individually, and gives not only the number of establishments falling into each group but also the average number of wage earners employed.

INDUSTRY.	Total.	ESTABLISHMENTS EMPLOYING—								
		No wage earners.	1 to 5 wage earners.	6 to 20 wage earners.	21 to 50 wage earners.	51 to 100 wage earners.	101 to 250 wage earners.	251 to 500 wage earners.	501 to 1,000 wage earners.	Over 1,000 wage earners.
NUMBER OF ESTABLISHMENTS.										
All industries.....	2,310	262	1,597	352	68	20	9	1	1	.....
Bread and other bakery products.....	252	58	181	13	14	.....	.....	.....	.....	.....
Brick and tile.....	38	1	15	2	9	4	.....	.....	.....	.....
Butter, cheese, and condensed milk.....	19	1	15	2	1	.....	.....	.....	.....	.....
Flour-mill and gristmill products.....	295	44	216	31	3	1	.....	.....	.....	.....
Foundry and machine-shop products.....	64	2	40	19	1	2	.....	.....	.....	.....
Ice, manufactured.....	77	.....	53	23	1	.....	.....	.....	.....	.....
Lumber and timber products.....	342	3	212	103	14	8	1	1	.....	.....
Oil, cottonseed, and cake.....	39	.....	4	27	8	.....	.....	.....	.....	.....
Printing and publishing.....	598	100	442	46	9	2	.....	.....	.....	.....
All other industries.....	686	54	423	76	22	3	8	.....	1	.....
AVERAGE NUMBER OF WAGE EARNERS.										
All industries.....	13,143	3,315	3,724	2,136	1,326	1,635	253	754	.....	.....
Bread and other bakery products.....	418	296	122	.....	.....	.....	.....	.....	.....	.....
Brick and tile.....	730	37	163	288	252	.....	.....	.....	.....	.....
Butter, cheese, and condensed milk.....	62	26	14	22	.....	.....	.....	.....	.....	.....
Flour-mill and gristmill products.....	842	370	331	83	62	.....	.....	.....	.....	.....
Foundry and machine-shop products.....	457	99	194	43	121	.....	.....	.....	.....	.....
Ice, manufactured.....	449	173	250	20	.....	.....	.....	.....	.....	.....
Lumber and timber products.....	3,176	589	1,100	441	542	250	253	.....	.....	.....
Oil, cottonseed, and cake.....	581	16	363	202	.....	.....	.....	.....	.....	.....
Printing and publishing.....	1,098	363	432	281	122	.....	.....	.....	.....	.....
All other industries.....	4,731	340	765	750	237	1,385	.....	754	.....	.....
PER CENT OF AVERAGE NUMBER OF WAGE EARNERS.										
All industries.....	100.0	25.2	28.3	16.3	10.1	12.4	1.9	5.7	.....	.....
Bread and other bakery products.....	100.0	70.8	29.2	.....	.....	.....	.....	.....	.....	.....
Brick and tile.....	100.0	5.1	21.0	39.5	34.5	.....	.....	.....	.....	.....
Butter, cheese, and condensed milk.....	100.0	41.9	22.6	35.5	.....	.....	.....	.....	.....	.....
Flour-mill and gristmill products.....	100.0	44.7	39.3	9.9	6.2	.....	.....	.....	.....	.....
Foundry and machine-shop products.....	100.0	21.7	42.4	9.4	20.5	.....	.....	.....	.....	.....
Ice, manufactured.....	100.0	38.5	65.7	5.8	.....	.....	.....	.....	.....	.....
Lumber and timber products.....	100.0	18.6	34.6	13.0	17.1	7.9	8.0	.....	.....	.....
Oil, cottonseed, and cake.....	100.0	2.8	62.5	34.8	.....	.....	.....	.....	.....	.....
Printing and publishing.....	100.0	50.8	25.4	10.5	7.2	.....	.....	.....	.....	.....
All other industries.....	100.0	17.8	16.2	15.9	5.0	29.3	.....	15.9	.....	.....

Of the 2,310 establishments reported for all industries, 11.3 per cent employed no wage earners; 69.2 per cent, from 1 to 5; 15.2 per cent, from 6 to 20; 2.9 per cent, from 21 to 50; and 1.3 per cent, 51 or over. The most numerous single group consists of the 1,598 establishments employing from 1 to 5 wage earners, and the next, of the 352 establishments employing from 6 to 20 wage earners. One establishment em-

ployed over 250 wage earners and one employed over 500. Of the total number of wage earners, almost seven-tenths were in establishments employing under 51 wage earners. The single group employing the largest number of wage earners was the group comprising establishments employing from 6 to 20, which gave employment to 3,724 wage earners, or 28.3 per cent of the total.

Expenses.—As stated in the Introduction, the census does not purport to furnish figures that can be used for determining the cost of manufacture and profits. Facts of interest can, however, be brought out concerning the relative importance of the different classes of expenses which make up the total.

The following table shows, in percentages, for 1909, the distribution of expenses among the classes indicated for all industries combined and for certain important industries separately. The figures on which the percentages are based appear in Table II, page 1014.

INDUSTRY.	PER CENT OF TOTAL EXPENSES REPORTED.			
	Salaries.	Wages.	Materials.	Miscellaneous expenses.
All industries.....	4.3	15.3	72.3	8.0
Bread and other bakery products.....	2.1	18.4	70.7	8.8
Brick and tile.....	8.0	50.1	29.9	12.0
Butter, cheese, and condensed milk.....	1.7	3.4	86.6	8.3
Flour-mill and gristmill products.....	1.8	2.6	91.8	3.7
Foundry and machine-shop products.....	6.8	30.2	55.4	7.0
Ice, manufactured.....	11.2	29.9	34.0	24.8
Lumber and timber products.....	5.4	36.1	42.3	16.3
Oil, cottonseed, and cake.....	4.1	4.7	85.2	6.1
Printing and publishing.....	15.1	33.7	32.4	18.8
All other industries.....	4.7	23.7	68.3	8.4

This table shows that, for all industries combined, 72.3 per cent of the total expenses was incurred for materials, 19.6 per cent for services—that is, salaries and wages—and but 8 per cent for other purposes. As would be expected, these proportions vary greatly in the different industries.

Engines and power.—The next table shows, for all industries combined, the number of engines or other motors, according to their character, employed in generating power (including electric motors operated by purchased current), and their total horsepower at the censuses of 1909, 1904, and 1899. It also shows separately the number and horsepower of electric motors, including those operated by current generated in the manufacturing establishments.

The table indicates that there was an increase from 1904 to 1909 in all forms of power except that generated by water motors and the forms of owned and rented power included under the head of "Other." Of the total increase of 41,531 horsepower from 1904 to 1909, 28,946 horsepower, or 69.7 per cent, was in power generated by steam engines. Notwithstanding this large actual increase, the proportion of power shown for steam engines decreased from 96.4 per cent in 1899 to 79.6 per cent in 1909. The more general use of gas engines is shown by the increase in the number of such engines from 48 in 1899 to 539 in 1909, and the increase in their indicated capacity from 200 horsepower in 1899 to 8,676 horsepower in

1909. The figures also show that the practice of renting electric power is on the increase, 5,281 horsepower, or 7.4 per cent of the total primary power, being rented electric power in 1909, as against 597 horsepower, or 2 per cent, in 1904, while none was reported in 1899.

The use of electric motors for the purpose of applying the power generated within the establishments is also shown to be rapidly increasing, the horsepower of such motors increasing from 12 in 1899 to 2,606 in 1909.

POWER.	NUMBER OF ENGINES OR MOTORS.			HORSEPOWER.			PER CENT DISTRIBUTION OF HORSEPOWER.		
	1909	1904	1899 ¹	1909	1904	1899 ¹	1909	1904	1899
Primary power, total.....	2,265	590	287	71,139	29,608	11,572	100.0	100.0	100.0
Owned.....	1,407	500	267	65,791	28,851	11,507	92.5	97.4	99.4
Steam.....	862	371	212	56,643	27,697	11,151	79.6	93.5	96.4
Gas.....	539	214	48	8,676	989	200	12.2	3.3	1.7
Water wheels.....	5	3	7	470	105	156	0.7	0.4	1.3
Water motors.....	1	2	(²)	2	4	(²)	(²)	(²)	(²)
Other.....					56				0.2
Rented.....	858	(²)	(²)	5,348	757	65	7.5	2.6	0.6
Electric.....	858	(²)	(²)	5,281	597	(²)	7.4	2.0	
Other.....				67	160	65	0.1	0.5	0.6
Electric motors.....	985	43	3	7,887	910	12	100.0	100.0	100.0
Run by current generated by establishment.....	127	43	3	2,606	313	12	33.0	34.4	100.0
Run by rented power.....	858	(²)	(²)	5,281	597	(²)	67.0	65.6	

¹ Includes the neighborhood industries and hand trades, omitted in 1904 and 1909.
² Not reported. ³ Less than one-tenth of 1 per cent.

Fuel.—Closely related to the question of kind of power employed is that of the fuel consumed in generating this power, or otherwise used as material in the manufacturing processes. The following table shows the quantity of each kind of fuel used in 1909 for all industries combined and for certain selected industries:

INDUSTRY.	An-thra-cite coal (tons).	Bitumi-nous coal (tons).	Coke (tons).	Wood (cords).	Oil, in-cluding gaso-line (bar-rels).	Gas (1,000 feet).
All industries.....	9,972	296,826	4,279	13,268	165,016	9,866,461
Bread and other bakery products.....	11	794	125	4,733	38	55,849
Brick and tile.....		29,115		3,198	6	1,732,505
Butter, cheese, and condensed milk.....		3,882				1,040
Cars and general shop construction and repairs by steam-railroad companies.....	616	23,879	392	300	1,510	
Flour-mill and gristmill products.....	406	47,077		1,226	16,054	138,737
Foundry and machine-shop products.....	27	914	2,359	5	908	51,689
Ice, manufactured.....		53,808		100	9,887	1,052,781
Lumber and timber products.....		7,616		101	151	10,589
Oil, cottonseed, and cake.....		23,516		1,564	25,708	203,066
Petroleum, refining.....					44,515	216,753
Printing and publishing.....	35	872	14	244	834	38,112
Smelting and refining, zinc.....	8,823	36,867	1,230			4,617,865
All other industries.....	54	68,486	159	1,797	65,605	1,747,395

NOTE.—In addition, there were 49 tons of other varieties of fuel reported.

SUPPLEMENTARY DATA REGARDING IMPORTANT INDUSTRIES.

(With statistics for laundries and custom sawmills and gristmills.)

For certain industries the Census Bureau collects, by means of special schedules, details regarding the quantity and cost of materials and the quantity and value of products and other information for securing which no provision is made on the general schedule. Certain data of this character for four important industries in Oklahoma are here presented.

Flour-mill and gristmill products.—This industry, which is dependent upon the cereal crop of the state for its raw materials, has shown a substantial growth. The statistics include only those mills which are engaged mainly in merchant milling, excluding custom mills, generally small, which grind exclusively for local consumption and for toll. The figures for these custom mills are shown separately on page 1011.

The following tabular statement gives the quantity and value of the different products for 1909, 1904, and 1899:

PRODUCT.	1909	1904	1899
Total value	\$19,144,475	\$12,018,923	\$4,712,953
Wheat flour:			
White—			
Barrels.....	2,194,165	1,959,847	1,185,977
Value.....	\$10,915,747	\$8,876,240	\$3,508,493
Graham—			
Barrels.....	10,874	2,470	(1)
Value.....	\$40,620	\$11,893	(1)
Corn meal and corn flour:			
Barrels.....	382,721	206,223	259,680
Value.....	\$1,124,244	\$497,903	\$369,168
Rye flour:			
Barrels.....	149	458	950
Value.....	\$698	\$2,152	\$2,527
Feed:			
Tons.....	204,481	76,559	36,854
Value.....	\$5,062,822	\$1,398,421	\$460,765
Offal:			
Tons.....	81,524	78,472	32,659
Value.....	\$1,698,093	\$1,232,632	\$369,378
All other products	\$299,341	\$1,182	\$12,622

¹ Not reported separately.

From 1899 to 1909 there was an increase of \$14,431,522, or over 300 per cent, in the total value of products reported for this industry. The greater part of this increase was in the value of white flour, which shows a gain of \$7,410,250, or over 200 per cent, and in the value of feed, which shows a gain of \$4,612,057, or a value over ten times that reported in 1899. In 1909 the value of white flour represented 57 per cent of the total value of all flour-mill and gristmill products, while the value of offal, which consists chiefly of the by-products of flour mills, represented 8.9 per cent of the total. Feed, which is usually ground from corn, oats, etc., shows marked increases both in quantity and in value. The quantity of corn meal and corn flour increased 85.6 per cent during the five-year period 1904-1909, and its value 125.8 per cent. Rye flour, an unimportant product, was the only product showing a decrease in quantity and value.

Oil, cottonseed, and cake.—Measured by value of products, this industry was second in the state in 1909. In this year the state ranked eighth among the cotton-growing states as regards its crop of cotton and in the value of its crude cottonseed products. The following table gives the quantity of seed crushed and the quantities of the resultant crude products for the census years 1909, 1904, and 1899:

MATERIAL OR PRODUCT.	QUANTITY.		
	1909	1904	1899
Cotton seed crushed..... tons..	186,352	168,454	52,840
Crude products manufactured:			
Oil..... gallons..	6,817,974	6,384,973	1,868,906
Meal and cake..... tons..	78,600	67,417	18,666
Hulls..... tons..	62,290	62,264	25,498
Linters..... pounds..	9,584,227	7,169,960	1,199,526

The statistics in this table include the products of all establishments which crushed cotton seed during the year. While the quantity of seed crushed increased 218.8 per cent from 1899 to 1904, it increased only 10.6 per cent from 1904 to 1909. The average amount crushed per mill increased from 4,403 tons in 1899 to 7,019 tons in 1904, but decreased to 4,778 tons in 1909. Of the 39 mills reported in 1909 as crushing seed, there was only 1 which crushed less than 1,000 tons of seed during the census year; 6 crushed 1,000 but less than 2,000 tons; 18 crushed 2,000 but less than 5,000 tons; 10 crushed 5,000 but less than 10,000 tons; and 4 crushed 10,000 but less than 20,000 tons.

The quantities of the various products obtained in 1909 per ton of seed as received at the mill were as follows: Crude oil, 36.6 gallons; meal and cake, 844.5 pounds; hulls, 668.5 pounds; and linters, 51.4 pounds. The proportions which the weight of the several products represented of the total weight of the seed when received at the mill were as follows: Crude oil, 13.7 per cent; meal and cake, 42.2 per cent; hulls, 33.4 per cent; and linters, 2.6 per cent. The weight of hulls per ton of seed crushed decreased from 965.1 pounds in 1899 to 739.2 pounds in 1904 and 668.5 pounds in 1909, while there was an increase in the weight of meal and cake and linters and a small net increase in that of oil for the period as a whole. The amount of oil secured for each ton of seed crushed was 35.4 gallons in 1899, 37.9 gallons in 1904, and 36.6 gallons in 1909.

Lumber and timber products.—Oklahoma showed from 1899 to 1909 a greater relative increase in the quantity of lumber cut than any other state in the Union, the output in 1909 being more than ten times that of 1899. The table following shows the quantity of rough lumber, lath, and shingles produced in the sawmill branch of the industry for 1909 and 1899.

Of the total cut of rough lumber in 1909, amounting to 225,730 M feet board measure, 141,677 M feet was softwood, principally yellow pine, and 84,053 M feet was hardwood, of which 60,964 M feet, or 72.5 per cent, was oak.

PRODUCT.	QUANTITY.	
	1900	1899
Rough lumber..... M feet b. m.	225,730	22,104
Lath..... thousands..	1,233	75
Shingles..... thousands..	4,635	103

Printing and publishing.—This industry as a whole shows considerable growth during the last 10 years as measured by the financial statistics. The statistics for newspapers and other publications summarized in the following statement also show a large increase in number and circulation during this period:

PERIOD OF ISSUE.	NUMBER OF PUBLICATIONS.			AGGREGATE CIRCULATION PER ISSUE.		
	1900	1904	1899	1909	1904	1899
Total.....	593	453	187	857,959	533,063	170,218
Daily.....	67	44	15	185,479	74,451	18,024
Sunday.....	11	8	13	77,326	43,802	(1)
Semiweekly.....	1	2	1	1,750	8,000	800
Weekly.....	499	387	152	512,229	352,013	145,844
Monthly.....	12	10	5	39,225	29,797	5,050
All other classes.....	3	2	1	41,950	25,000	

¹ Included in circulation of dailies.

The number of publications in 1909 was more than three times that in 1899, and the aggregate circulation per issue was more than five times as great. The weekly publications are by far the most important class in the state, measured either by number or by aggregate circulation per issue. In both respects they show a substantial increase for each of the five-year periods. In 1909 they formed 84.1 per cent of all publications and reported 59.7 per cent of the aggregate circulation per issue. All of the other classes of publications, with the exception of the semiweeklies, show large gains in their aggregate circulation from 1904 to 1909. All of the publications were in English except five weeklies, one of which was published in Bohemian and four in German.

Laundries.—Statistics for steam laundries are not included in the general tables or in the totals for manufacturing industries. There were 93 such establishments in the state, 9 of which were in Oklahoma City, 6 in Muskogee, 5 in Tulsa, 3 in Enid, and 2 each in Chickasha, Guthrie, McAlester, and Shawnee.

The most common form of ownership was the individual, with 47 establishments. The firm and corporate forms of ownership were represented by 27 and 19 establishments, respectively. Eighteen establishments had receipts for the year's business of less than \$5,000; 58, \$5,000 but less than \$20,000; and 17, \$20,000 but less than \$100,000.

The next statement summarizes the statistics.

Number of establishments.....	93
Persons engaged in the industry.....	1,301
Proprietors and firm members.....	105
Salaried employees.....	95
Wage earners (average number).....	1,101
Primary horsepower.....	1,484

Capital.....	\$781,531
Expenses.....	923,217
Services.....	563,685
Materials.....	200,679
Miscellaneous.....	163,853
Amount received for work done.....	1,197,978

The number of wage earners employed each month and the per cent which this number represented of the greatest number employed in any month were as follows:

MONTH.	WAGE EARNERS.		MONTH.	WAGE EARNERS.	
	Number.	Per cent of maximum.		Number.	Per cent of maximum.
January.....	893	84.2	July.....	1,160	93.4
February.....	995	84.4	August.....	1,167	99.0
March.....	1,022	86.7	September.....	1,179	100.0
April.....	1,040	88.2	October.....	1,171	99.3
May.....	1,064	90.2	November.....	1,151	97.6
June.....	1,099	93.2	December.....	1,167	99.0

The different kinds of primary power, the number of engines or motors, and the horsepower used in 1909 are shown in the following statement:

KIND.	Number of engines or motors.	Horse power.
Primary power, total.....		1,484
Owned:		
Steam.....	176	1,195
Gas.....	8	53
Rented:		
Electric.....	66	231
Other.....		5

The kind and amount of fuel used are shown in the following tabular statement:

KIND.	Unit.	Quantity.
Anthracite coal.....	Tons.....	696
Bituminous coal.....	Tons.....	9,377
Wood.....	Cords.....	393
Oil.....	Barrels.....	1,346
Gas.....	1,000 feet.....	224,175

Custom sawmills and gristmills.—Statistics for custom sawmills and gristmills are not included in the general tables or in the totals for manufacturing industries, but are presented in the following summary:

	Custom sawmills.	Custom gristmills.
Number of establishments.....	4	147
Persons engaged in the industry.....	12	523
Proprietors and firm members.....	6	182
Salaried employees.....		4
Wage earners (average number).....	7	137
Primary horsepower.....	118	4,123
Capital.....	\$5,325	\$180,516
Expenses.....	2,321	389,037
Services.....	1,908	12,906
Materials.....	65	1,369,140
Miscellaneous.....	848	6,992
Value of products.....	4,725	1,465,348

¹ Includes estimate of all grain ground. A similar estimate for value of lumber sawed by custom sawmills is impracticable.

TABLE I.—COMPARATIVE SUMMARY FOR 1909, 1904, AND 1899.
THE STATE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES.

INDUSTRY.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
			Total.	Proprietors and firm members.	Salaried employees.	Wage earners (average number).							
Expressed in thousands.													
STATE—All industries.....	1909	2,310	18,034	2,698	2,193	13,143	71,139	\$38,873	\$2,045	\$7,240	\$34,153	\$53,662	\$19,529
	1904	1,123	7,456	1,187	813	5,456	29,608	16,124	718	2,799	16,394	24,459	8,065
	1899	495	.....	.....	269	2,381	11,572	4,054	219	884	5,430	8,134	2,704
Artificial stone.....	1909	129	426	168	22	230	166	304	14	120	233	539	306
	1904	14	49	11	5	33	13	44	4	18	32	79	47
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bread and other bakery products.....	1909	252	766	298	50	418	223	574	29	252	909	1,794	825
	1904	121	305	144	4	157	27	225	1	88	410	692	282
	1899	18	62	20	.....	32	3	44	.....	12	44	96	52
Brick and tile.....	1909	38 ¹	823	32	61	730	3,733	1,303	61	378	226	1,029	803
	1904	50	482	47	34	401	3,029	733	34	186	128	510	332
	1899	49	288	64	6	218	378	136	5	81	31	185	154
Brooms.....	1909	23	109	27	6	76	51	122	6	43	145	248	103
	1904	12	57	15	.....	42	20	28	.....	19	31	72	41
	1899	2 ⁷	14	6	.....	8	.....	14	.....	2	4	10	6
Butter, cheese, and condensed milk.....	1909	19	101	17	22	62	427	197	19	36	628	1,150	222
	1904	3	16	4	1	11	91	16	(⁶)	6	66	89	23
	1899	5	8	.....	.....	3	32	13	.....	2	14	19	5
Carriages and wagons and materials.....	1909	10	158	22	13	123	319	172	12	72	81	233	152
	1904	2 ⁸	52	8	1	43	15	54	1	23	26	67	41
	1899	2 ⁷	.....	.....	.....	27	.....	25	.....	9	11	37	26
Copper, tin, and sheet-iron products.....	1909	62	344	70	32	233	40	305	30	184	411	799	388
	1904	18	95	23	3	69	.....	90	2	52	107	215	108
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Flour-mill and gristmill products.....	1909	295	1,679	533	304	842	16,400	7,091	323	473	16,493	19,144	2,651
	1904	108	911	101	193	617	9,013	4,131	186	331	10,187	12,019	1,832
	1899	66	.....	.....	105	346	4,704	1,448	82	165	3,885	4,713	828
Foundry and machine-shop products.....	1909	64	587	65	65	457	1,113	1,437	71	320	587	1,371	784
	1904	26	153	33	4	121	332	268	3	77	76	233	157
	1899	2 ⁶	34	10	1	23	51	39	(⁵)	11	31	59	28
Ice, manufactured.....	1909	77	614	30	135	449	10,359	2,719	101	270	307	1,273	966
	1904	44	285	23	65	197	5,348	1,341	43	107	121	528	407
	1899	9	81	7	19	55	700	227	13	29	31	112	81
Leather goods.....	1909	15	88	15	7	60	26	140	7	62	226	375	149
	1904	14	85	12	8	65	.....	179	11	45	153	280	127
	1899	8	.....	.....	5	41	.....	53	5	23	95	157	62
Lumber and timber products.....	1909	342	3,809	429	205	3,175	12,397	3,603	189	1,269	1,487	4,439	2,952
	1904	2 ⁶⁰	567	78	31	453	2,361	512	31	245	437	1,017	539
	1899	73	.....	.....	24	539	.....	405	19	159	315	684	369
Marble and stone work.....	1909	41	220	50	23	147	257	227	20	111	187	418	231
	1904	11	32	17	2	63	95	60	2	34	34	106	72
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oil, cottonseed, and cake.....	1909	29	770	3	186	581	10,720	5,071	202	235	4,245	5,187	943
	1904	24	608	1	109	496	6,005	2,590	110	182	2,353	3,109	756
	1899	12	263	.....	41	222	2,286	719	43	70	605	874	289
Printing and publishing.....	1909	598	2,945	661	586	1,698	1,664	3,734	467	1,044	1,004	3,989	2,985
	1904	423	1,790	486	174	1,139	652	1,700	135	574	473	2,101	1,623
	1899	2 ¹⁰⁰	757	189	46	522	141	510	32	189	143	663	515
Slaughtering and meat packing.....	1909	7	36	7	16	63	236	290	18	43	749	889	140
	1904	4	46	6	1	39	52	125	4	22	239	294	55
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
All other industries.....	1909	290	4,509	262	460	3,787	13,002	10,934	470	2,328	5,875	10,805	4,930
	1904	133	1,861	178	178	1,505	2,555	4,023	146	790	1,521	3,043	1,527
	1899	75	.....	.....	22	345	.....	421	20	142	216	525	300

¹ Not reported separately.

² Excluding statistics for one establishment, to avoid disclosure of individual operations.

³ Less than \$500.

⁴ Figures can not be shown without disclosing individual operations.

⁵ Excluding statistics for two establishments, to avoid disclosure of individual operations.

MANUFACTURES—OKLAHOMA.

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TABLE I.—COMPARATIVE SUMMARY FOR 1909, 1904, AND 1899—Continued.

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES.

INDUSTRY AND CITY.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
			Total.	Proprietors and firm members.	Salaried employees.	Wage earners (average number).							
OKLAHOMA CITY—All industries..	1909 1904 1899	171 89 36	2,087 936	148 71	541 145 33	1,398 720 220	4,132	\$4,482 3,922 473	\$483 142 24	\$973 422 101	\$5,146 2,362 517	\$7,868 3,671 845	\$2,722 1,309 328
Artificial stone.....	1909 1904 1899	15	61	19	8	34	48	81	6	20	37	97	60
Bread and other bakery products.....	1909 1904 1899	17 9 3	130 38	17 9	28	85 29 5	39	96 32 18	15	59 19 4	214 49 16	365 88 38	151 39 22
Copper, tin, and sheet-iron products.....	1909 1904 1899	5 6	63 37	5 6	10 3	48 28	23	87 26	10 2	37 22	130 55	212 76	82 41
Flour-mill and gristmill products.....	1909 1904 1899	7 3 4	116 65	2	39 18 14	75 47 27	1,187	738 410 216	46 18 9	56 28 12	1,839 1,049 383	2,087 1,227 508	248 173 125
Foundry and machine-shop products.....	1909 1904 1899	7 6 4	111 62	6 7	18 1	87 55 14	185	286 140 26	18	63 35 6	67 37 11	222 96 21	125 59 10
Ice, manufactured.....	1909 1904 1899	5	57		17	40	909	291	13	26	36	133	97
Lumber and timber products.....	1909 1904 1899	8 4	132 87	7 3	25 13	150 71	277	338 190	31 17	106 34	193 142	388 282	195 90
Marble and stone work.....	1909 1904 1899	5	53	8	6	39	19	61	6	33	78	140	62
Patent medicines and compounds and druggists' preparations.	1909 1904 1899	8 3	24 14	8 2	5 4	11 8	8	31 20	3 4	6 3	9 6	35 24	26 18
Printing and publishing.....	1909 1904 1899	44 18 4	689 180	40 14	282 50 7	367 110 40	347	1,065 222 33	221 40 5	288 70 20	419 80 11	1,260 328 54	850 248 43
Tobacco manufactures.....	1909 1904 1899	6 8	11 24	6 9		5 15		4 12		4 6	8 16	19 34	11 18
All other industries.....	1909 1904 1899	44 32 21	590 429	30 21	103 57 11	457 351 125	1,090	1,404 2,870 180	114 61 10	275 205 59	2,086 948 96	2,901 1,566 224	815 618 128

CITIES OF 10,000 TO 50,000 INHABITANTS—ALL INDUSTRIES COMBINED.

Chickasha.....	1909 1904 1899	30	465	30	71	364	1,488	\$1,117	\$73	\$242	\$1,285	\$1,867	\$582
Enid.....	1909 1904 1899	65	455	55	97	303	1,722	1,097	76	191	1,807	2,453	646
Guthrie.....	1909 1904 1899	34 34 33	385 410	32 28	71 49 39	282 333 241	1,231	1,092 794 371	76 46 32	163 186 99	948 701 337	1,443 1,201 640	495 500 312
McAlester.....	1909 1904 1899	29	240	28	32	180	895	619	29	101	195	451	256
Muskogee.....	1909 1904 1899	64	554	61	112	381	1,421	969	106	241	1,478	2,279	801
Shawnee.....	1909 1904 1899	40	1,147	35	98	1,014	1,801	1,532	80	615	1,163	2,081	918
Tulsa.....	1909 1904 1899	53	585	56	67	462	1,526	1,153	72	315	874	1,503	639

¹ Figures can not be shown without disclosing individual operations.
² Not reported separately.

³ Less than \$500.
⁴ Figures not available.

TABLE II.—DETAIL STATEMENT FOR

INDUSTRY.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.										WAGE EARNERS—NUMBER DEC. 15, OR NEAREST REPRESENTATIVE DAY.					Primary horse-power.
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks.		Wage earners.					Total.	16 and over.		Under 10.		
					Male.	Female.	Average number.	Number.		Male.	Female.		Male.	Female.			
								Maximum month.	Minimum month.								
1 All industries.....	2,310	18,034	2,698	932	1,059	202	13,143	13,143	14,659	11,782	(1)	(1)	(1)	(1)	(1)	71,139	
2 Artificial stone.....	129	426	168	13	8	1	236	Je	282	Ja	128	329	328			168	
3 Bread and other bakery products.....	252	766	298	11	26	13	418	De	433	Ap	403	449	400	37	1	223	
4 Brick and tile.....	38	823	32	39	20	2	730	Jy	932	Ja	369	943	941			3,733	
5 Brooms.....	23	109	27	1	4	1	76	Se ²	81	Jy	69	83	80	2	1	51	
6 Butter, cheese, and condensed milk.....	19	101	17	10	6	6	62	Jy	83	Ja	40	60	40	9	1	427	
7 Canning and preserving.....	3	10	1	2			7	Se	33	Ja ³	0	30	9	13	5	41	
8 Carriages and wagons and materials.....	19	158	22	8	4	1	123	Jy	134	Ja	114	121	121			319	
9 Cars and general shop construction and repairs by steam-railroad companies.	8	1,495		38	43	2	1,412	De	1,612	Mh	1,268	1,599	1,564	1	34	957	
10 Cars and general shop construction and repairs by street-railroad companies.	4	51		3	1		47	De	56	Fe ²	35	56	56			110	
11 Clothing, men's, including shirts.....	3	122		6	3		113	Oc ²	118	Jy	103	122	5	117		13	
12 Confectionery.....	11	64	13	3	8	1	39	De	60	Ja ²	21	61	38	21	2	26	
13 Copper, tin, and sheet-iron products.....	62	344	79	10	21	1	233	Se	268	Ap	202	245	242	1	2	46	
14 Flour-mill and gristmill products.....	295	1,679	533	126	153	25	842	Oc	922	Je	741	936	934			16,400	
15 Foundry and machine-shop products.....	64	587	65	35	22	8	457	Au	491	My	420	512	512			16,400	
16 Furnishing goods, men's.....	5	33	4	7			22	Se	38	Ja ²	5	42	5	35	2	1,113	
17 Furniture and refrigerators.....	5	73	5	1	7		60	De	92	Fe	44	92	90	2		210	
18 Gas, illuminating and heating.....	6	59	1	7	10	3	38	Ja ²	38	Fe ²	37	38	38			181	
19 Ice, manufactured.....	77	614	30	81	45	9	449	Jy	745	Fe	195	475	470			10,359	
20 Leather goods.....	15	88	15	6		1	66	Jy	71	Oc	58	72	72			26	
21 Lumber and timber products.....	342	3,809	429	110	84	11	3,175	De	3,401	Ja	2,837	4,045	4,035	1	9	12,397	
22 Marble and stone work.....	41	220	50	6	15	2	147	Au ²	165	Fe	121	165	165			257	
23 Mattresses and spring beds.....	7	63	6	6	1	1	49	De	72	Ja	36	72	62	10		151	
24 Oil, cottonseed, and cake.....	39	770	3	106	78	2	581	No	1,266	Jy	115	1,294	1,294			10,723	
25 Patent medicines and compounds and druggists' preparations.	13	52	16	3	5	6	22	Ap ²	25	Ja ²	20	22	14	8		8	
26 Petroleum, refining.....	9	129	2	20	31	1	75	Oc	92	My	63	91	91			231	
27 Printing and publishing.....	598	2,945	661	160	352	74	1,698	De	1,831	Ja	1,626	1,875	1,497	326	52	1,664	
28 Slaughtering and meat packing.....	7	86	7	6	8	2	63	De	91	Fe	43	91	91			236	
29 Smelting and refining, zinc.....	3	593		11	12	4	566	Je	626	Ja	481	608	608			1,131	
30 Tobacco manufactures.....	29	75	30		1		44	De	60	Je	38	65	45	10	4		
31 Wall plaster.....	11	303		21	16	7	259	Oc	295	Ja	230	297	297			1,721	
32 All other industries.....	173	1,387	184	76	75	18	1,034									8,150	

¹ No figures given for reasons explained in the Introduction.

² Same number reported for one or more other months.

³ None reported for one or more other months.

⁴ All other industries embrace—

Automobiles, including bodies and parts.....	1	Carpets, rag.....	1	Electrical machinery, apparatus, and supplies.....	1
Awnings, tents, and sails.....	5	Cement.....	2	Explosives.....	3
Baking powders and yeast.....	1	Clothing, women's.....	1	Food preparations.....	8
Belted and hose, woven and rubber.....	1	Coffee and spice, roasting and grinding.....	4	Fuel, manufactured.....	1
Bluing.....	1	Cooperage and wooden goods, not elsewhere specified.....	1	Gas and electric fixtures and lamps and reflectors..	1
Boots and shoes, including cut stock and findings..	1	Cordage and twine and jute and linen goods.....	1	Glass.....	1
Boxes, fancy and paper.....	1	Dairymen's, poultryers', and aparlars' supplies..	2	Glass, cutting, staining, and ornamenting.....	1
Buttons.....	1			Hand stamps and stencils and brands.....	2

MANUFACTURES—OKLAHOMA.

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THE STATE, BY INDUSTRIES: 1909.

Capital.	EXPENSES.										Value of products.	Value added by manufacture.	
	Total.	Services.			Materials.		Miscellaneous.						
		Officials.	Clerks.	Wage earners.	Fuel and rent of power.	Other.	Rent of factory.	Taxes, including internal revenue.	Contract work.	Other.			
1	\$36,372,938	\$47,216,432	\$1,136,965	\$908,330	\$7,240,177	\$1,304,757	\$32,848,137	\$255,949	\$306,718	\$373,954	\$2,841,445	\$53,682,405	\$19,529,511
2	303,906	404,987	7,714	6,196	120,457	2,850	230,052	4,882	1,786	455	30,595	538,877	305,975
3	578,647	1,369,818	12,136	16,427	252,265	37,746	931,269	48,576	7,133	.....	64,266	1,794,113	825,098
4	1,303,172	755,490	47,902	12,621	378,360	169,924	66,117	1,754	6,063	2,300	79,865	1,028,682	802,682
5	122,331	205,448	1,020	4,500	42,546	856	144,583	1,459	643	11	9,830	248,337	103,809
6	197,251	1,072,347	12,550	6,072	36,239	14,458	913,842	1,467	1,083	.....	80,630	1,149,545	221,245
7	14,923	2,437	258	.....	739	150	1,108	.....	97	.....	85	2,822	1,564
8	172,487	184,715	10,000	2,410	72,481	3,382	77,492	6,340	1,542	10	11,058	232,890	152,008
9	1,359,022	1,701,861	50,020	38,627	941,923	44,027	597,863	.....	15,787	.....	13,694	1,701,861	1,059,961
10	70,298	64,532	3,600	360	29,540	760	25,227	.....	1,000	.....	4,045	64,532	38,545
11	82,164	185,054	7,080	2,925	42,172	1,343	125,000	2,940	445	.....	3,149	194,000	67,657
12	65,742	97,556	2,685	4,955	16,270	1,371	57,181	5,755	159	.....	0,180	114,719	56,167
13	305,460	671,838	7,935	21,607	184,139	3,339	407,939	11,744	2,594	720	31,821	799,273	387,995
14	7,690,613	17,959,820	154,541	189,745	472,977	173,435	16,319,460	4,347	61,348	.....	604,969	19,144,475	2,651,580
15	1,437,185	1,058,135	59,389	21,051	319,711	25,967	599,712	5,068	8,508	3,777	62,952	1,371,463	784,784
16	10,110	11,061	2,098	.....	2,654	157	5,635	361	.....	.....	156	9,530	3,738
17	163,050	154,224	700	3,500	42,085	2,312	97,667	1,210	923	.....	5,327	205,852	105,873
18	382,131	90,444	6,482	5,105	20,700	40,630	2,942	.....	4,452	.....	10,133	114,851	71,279
19	2,719,197	902,240	73,841	27,372	270,051	195,296	111,760	1,287	32,626	8,147	181,860	1,272,515	965,459
20	140,175	323,135	7,100	350	61,561	521	225,928	4,350	1,900	.....	21,425	375,074	148,625
21	3,602,740	3,518,848	117,028	72,287	1,269,369	26,410	1,460,836	9,233	27,975	277,425	258,285	4,438,563	2,951,317
22	227,313	840,195	7,000	12,735	111,004	4,397	182,662	2,716	1,733	.....	24,948	418,148	231,089
23	105,309	146,111	7,780	400	29,605	2,598	96,641	1,856	260	.....	6,971	153,332	54,093
24	5,071,147	4,955,400	142,050	60,102	235,405	108,784	4,136,715	50	40,156	2,337	259,891	5,186,005	941,106
25	68,050	61,330	2,600	7,450	9,694	113	15,521	1,340	137	750	23,725	65,066	49,432
26	1,056,652	887,617	30,796	25,993	54,011	31,176	544,297	250	3,670	2,184	195,240	1,055,011	479,538
27	3,734,389	3,096,360	199,888	267,214	1,043,968	51,378	952,745	118,635	29,970	72,008	359,954	3,988,542	2,984,419
28	290,162	842,866	7,700	10,408	42,777	6,679	742,143	4,195	1,562	6	27,396	889,237	140,415
29	1,769,488	2,576,882	29,929	14,051	343,453	153,598	1,979,029	.....	10,708	.....	46,114	3,002,233	869,606
30	36,347	68,534	.....	600	20,900	281	34,617	1,448	7,414	.....	3,364	85,544	50,646
31	1,033,670	498,204	22,809	21,871	141,930	52,782	111,842	.....	4,209	.....	52,701	434,604	270,040
32	4,764,187	3,062,897	111,334	72,498	631,141	148,037	1,699,312	14,689	80,205	3,224	352,400	3,602,058	1,754,709

* All other industries embrace—Continued.

Hats and caps, other than felt, straw, and wool.....	1	Millinery and lace goods.....	1	Soda-water apparatus.....	1
Hats, fur-felt.....	1	Mineral and soda waters.....	105	Vinegar and cider.....	2
House-furnishing goods, not elsewhere specified.....	1	Mirrors.....	1	Washing machines and clothes wringers.....	3
Jewelry.....	1	Paint and varnish.....	1	Wirework, including wire rope and cable.....	1
Leather, tanned, curried, and finished.....	2	Photo-engraving.....	2	Wood preserving.....	1
Lims.....	1	Scales and balances.....	1	Wood, turned and carved.....	3
Malt.....	1	Show cases.....	1		

MANUFACTURES—OKLAHOMA.

TABLE III.—DETAIL STATEMENT FOR CITIES OF 50,000 INHABITANTS OR MORE, BY INDUSTRIES, CITIES OF 50,000 INHABITANTS OR MORE, BY INDUSTRIES. OKLAHOMA CITY.

INDUSTRY AND CITY.	Number of establishments	PERSONS ENGAGED IN INDUSTRY.										WAGE EARNERS—NUMBER DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Primary horse-power.
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks.		Wage earners (average number).			Total.	16 and over.		Under 16.			
					Male.	Female.	Total.	16 and over.			Under 16.	Male.	Female.	Male.	Female.	
								Male.	Female.							
1 All industries.....	171	2,087	148	140	339	62	1,398	1,245	145	8	1,575	1,406	160	9	4,132	
2 Artificial stone.....	15	61	19	4	3	1	34	33	.....	1	52	51	.....	.....	48
3 Bread and other bakery products.....	17	130	17	4	19	5	85	78	6	1	92	84	7	1	39	
4 Copper, tin, and sheet-iron products.....	5	63	5	2	7	1	48	48	.....	.....	45	45	.....	.....	23
5 Flour-mill and gristmill products.....	7	116	2	12	23	4	75	75	.....	.....	78	78	.....	.....	1,187
6 Foundry and machine-shop products.....	7	111	6	9	4	5	87	87	.....	.....	103	103	.....	.....	185
7 Ice, manufactured.....	5	57	.....	8	9	.....	40	40	.....	.....	55	55	.....	.....	809
8 Lumber and timber products.....	8	182	7	5	18	2	150	150	.....	.....	174	174	.....	.....	277
9 Marble and stone work.....	5	53	8	1	3	2	39	39	.....	.....	44	44	.....	.....	19
10 Patent medicines and compounds and druggists' preparations.....	8	24	8	1	1	3	11	8	3	.....	12	9	3	.....	8
11 Printing and publishing.....	44	689	40	50	201	31	307	321	42	4	406	355	46	5	347	
12 Tobacco manufactures.....	6	11	6	.....	.....	.....	5	5	.....	.....	7	7	.....	.....	.....
13 All other industries ¹	44	590	30	44	51	8	457	361	94	2	507	401	104	2	1,080	

¹ All other industries embrace: Awnings, tents, and sails, 2; baking powders and yeast, 1; bluing, 1; boxes, fancy and paper, 1; brick and tile, 1; butter, cheese, and condensed milk, 1; carriages and wagons and materials, 2; cars and general construction and repairs by street-railroad companies, 1; clothing, men's, including shirts, 1; coffee and spice, roasting and grinding, 3; confectionery, 2; food preparations, 1; furniture and refrigerators, 1; gas, illuminating and heating, 1; glass, cutting, staining,

CITIES OF 10,000 TO 50,000 INHABITANTS—ALL INDUSTRIES COMBINED.

1 CHICKASHA.....	30	465	30	23	40	8	364	356	5	3	401	392	6	3	1,488
2 ENID.....	65	455	55	44	47	6	303	275	28	.....	322	292	30	.....	1,722
3 GUTHRIE.....	34	385	32	20	40	11	282	247	18	17	355	294	21	20	1,281
4 McALESTER.....	29	240	28	18	7	7	180	164	16	.....	233	212	21	.....	895
5 MUSKOGEE.....	64	554	61	43	58	11	381	360	15	6	420	397	17	6	1,421
6 SHAWNEE.....	40	1,147	35	45	46	7	1,014	937	74	3	1,192	1,101	87	4	1,891
7 TULSA.....	53	585	58	23	36	8	462	428	25	9	676	627	36	12	1,586

MANUFACTURES—OKLAHOMA.

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AND TOTALS FOR ALL INDUSTRIES IN CITIES OF 10,000 BUT LESS THAN 50,000 INHABITANTS: 1909.

CITIES OF 50,000 INHABITANTS OR MORE, BY INDUSTRIES.

OKLAHOMA CITY.

	Capital.	EXPENSES.									Value of products.	Value added by manufacture.	
		Total.	Services.			Materials.		Miscellaneous.					
			Officials.	Clerks.	Wage earners.	Fuel and rent of power.	Other.	Rent of factory.	Taxes, including internal revenue.	Contract work.			Other.
1	\$4,482,138	\$7,354,168	\$206,177	\$276,800	\$973,067	\$115,448	\$5,030,343	\$64,485	\$31,685	\$63,417	\$582,766	\$7,867,884	\$2,722,093
2	81,172	82,226	3,086	2,416	19,553	431	36,556	2,740	193	-----	17,251	96,845	59,868
3	95,710	317,872	5,580	9,020	59,276	4,925	208,720	6,540	1,164	-----	22,647	365,187	161,542
4	87,487	191,313	1,587	8,246	36,760	874	128,987	3,475	154	-----	11,230	212,005	82,144
5	737,863	2,032,328	14,900	30,983	56,222	11,316	1,827,330	870	6,881	-----	83,876	2,086,965	248,319
6	286,356	193,455	11,800	5,820	62,770	3,519	93,315	1,443	2,342	150	12,296	221,768	124,934
7	291,163	105,849	7,550	5,280	25,785	26,901	8,658	-----	3,854	8,147	19,674	132,881	97,322
8	337,675	340,375	9,600	21,607	105,960	1,210	192,241	1,350	3,682	-----	4,725	388,316	194,865
9	61,298	121,894	1,200	4,450	32,666	462	77,552	814	486	-----	4,264	140,318	62,304
10	30,950	26,022	900	1,750	5,804	113	8,910	620	50	-----	7,875	34,750	25,727
11	1,065,498	1,199,873	81,839	139,464	287,551	10,253	408,936	31,933	5,506	49,486	184,905	1,289,104	\$49,915
12	3,720	15,208	-----	-----	4,215	-----	8,354	306	1,383	-----	950	18,825	10,471
13	1,403,406	2,727,753	68,135	47,814	270,505	55,444	2,030,784	14,394	5,970	5,634	223,073	2,900,920	814,692

and ornamenting, 1; hand stamps and stencils and brands, 1; hats, fur-felt, 1; jewelry, 1; leather goods, 3; mattresses and spring beds, 2; millinery and lace goods, 1; mineral and soda waters, 5; mirrors, 1; oil, cottonseed, and cake, 1; petroleum, refining, 1; photo-engraving, 2; show cases, 1; slaughtering and meat packing, 2; soda-water apparatus, 1; wire work, including wire rope and cable, 1.

CITIES OF 10,000 TO 50,000 INHABITANTS—ALL INDUSTRIES COMBINED.

1	\$1,117,277	\$1,654,094	\$34,381	\$38,345	\$241,684	\$34,139	\$1,250,679	\$2,914	\$9,489	\$65	\$42,398	\$1,866,959	\$582,141
2	1,096,912	2,221,861	47,463	28,809	191,468	40,911	1,706,536	11,231	8,988	1,340	124,625	2,453,188	645,741
3	1,092,474	1,286,893	35,674	39,993	162,721	20,125	927,518	4,089	9,933	9,683	77,157	1,442,795	495,152
4	619,039	369,780	19,880	9,183	101,030	25,064	169,648	6,867	4,537	-----	33,571	451,234	256,522
5	958,825	2,059,711	51,510	54,733	240,743	29,394	1,448,554	15,857	10,521	3,966	204,433	2,279,151	801,203
6	1,532,350	1,965,287	57,259	32,004	615,431	46,002	1,116,742	10,304	19,429	1,130	66,986	2,081,477	918,783
7	1,152,891	1,381,375	34,372	37,433	314,547	20,426	853,721	15,404	7,619	1,045	96,808	1,562,642	688,495

OREGON.

INDUSTRIES IN GENERAL.

General character of the state.—Oregon, with a gross area of 96,699 square miles, of which 1,092 represent water surface, ranks ninth in size among the 49 states and territories of continental United States. Its population in 1910 was 672,765, as compared with 413,536 in 1900 and 317,704 in 1890. It ranked thirty-fifth among the 49 states and territories as regards population in 1910 and thirty-sixth in 1900. The density of population of the state was 7 per square mile in 1910, the corresponding figure for 1900 being 4.3.

Portland, with a population of 207,214, and Salem, with a population of 14,094, are the only cities in the state having more than 10,000 inhabitants. Of the entire population of the state, 45.6 per cent resided in cities and incorporated towns having a population of 2,500 or over in 1910, as against 32.2 per cent in 1900.

The northern and western parts of the state are traversed by trunk-line railways with terminals at Portland, from which city the Willamette and Columbia Rivers afford deep-water communication with the Pacific, making of Portland one of the leading ports of the Pacific coast. The Columbia River, which forms about three-fourths of the northern boundary of the state, affords cheap transportation for the products of the fertile valleys of the northeastern counties, and is the scene of extensive salmon fishing. The large arid area of southeastern Oregon is sparsely settled, lacks manufacturing interests of any impor-

tance, and is very deficient in transportation facilities. The slopes of the Cascades and sections of the northern counties are wooded heavily with an excellent quality of pine and fir. The waters of the numerous mountain streams of the state have been utilized to some extent for the development of power and for purposes of irrigation.

Importance and growth of manufactures.—Although Oregon is increasing in importance as a manufacturing state, the growth of its manufacturing industries during the past 60 years has not kept pace with that of its population. In 1849 the 52 manufacturing establishments reported at the census of that year gave employment to an average of 285 wage earners, representing 2.1 per cent of the total population of the state. In 1909 an average of 28,750 wage earners, or 4.3 per cent of the total population, were employed in manufactures. During this period, however, the gross value of products per capita of the total population decreased from \$168 in 1849 to \$138 in 1909, although the proportion which the manufactures of the state represented of the total value of the products of the manufacturing industries of the United States increased during the same time from two-tenths of 1 per cent to four-tenths of 1 per cent.

The following table gives the most important figures relative to all classes of manufactures combined for 1909, 1904, and 1899, together with the percentages of increase from census to census:

	NUMBER OR AMOUNT.			PER CENT OF INCREASE.	
	1909	1904	1899	1904-1909	1899-1904
Number of establishments.....	2,246	1,602	1,406	40.2	13.9
Persons engaged in manufactures.....	34,722	22,018	(¹)	57.7	.....
Proprietors and firm members.....	2,499	1,726	(¹)	44.8	.....
Salaried employees.....	3,473	1,769	1,143	96.3	54.8
Wage earners (average number).....	28,750	18,523	14,459	55.2	28.1
Primary horsepower.....	175,019	81,348	60,005	115.1	35.6
Capital.....	\$89,082,000	\$44,024,000	\$28,359,000	102.3	55.2
Expenses.....	82,124,000	48,360,000	30,812,000	69.8	57.0
Services.....	23,949,000	13,577,000	8,044,000	76.4	68.8
Salaries.....	4,047,000	2,133,000	1,222,000	89.7	74.5
Wages.....	19,902,000	11,444,000	6,822,000	73.9	67.8
Materials.....	50,552,000	30,597,000	20,789,000	65.2	47.2
Miscellaneous.....	7,623,000	4,186,000	1,979,000	82.1	111.5
Value of products.....	93,005,000	55,525,000	36,593,000	67.5	51.7
Value added by manufacture (value of products less cost of materials).....	42,453,000	24,928,000	15,804,000	70.3	57.7

¹ Figures not available.

In 1909 the state of Oregon had 2,246 manufacturing establishments, which gave employment to an average of 34,722 persons during the year and paid

out \$23,949,000 in salaries and wages. Of the persons employed, 28,750 were wage earners. These establishments turned out products to the value of \$93,005,000,

to produce which materials costing \$50,552,000 were utilized. The value added by manufacture was thus \$42,453,000, which figure, as explained in the Introduction, best represents the net wealth created by manufacturing operations during the year.

In general, this table brings out the fact that the manufacturing industries of Oregon as a whole showed a marked growth during the decade 1899-1909, the greater development having taken place during the five-year period 1904-1909. During this period the number of establishments increased 40.2 per cent and

the average number of wage earners 55.2 per cent, while the value of products increased 67.5 per cent, and the value added by manufacture 70.3 per cent. As pointed out in the Introduction, it would be improper to infer that manufactures increased in volume to the full extent indicated by these figures representing values, since the increase shown is certainly due, in part, to the increase that has taken place in the prices of commodities. The relative importance and growth of the leading manufacturing industries of the state are shown in the following table:

INDUSTRY.	Number of establishments.	WAGE EARNERS.		VALUE OF PRODUCTS.		VALUE ADDED BY MANUFACTURE.		PER CENT OF INCREASE. ¹			
		Average number.	Per cent distribution.	Amount.	Per cent distribution.	Amount.	Per cent distribution.	Value of products.		Value added by manufacture.	
								1904-1909	1899-1904	1904-1909	1899-1904
All industries	2,246	28,750	100.0	\$98,005,000	100.0	\$42,453,000	100.0	67.5	51.7	70.3	57.7
Lumber and timber products.....	713	15,066	52.4	30,200,000	32.5	17,787,000	40.9	95.9	39.1	86.0	62.3
Flour-mill and gristmill products.....	114	394	1.4	8,891,000	9.6	1,224,000	2.8	5.0	38.0	9.7	16.7
Slaughtering and meat packing.....	14	306	1.3	6,880,000	6.3	865,000	4.3	102.3	77.5	87.3	85.3
Printing and publishing.....	324	1,459	5.1	5,041,000	5.4	3,938,000	9.1	81.6	85.8	85.9	89.1
Butter, cheese, and condensed milk.....	95	420	1.5	4,920,000	5.3	968,000	2.2				
Canning and preserving.....	71	661	2.3	3,207,000	3.4	1,020,000	2.4	10.2	45.0	0.3	46.1
Foundry and machine-shop products.....	82	1,055	3.7	3,135,000	3.4	1,663,000	3.8	97.4	87.2	76.0	81.7
Bread and other bakery products.....	151	613	2.1	2,829,000	3.0	1,208,000	2.8	88.1	93.1	92.0	100.3
Liquors, malt.....	18	204	0.7	1,857,000	2.0	1,403,000	3.2	66.1	56.6	103.6	27.4
Leather goods.....	48	353	1.2	1,620,000	1.8	640,000	1.5	76.1	42.3	67.1	46.7
Copper, tin, and sheet-iron products.....	39	431	1.5	1,611,000	1.7	776,000	1.8				
Confectionery.....	19	283	1.0	1,215,000	1.3	606,000	1.5	220.6	81.3	179.8	110.6
Cars and general shop construction and repairs by steam-railroad companies.....	8	777	2.7	1,163,000	1.2	654,000	1.5	-8.1	23.3	-25.6	62.2
Clothing, men's, including shirts.....	5	544	1.9	1,105,000	1.2	367,000	0.9				
Furniture and refrigerators.....	19	552	1.9	1,094,000	1.2	610,000	1.4	38.5	164.2	35.0	232.4
Woolen, worsted, and felt goods, and wool hats.....	8	469	1.6	929,000	1.0	402,000	0.9	-10.2	15.1	-25.3	24.5
Brick and tile.....	61	385	1.3	675,000	0.7	520,000	1.2	114.3	38.8	106.3	32.6
Shipbuilding, including boat building.....	24	212	0.7	477,000	0.5	273,000	0.6	60.6		56.9	
Tobacco manufactures.....	56	187	0.6	474,000	0.5	303,000	0.7	19.7	171.2	39.6	152.3
Stoves and furnaces, including gas and oil stoves.....	11	86	0.3	351,000	0.4	221,000	0.5	152.5		88.7	
Mattresses and spring beds.....	7	83	0.3	350,000	0.4	139,000	0.3	141.4		135.0	
Marble and stone work.....	3	76	0.3	297,000	0.3	184,000	0.4				
Ice, manufactured.....	25	69	0.2	257,000	0.3	181,000	0.4	18.4	87.1	2.8	81.4
Leather, tanned, curried, and finished.....	8	49	0.2	244,000	0.3	63,000	0.2	-49.7	94.0	-46.6	96.7
All other industries.....	303	3,956	13.8	15,174,000	16.3	6,378,000	14.7				

¹ Percentages are based on figures in Table I; a minus sign (-) denotes decrease. Where the percentages are omitted, comparable figures can not be given.

It should be borne in mind, in considering this table, that the value of products in some of the industries involves a certain amount of duplication, due to the use of the product of one establishment in the industry as material for another establishment.

Although a few industries greatly predominate in importance, it will be seen from Table II on page 1034 that there is, on the whole, considerable diversity in the manufacturing activities of the state. The most important industries listed in the table given above, in which they are arranged in the order of the value of products, call for brief consideration.

Lumber and timber products.—This industry, which includes the operation of lumber camps, sawmills, shingle mills, planing mills, and establishments engaged in the manufacture of wooden packing boxes, is by far the most important branch of manufacture in the state. Oregon ranked ninth in the total cut of rough lumber in 1909. The industry gave employment to an average of 15,066 wage earners, or 52.4

per cent of the total for the state, and the value of its products amounted to \$30,200,000, or 32.5 per cent of the total value of all manufactured products.

Flour-mill and gristmill products.—This industry, which is second in importance among the industries of the state when measured by value of products, is dependent largely upon the extensive grain areas of the state for its raw material. Because of the comparatively simple processes involved in the industry and the extent to which these processes are carried on by machinery, the number of wage earners employed and the value added by manufacture are not commensurate with the gross value of products. This classification does not include custom flour mills and gristmills, statistics for which are shown separately on page 1031.

Slaughtering and meat packing.—This industry includes wholesale slaughtering and meat packing and the manufacture of sausage. It does not include the retail butcher shops, which slaughter a large number

of animals. In 1909 the industry gave employment to an average of 366 wage earners and turned out products valued at \$5,880,000. The value of products shows an increase over 1904 of 102.3 per cent.

Printing and publishing.—This industry in Oregon includes book and job printing, the printing and publishing of newspapers and periodicals, bookbinding and blank-book making, steel and copper plate engraving, including plate printing, and lithographing. The increase in the value of products from 1904 to 1909 was 81.6 per cent, as compared with an increase of 85.8 per cent from 1899 to 1904. The average number of wage earners employed increased during the decade from 840 to 1,459, or 73.7 per cent. Although this industry ranked fourth among the manufacturing industries of the state in value of products in 1909, it ranked second when measured by number of wage earners and by value added by manufacture.

Butter, cheese, and condensed milk.—Improvements in machinery and in methods of handling the raw materials have resulted in increasing the average size of the establishments and in the centralization of the industry in the larger business centers. The statistics shown for this industry for 1904 do not include the entire product of the industry, as it was necessary to omit two large condensed-milk establishments to avoid disclosing the operations of individual concerns. The 95 establishments reported under this classification in 1909 may be grouped according to their chief products as follows: Butter factories, 55; cheese factories, 33; and condensed-milk factories, 7.

Canning and preserving.—The development of fruit growing and truck gardening in Oregon has greatly increased the activity of the canning and preserving industry since 1904. While there has been a considerable decrease since 1904 in the fish products, which represented about two-thirds of the total value of the output of the canneries in 1909, the rapid increase in the drying of fruits, especially prunes, so increased the total value of products that the industry as a whole showed a gain of 10.2 per cent during the five years.

In addition to the 24 industries presented separately, there are 16 industries which had a value of products in 1909 in excess of \$200,000. They are included under the head of "All other industries" in the table, because in some cases the operations of individual establishments would be disclosed if they were shown separately; in others, because the returns do not properly present the true condition of the industry, as it is interwoven with one or more other industries. These industries are as follows: Awnings, tents, and sails; babbitt metal and solder; bags, other than paper; boxes, fancy and paper; cars and general shop construction and repairs by street-railroad companies; coffee and spice, roasting and grinding; cordage and twine and jute and linen goods; food preparations; gas, illuminating and heating; iron and steel, steel

works and rolling mills; mineral and soda waters; oil, linseed; paint and varnish; paper and wood pulp; soap; and wood preserving.

The rank of the leading industries on the basis of the value added by manufacture differs considerably from their order given in the table, where they are arranged according to the value of products. The lumber industry retains first place, and slaughtering and meat packing third. Printing and publishing advances from fourth to second place; the foundries and machine shops and the malt-liquor industry advance from seventh and ninth to fourth and fifth places, respectively; and the flour mills and gristmills and the butter, cheese, and condensed-milk industry drop from second and fifth to sixth and ninth places, respectively.

This table also shows the percentages of increase for these leading industries in respect to value of products and value added by manufacture in all cases where comparative statistics can be presented. Slaughtering and meat packing, and the manufacture of confectionery, brick and tile, stoves and furnaces, and mattresses and spring beds showed large increases, both in value of products and in value added by manufacture.

Three of the industries shown separately—steam-railroad repair shops, woolen mills, and tanneries—showed decreases in value of products and value added by manufacture from 1904 to 1909.

Persons engaged in manufacturing industries.—The following table shows, for 1909, the distribution of the number of persons engaged in manufactures, the average number of wage earners being distributed by sex and age. It should be borne in mind, however, that the sex and age classification of the average number of wage earners in this and other tables is an estimate obtained by the method described in the Introduction.

CLASS.	PERSONS ENGAGED IN MANUFACTURES.		
	Total.	Male.	Female.
All classes.....	34,722	31,849	2,873
Proprietors and officials.....	3,719	3,667	52
Proprietors and firm members.....	2,499	2,453	46
Salaries officers of corporations.....	344	340	4
Superintendents and managers.....	876	874	2
Clerks.....	2,253	1,702	551
Wage earners (average number).....	28,750	26,480	2,270
16 years of age and over.....	28,652	26,406	2,246
Under 16 years of age.....	98	74	24

The average number of persons engaged in manufactures during 1909 was 34,722, of whom 28,750 were wage earners. Of the remainder, 3,719 were proprietors and officials and 2,253 were clerks. Corresponding figures for individual industries will be found in Table II, page 1034.

The following table shows, for 1909, the percentages of proprietors and officials, clerks, and wage earners, respectively, among the total number of persons employed in manufactures. It covers all industries combined and 13 important industries individually.

INDUSTRY.	PERSONS ENGAGED IN MANUFACTURES.			
	Total number.	Per cent of total.		
		Proprietors and officials.	Clerks.	Wage earners (average number).
All industries.....	34,722	10.7	6.5	82.8
Bread and other bakery products.....	905	22.0	10.3	67.7
Butter, cheese, and condensed milk.....	615	16.6	15.1	68.3
Canning and preserving.....	844	14.1	7.6	78.3
Clothing, men's, including shirts.....	576	2.6	3.0	94.4
Confectionery.....	408	7.6	23.0	69.4
Copper, tin, and sheet-iron products.....	525	11.4	6.5	82.1
Flour-mill and gristmill products.....	620	26.8	9.7	63.5
Foundry and machine-shop products.....	1,270	11.1	5.8	83.1
Furniture and refrigerators.....	621	5.2	6.0	88.0
Leather goods.....	484	15.5	11.6	72.9
Liquors, malt.....	272	12.9	12.1	75.0
Lumber and timber products.....	16,833	7.7	2.8	89.5
Printing and publishing.....	2,523	25.3	16.9	57.8
All other industries.....	8,226	9.8	8.6	81.6

Of the total number of persons engaged in all manufacturing industries, 10.7 per cent were proprietors and officials, 6.5 per cent clerks, and 82.8 per cent wage earners. The highest percentage of proprietors and officials shown for any individual industry, 26.8, is for the flour mills and gristmills. In this industry and also in the bakeries and in printing and publishing the majority of the establishments are small and the work is to a large extent done by the proprietors or their immediate representatives, so that the proportion of persons engaged in these industries falling into the class of proprietors and officials is very much higher than for most other industries or for all industries combined. On account of the large average number of wage earners per establishment engaged in making men's clothing and shirts, this industry shows the smallest proportion of proprietors and officials.

The next table shows, for 1909, in percentages, for all industries combined, the distribution of the average number of wage earners by age periods, and for those 16 years of age and over by sex, calculated in the manner described in the Introduction. It also shows, for some of the important industries separately, a similar distribution of wage earners as reported for December 15, or the nearest representative day. As a means of judging the importance of the several industries the average number employed for the year is also given in each case.

For all industries combined, 91.8 per cent of the average number of wage earners were males 16 years of age and over; 7.8 per cent females 16 years of age and over; and three-tenths of 1 per cent children under 16 years of age. The larger part of the total number of female wage earners were employed in the men's clothing and the canning and preserving industries.

In the men's clothing factories nearly nine-tenths of the wage earners were women 16 years of age and over, and in the canneries nearly two-fifths belonged to this class. In the manufacture of confectionery, a large proportion of female wage earners were employed, 67.8 per cent, but the number of women employed was not as large as in the canneries, where the proportion of such wage earners was smaller. The largest percentage of children was employed in the canneries, where much of the work requires but little strength or skill.

INDUSTRY.	WAGE EARNERS.			
	Average number. ¹	Per cent of total.		
		16 years of age and over.		Under 16 years of age.
		Male.	Female.	
All industries.....	28,750	91.8	7.8	0.3
Bread and other bakery products.....	613	71.1	28.5	0.3
Butter, cheese, and condensed milk.....	420	91.4	7.6	1.0
Canning and preserving.....	601	59.6	36.9	3.5
Clothing, men's, including shirts.....	544	10.1	39.9	.....
Confectionery.....	283	32.2	67.8	.....
Copper, tin, and sheet-iron products.....	431	92.3	7.7	.....
Flour-mill and gristmill products.....	394	99.7	0.3	.....
Foundry and machine-shop products.....	1,055	100.0	.....	.....
Furniture and refrigerators.....	552	98.7	1.3	.....
Leather goods.....	353	96.6	3.4	.....
Liquors, malt.....	204	100.0	.....	.....
Lumber and timber products.....	15,066	99.6	0.3	0.1
Printing and publishing.....	1,459	83.7	14.3	2.0
All other industries.....	6,715	87.6	11.9	0.4

¹ For method of estimating the distribution, by sex and age periods, of the average number in all industries combined, see Introduction.

In order to compare the distribution of persons engaged in manufactures in 1909 with that shown at the census of 1904 it is necessary to use the classification employed at the earlier census. (See Introduction.) The following table makes this comparison according to occupational status:

CLASS.	PERSONS ENGAGED IN MANUFACTURES.				
	1909		1904		Per cent of increase, 1904-1909.
	Number.	Percent distribution.	Number.	Percent distribution.	
Total.....	34,722	100.0	22,018	100.0	57.7
Proprietors and firm members.....	2,499	7.2	1,728	7.8	44.8
Salaried employees.....	3,473	10.0	1,769	8.0	96.3
Wage earners (average number)....	28,750	82.8	18,523	84.1	55.2

Comparable figures are not obtainable for 1899. The table shows a greater percentage of increase in salaried employees than in that of the other two classes.

The next table shows the average number of wage earners, distributed according to age periods, and in the case of those 16 years of age and over according to sex, for 1909, 1904, and 1899. The averages for 1909 are estimated on the basis of the actual number reported for a single representative day. (See Introduction.)

CLASS.	AVERAGE NUMBER OF WAGE EARNERS.					
	1909		1904		1899	
	Number.	Percent distribution.	Number.	Percent distribution.	Number.	Percent distribution.
Total.....	28,750	100.0	18,523	100.0	14,459	100.0
16 years of age and over....	23,652	99.7	18,317	98.9	14,183	98.1
Male.....	26,406	91.8	16,843	90.9	13,067	90.4
Female.....	2,246	7.8	1,474	8.0	1,118	7.7
Under 16 years of age....	98	0.3	206	1.1	278	1.9

This table indicates that for all industries combined there has been during the past decade a diminution in the number and in the proportion of children under 16 years of age. Although there was an actual increase in the number of women wage earners, the proportion which such wage earners formed of the

total remained practically the same at each census. In 1909 males 16 years of age and over formed 91.8 per cent of all wage earners, as compared with 90.9 per cent in 1904 and 90.4 per cent in 1899.

Wage earners employed, by months.—The following table gives the number of wage earners employed on the 15th of each month during the year 1909 for all industries combined, for the canning and preserving and the lumber and timber industries, and for all other industries combined; it gives also the percentage which the number reported for each month is of the greatest number reported for any month. In Table II, page 1034, are shown, for practically all of the important industries in the state, the largest number and also the smallest number of wage earners reported for any month. The figures are for the 15th day, or the nearest representative day, of the month.

MONTH.	WAGE EARNERS.											
	All industries.		Canning and preserving.		Lumber and timber products.						All other industries.	
					Total.		In mills.		In logging operations.			
	Number.	Per cent of maximum.	Number.	Per cent of maximum.	Number.	Per cent of maximum.	Number.	Per cent of maximum.	Number.	Per cent of maximum.	Number.	Per cent of maximum.
January.....	23,354	75.4	116	7.3	11,545	70.1	8,496	71.1	3,049	66.6	11,693	86.1
February.....	24,833	80.2	113	7.1	12,842	78.0	9,480	79.4	3,362	73.4	11,878	87.4
March.....	26,859	86.7	172	10.8	14,353	87.2	10,427	87.3	3,926	85.7	12,334	90.8
April.....	29,170	94.2	277	17.4	15,667	95.2	11,271	94.3	4,396	96.0	13,235	97.4
May.....	30,302	97.8	524	33.0	16,191	98.4	11,611	97.2	4,580	100.0	13,587	100.0
June.....	30,806	99.4	874	55.0	16,462	100.0	11,947	100.0	4,515	95.6	13,470	99.1
July.....	30,175	97.4	1,102	69.4	15,746	95.6	11,551	98.7	4,195	91.6	13,327	98.1
August.....	30,269	97.7	921	58.0	15,857	96.3	11,567	96.8	4,290	93.7	13,491	98.3
September.....	30,978	100.0	1,588	100.0	16,244	98.7	11,898	99.6	4,346	94.9	13,146	96.8
October.....	30,402	98.1	1,250	78.7	15,969	97.0	11,700	97.9	4,269	93.2	13,183	97.0
November.....	29,423	95.0	580	36.5	15,382	93.4	11,298	94.6	4,084	89.2	13,461	99.1
December.....	28,416	91.7	419	26.4	14,532	88.3	10,907	91.3	3,625	79.1	13,465	99.1

The brick and tile and canning and preserving industries are the only decidedly seasonal industries in Oregon, but neither gives employment to a sufficiently large number of persons to influence greatly the variation of employment in the state. In both industries most of the work is done during the summer months. In the canneries the season of greatest activity extends from June to October, inclusive. Employment was given to 1,588 wage earners in September, the month of greatest activity, and to 113 in February, the month of minimum employment.

The lumber industry in Oregon is not particularly seasonal, and the slight variations in the employment of the large number of wage earners in the industry do not greatly affect the total for all industries. Most of the large mills operate throughout the year, but many of the smaller ones shut down during the winter months, thus causing a fluctuation of nearly 5,000 in the number of wage earners. The greatest number employed in the industry as a whole during any one month was 16,462 in June, and the smallest number, 11,545, in January.

Prevailing hours of labor.—In the next table wage earners have been classified according to the hours of labor prevailing in the establishments in which they are employed. In making this classification the average number of wage earners employed during the year is used, and the number employed in each establishment is classified as a total according to the hours prevailing in that establishment, even though a few employees work a greater or less number of hours.

It is evident from the figures that for the great majority of wage earners employed in the manufacturing industries of Oregon the usual hours of labor range from 54 to 60 a week, inclusive, only 14.5 per cent of the total being employed in establishments where less than 54 hours a week prevailed, and only 6.3 per cent in establishments where the hours of labor were more than 60 a week. In two important industries, men's clothing and printing and publishing, most of the wage earners work in establishments where the prevailing hours of labor are 48 or less per week. In the lumber industry, the most important in the state, 91.4 per cent of the wage earners worked in establishments where the prevailing hours were 60 per week.

INDUSTRY.	AVERAGE NUMBER OF WAGE EARNERS IN ESTABLISHMENTS GROUPED ACCORDING TO PREVAILING HOURS OF WORK PER WEEK.								
	Total.	48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72.	Over 72.
All industries.....	28,760	3,306	762	3,880	1,030	17,861	1,485	194	142
Bread and other bakery products.....	613	50	31	108	221	161	32	6	4
Brick and tile.....	385	43	.....	96	8	238	.....	.....	.....
Butter, cheese, and condensed milk.....	420	34	12	72	30	96	168	.....	2
Canning and preserving.....	661	15	28	134	.....	280	172	1	81
Cars and general shop construction and repairs by steam-railroad companies.....	777	19	.....	697	.....	21	40	.....	.....
Clothing, men's, including shirts.....	544	538	.....	.....	6	.....	.....	.....	.....
Confectionery.....	283	19	75	24	127	.....	.....	.....	.....
Copper, tin, and sheet-iron products.....	431	188	1	98	7	37	1	.....	.....
Flour-mill and gristmill products.....	394	7	.....	11	.....	137	.....	.....	.....
Foundry and machine-shop products.....	1,055	36	122	802	17	280	15	80	1
Furniture and refrigerators.....	552	.....	36	9	8	499	.....	.....	.....
Ice, manufactured.....	69	10	.....	2	3	9	.....	.....	.....
Leather goods.....	353	10	4	281	7	51	9	14	22
Liquors, malt.....	204	170	.....	2	19	12	.....	.....	.....
Lumber and timber products.....	15,066	360	105	243	186	13,768	393	.....	13
Marble and stone work.....	76	72	.....	2	.....	2	.....	.....	.....
Mattresses and spring beds.....	83	.....	.....	47	.....	36	.....	.....	.....
Printing and publishing.....	1,459	1,188	81	166	7	13	.....	.....	.....
Shipbuilding, including boat building.....	212	181	2	27	.....	2	4	.....	.....
Slaughtering and meat packing.....	366	.....	.....	.....	.....	340	5	5	16
Stoves and furnaces, including gas and oil stoves.....	86	27	5	29	25	.....	.....	.....	.....
Tobacco manufactures.....	187	184	2	.....	.....	1	.....	.....	.....
Woolen, worsted, and felt goods, and wool hats.....	460	.....	.....	3	.....	460	.....	.....	.....
All other industries.....	4,005	245	258	1,027	353	1,336	645	88	53

Location of establishments.—The following table shows the extent to which the manufactures of Oregon are centralized in cities of 10,000 population or over. (See Introduction.) The comparison is confined here, as in other states, to the years 1899 and 1909, in the absence of a Federal census of population by which the grouping of cities in 1904 could be determined.

ITEM.	Year.	Total.	LOCATION OF ESTABLISHMENTS.		PER CENT OF TOTAL.	
			In cities with population of 10,000 and over.	Outside districts.	In cities with population of 10,000 and over.	Outside districts.
Population.....	1910	672,765	221,308	451,457	32.9	67.1
	1899	413,536	90,426	323,110	21.9	78.1
Number of establishments.	1909	2,246	711	1,535	31.7	68.3
	1899	1,406	408	998	29.0	71.0
Average number of wage earners.	1909	28,750	12,811	15,939	44.6	55.4
	1899	14,459	5,380	9,079	37.2	62.8
Value of products....	1909	\$93,004,845	\$49,068,708	\$43,936,047	52.8	47.2
	1899	36,592,714	16,903,707	19,689,007	46.2	53.8
Value added by manufacture.	1909	42,452,375	21,815,981	20,636,394	51.4	48.6
	1899	15,803,881	6,726,379	9,077,502	42.6	57.4

In 1909, 52.8 per cent of the total value of products was reported from the cities of Portland and Salem, the only cities in the state having over 10,000 population, and 44.6 per cent of the total number of wage earners were employed in these cities. There has been a change from the supremacy of the outside manufacturing districts in 1899 to that of the cities in 1909. This is due partly to the fact that Salem had a population of less than 10,000 in 1900 and was not included in the city group until 1909, but chiefly to the marked

growth of the industries in the city of Portland, this city alone reporting slightly more than one-half of the total value of products for the state in 1909. The large percentages shown for the outside districts are resultant largely from the activity in the lumber industry.

The population for 1910 and 1900 of the two cities which had 10,000 inhabitants or over in 1910 is given in the following tabular statement:

CITY.	1910	1900
	Portland.....	207,214	90,426
Salem.....	14,094	4,258

The following table shows the average number of wage earners and the value of products for Portland for 1909, 1904, and 1899, and for Salem for 1909:

CITY.	AVERAGE NUMBER OF WAGE EARNERS.			VALUE OF PRODUCTS.		
	1900	1904	1899	1900	1904	1899
Portland.....	12,214	8,171	5,380	\$46,860,767	\$28,651,321	\$16,903,707
Salem.....	597	(1)	(1)	2,208,031	(1)	(1)

¹ Figures not available.

Portland, the largest and by far the most important city in the state, shows an increase, from 1904 to 1909, of \$18,209,446, or 63.6 per cent, in value of products and of 4,043, or 49.5 per cent, in the average number of wage earners. When measured by value of products, the lumber industry was the most important branch of manufactures in Portland. In 1909 the value of products of this industry in this city amounted to \$10,110,975, representing 33.5 per cent

of the total for the industry in the state, and employment was given to an average of 3,669 wage earners, or 24.4 per cent of the total number engaged in the industry in the state. In 1909 Portland reported nearly three-fourths of the total value of products for printing and publishing in the state; over three-fourths that for the bakeries; more than four-fifths that for the foundries and machine shops, for the manufacture of copper, tin, and sheet-iron products, and for the leather-goods industry; and over nine-tenths those for the confectionery and furniture industries, respectively. The manufacture of men's clothing in the state was confined to Portland.

Statistics of manufactures for Salem are shown for the first time in 1909; therefore no comparison can be made with former censuses. The most important

industries in the city in that year were the lumber industry, the canneries, slaughtering and meat packing, the woolen-goods industry, printing and publishing, and the malt-liquor industry.

Character of ownership.—The table that follows has for its purpose the presentation of conditions in respect to the character of ownership, or legal organization, of manufacturing enterprises. For all industries combined comparative figures are given covering the censuses of 1909 and 1904. Comparative data for 1899 are not available. Figures for 1909 only are presented for several important industries individually. In order to avoid disclosing the operations of individual concerns, it is necessary to omit several important industries from this table and the one following.

INDUSTRY AND CHARACTER OF OWNERSHIP.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.	INDUSTRY AND CHARACTER OF OWNERSHIP.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.
ALL INDUSTRIES:					Canning and preserving, 1909—				
1909.....	2,246	28,750	\$93,004,845	\$42,452,375	Continued.				
1904.....	1,602	18,523	55,525,123	24,928,360	Per cent of total.....	100.0	100.0	100.0	100.0
Individual:					Individual.....	32.4	12.4	5.7	7.8
1909.....	1,031	3,552	11,482,192	5,774,363	Firm.....	18.3	8.2	4.5	6.2
1904.....	746	2,919	8,414,059	4,286,027	Corporation ²	49.3	79.4	89.9	86.0
Firm:					Flour-mill and gristmill products, 1909.....				
1909.....	545	3,044	9,860,644	5,264,778	Individual.....	114	394	\$8,891,001	\$1,224,265
1904.....	430	2,559	6,972,525	3,449,783	Individual.....	45	88	1,845,411	804,044
Corporation:					Firm.....	24	47	1,005,993	194,134
1909.....	640	22,063	70,781,269	31,212,265	Corporation.....	45	259	6,039,597	726,087
1904.....	409	13,037	40,034,288	17,178,323	Per cent of total.....	100.0	100.0	100.0	100.0
Other:					Individual.....	39.5	22.3	20.8	24.8
1909.....	30	91	880,740	200,909	Firm.....	21.1	11.9	11.3	15.9
1904.....	8	8	104,251	14,227	Corporation.....	39.5	65.7	67.9	59.3
Per cent of total:					Foundry and machine-shop products, 1909.....				
1909.....	100.0	100.0	100.0	100.0	Individual.....	82	1,055	\$3,135,068	\$1,663,469
1904.....	100.0	100.0	100.0	100.0	Individual.....	31	170	562,277	293,631
Individual:					Firm.....	18	85	234,931	140,652
1909.....	45.9	12.4	12.3	13.6	Corporation.....	33	800	2,337,860	1,229,186
1904.....	46.0	15.8	15.2	17.2	Per cent of total.....	100.0	100.0	100.0	100.0
Firm:					Individual.....	37.8	16.1	17.9	17.7
1909.....	24.3	10.6	10.6	12.4	Firm.....	22.0	8.1	7.5	8.5
1904.....	27.4	13.8	12.6	13.8	Corporation.....	40.2	75.8	74.6	78.9
Corporation:					Lumber and timber products, 1909.....				
1909.....	28.5	76.7	76.1	73.5	Individual.....	713	15,066	\$30,199,857	\$17,788,420
1904.....	25.5	70.4	72.1	68.9	Individual.....	263	1,178	2,068,739	1,435,000
Other:					Firm.....	240	1,584	2,918,721	1,996,100
1909.....	1.3	0.3	0.9	0.5	Corporation.....	204	12,304	25,212,397	14,354,320
1904.....	0.5	(¹)	0.2	0.1	Per cent of total.....	100.0	100.0	100.0	100.0
Butter, cheese, and condensed milk, 1909.....					Individual.....	36.9	7.8	6.8	8.1
Individual.....	95	420	\$4,920,462	\$968,242	Firm.....	34.5	10.5	9.7	11.2
Individual.....	29	53	928,188	148,068	Corporation.....	28.6	81.7	83.5	80.7
Firm.....	12	26	555,283	103,802	Printing and publishing, 1909.....				
Corporation.....	34	306	2,761,391	652,319	Individual.....	324	1,459	\$5,040,523	\$3,937,110
Other.....	20	35	675,600	63,963	Individual.....	200	375	1,108,857	905,158
Per cent of total.....	100.0	100.0	100.0	100.0	Firm.....	47	138	371,464	233,325
Individual.....	30.5	12.6	18.9	15.3	Corporation.....	69	912	3,419,957	2,621,924
Firm.....	12.6	6.2	11.3	10.7	Other.....	8	34	140,245	120,703
Corporation.....	35.8	72.9	56.1	67.4	Per cent of total.....	100.0	100.0	100.0	100.0
Other.....	21.1	8.3	13.7	6.6	Individual.....	61.7	25.7	22.0	23.0
Canning and preserving, 1909.....					Firm.....	14.5	9.5	7.4	7.3
Individual.....	71	661	\$3,207,060	\$1,019,628	Corporation.....	21.3	62.5	67.8	66.6
Individual.....	23	82	181,279	79,196	Other.....	2.5	2.3	2.8	3.1
Firm.....	13	54	143,816	63,042					
Corporation ²	35	525	2,881,965	877,390					

¹ Less than one-tenth of 1 per cent.

² Includes the group "Other," to avoid disclosure of individual operations.

The most important distinction shown is that between corporate and all other forms of ownership. For all industries combined, 28.5 per cent of the total number of establishments in 1909 were under corporate ownership, as against 71.5 per cent under all other forms. The corresponding figures for 1904 were 25.5 per cent and 74.5 per cent, respectively. The

establishments operated by corporations, however, reported 76.1 per cent of the total value of products in 1909 and 72.1 per cent in 1904. The greatest decrease in relative numerical importance from 1904 to 1909 is shown for the establishments operated by firms, which represented only 24.3 per cent of the total number in 1909, as compared with 27.4 per cent in 1904.

Size of establishment.—The tendency for manufacturing to become concentrated in large establishments, or the reverse, is a matter of interest from the standpoint of industrial organization. In order to throw some light upon it the following table groups the establishments according to the value of their products. The table also shows the average size of

establishments for all industries combined and for certain important industries separately, as measured by number of wage earners, value of products, and value added by manufacture. The totals for all industries combined are shown for the last two censuses, while for the individual industries figures are given for 1909 only.

INDUSTRY AND VALUE OF PRODUCTS.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.	INDUSTRY AND VALUE OF PRODUCTS.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.
ALL INDUSTRIES:									
1909	2,246	28,750	\$93,004,845	\$42,452,375					
1904	1,602	18,523	55,525,123	24,925,300					
Less than \$5,000:									
1909	780	957	1,926,913	1,343,938					
1904	534	747	1,529,491	1,040,739					
\$5,000 and less than \$20,000:									
1909	786	3,214	8,203,981	5,082,474					
1904	567	2,820	5,821,749	3,658,379					
\$20,000 and less than \$100,000:									
1909	482	7,104	21,453,056	10,828,549					
1904	332	5,228	14,162,072	6,969,113					
\$100,000 and less than \$1,000,000:									
1909	181	15,110	47,022,078	20,766,801					
1904	114	8,620	26,138,404	11,579,987					
\$1,000,000 and over:									
1909	8	2,365	14,398,817	4,832,613					
1904	5	1,108	7,873,317	1,680,162					
Per cent of total:									
1909	100.0	100.0	100.0	100.0					
1904	100.0	100.0	100.0	100.0					
Less than \$5,000:									
1909	35.1	3.3	2.1	3.2					
1904	36.5	4.0	2.8	4.2					
\$5,000 and less than \$20,000:									
1909	35.0	11.2	8.8	12.0					
1904	35.4	15.2	10.5	14.7					
\$20,000 and less than \$100,000:									
1909	21.5	24.7	23.1	25.0					
1904	20.7	28.2	25.5	28.0					
\$100,000 and less than \$1,000,000:									
1909	8.1	52.6	50.6	48.9					
1904	7.1	46.5	47.1	46.5					
\$1,000,000 and over:									
1909	0.4	8.2	15.5	10.9					
1904	0.3	6.0	14.2	6.7					
Average per establishment:									
1909		13	\$41,400	\$18,901					
1904		12	34,660	15,561					
Flour-mill and gristmill products, 1909									
Less than \$5,000	114	394	\$8,891,001	\$1,224,285					
\$5,000 and less than \$20,000	8	6	27,503	7,632					
\$20,000 and less than \$100,000	35	28	445,286	18,225					
\$100,000 and less than \$1,000,000	55	134	2,782,962	528,851					
Average per establishment	16	226	5,635,250	589,557					
Per cent of total:									
1909	100.0	100.0	100.0	100.0					
1904	7.0	1.5	0.3	0.6					
\$5,000 and less than \$20,000	30.7	7.1	5.0	8.0					
\$20,000 and less than \$100,000	48.2	34.0	31.3	43.2					
\$100,000 and less than \$1,000,000	14.0	57.4	63.4	48.2					
Average per establishment		3	\$77,991	\$10,739					
Foundry and machine-shop products, 1909									
Less than \$5,000	82	1,055	\$3,135,068	\$1,663,469					
\$5,000 and less than \$20,000	15	11	32,724	20,548					
\$20,000 and less than \$100,000	29	111	351,415	207,063					
\$100,000 and less than \$1,000,000	30	387	1,047,323	597,845					
Average per establishment	8	546	1,723,606	838,513					
Per cent of total:									
1909	100.0	100.0	100.0	100.0					
1904	18.3	1.0	1.0	1.2					
\$5,000 and less than \$20,000	35.4	10.5	10.6	12.4					
\$20,000 and less than \$100,000	36.6	36.7	33.4	35.9					
\$100,000 and less than \$1,000,000	9.8	51.8	55.0	60.4					
Average per establishment		13	\$38,233	\$20,286					
Lumber and timber products, 1909									
Less than \$5,000	713	15,066	\$30,199,857	\$17,786,420					
\$5,000 and less than \$20,000	284	484	646,974	521,251					
\$20,000 and less than \$100,000	224	1,382	2,210,788	1,614,367					
\$100,000 and less than \$1,000,000	139	3,493	6,210,600	4,219,587					
\$1,000,000 and over	63	8,538	17,399,242	9,563,248					
Average per establishment	3	1,169	3,732,193	1,867,937					
Per cent of total:									
1909	100.0	100.0	100.0	100.0					
1904	39.8	3.2	2.1	2.9					
\$5,000 and less than \$20,000	31.4	9.2	7.3	9.1					
\$20,000 and less than \$100,000	19.5	23.2	20.6	23.7					
\$100,000 and less than \$1,000,000	8.8	56.7	57.6	63.8					
\$1,000,000 and over	0.4	7.8	12.4	10.5					
Average per establishment		21	\$42,356	\$24,940					
Printing and publishing, 1909									
Less than \$5,000	324	1,459	\$5,040,523	\$3,937,110					
\$5,000 and less than \$20,000	171	168	437,672	348,614					
\$20,000 and less than \$100,000	117	430	1,212,096	971,398					
\$100,000 and less than \$1,000,000	30	396	1,174,676	874,804					
Average per establishment	6	465	2,216,079	1,742,294					
Per cent of total:									
1909	100.0	100.0	100.0	100.0					
1904	62.8	11.5	8.7	8.9					
\$5,000 and less than \$20,000	36.1	29.5	24.0	24.7					
\$20,000 and less than \$100,000	9.3	27.1	23.3	22.3					
\$100,000 and less than \$1,000,000	1.9	31.9	44.0	44.3					
Average per establishment		4	\$15,557	\$12,152					
Canning and preserving, 1909									
Less than \$5,000	71	661	\$3,207,060	\$1,019,628					
\$5,000 and less than \$20,000	25	36	59,234	28,195					
\$20,000 and less than \$100,000	17	98	194,061	78,701					
\$100,000 and less than \$1,000,000	19	264	1,025,182	355,999					
Average per establishment	10	263	1,928,583	558,733					
Per cent of total:									
1909	100.0	100.0	100.0	100.0					
1904	35.2	5.4	1.8	2.6					
\$5,000 and less than \$20,000	23.9	14.8	6.1	7.7					
\$20,000 and less than \$100,000	26.8	39.9	32.0	34.9					
\$100,000 and less than \$1,000,000	14.1	39.8	60.1	54.8					
Average per establishment		9	\$45,170	\$14,361					

¹ Includes the group "\$1,000,000 and over."

This table shows that, in 1909, of the 2,246 manufacturing establishments in the state, only 8 had a value of products exceeding \$1,000,000. These establishments, however, employed an average of 2,365 wage earners, or 8.2 per cent of the total number in all establishments, and reported 15.5 per cent of the total value of products and 10.9 per cent of the total value added by manufacture.

On the other hand, the very small establishments—that is, those having a value of products of less than \$5,000—constituted a considerable proportion (35.1

per cent) of the total number of establishments, but the value of their products amounted to only 2.1 per cent of the total. The bulk of the manufacturing was reported by establishments having a product valued at not less than \$100,000.

It will be seen from the above table that during the five years from 1904 to 1909 there was a considerable increase, as measured by value of products, in the relative importance of the large establishments—those reporting products valued at not less than \$100,000—and a decrease in that of the three other classes.

The fact that from 1904 to 1909 the average value of products per establishment increased from \$34,660 to \$41,409, and the average value added by manufacture from \$15,561 to \$18,901, can not be taken as in itself indicating a tendency toward concentration. The increased values shown may be, and probably are, due in part to the increase that has taken place in the prices of commodities. The average number of wage earners per establishment increased from 12 in 1904 to 13 in 1909.

In some respects, and especially from the standpoint of conditions under which persons engaged in manufactures work, the best classification of establishments to bring out the feature of size is a classification according to the number of wage earners employed. The next table shows, for 1909, such a classification for all industries combined and for 13 important industries individually, and gives not only the number of establishments falling into each group, but also the average number of wage earners employed.

INDUSTRY.	ESTABLISHMENTS EMPLOYING—									
	Total.	No wage earners.	1 to 5 wage earners.	6 to 20 wage earners.	21 to 50 wage earners.	51 to 100 wage earners.	101 to 250 wage earners.	251 to 500 wage earners.	501 to 1,000 wage earners.	Over 1,000 wage earners.
NUMBER OF ESTABLISHMENTS.										
All industries.....	2,246	232	1,310	449	141	59	39	13	3	.....
Bread and other bakery products.....	151	31	103	13	2	1	1	.....	.....	.....
Butter, cheese, and condensed milk.....	95	10	71	10	2	2	.....	.....	.....	.....
Canning and preserving.....	71	1	40	17	5	2	.....	.....	.....	.....
Clothing, men's, including shirts.....	5	.....	1	1	.....	1	1	1	.....	.....
Confectionery.....	19	.....	10	6	2	1	.....	.....	.....	.....
Copper, tin, and sheet-iron products.....	39	3	21	10	4	.....	1	.....	.....	.....
Flour-mill and gristmill products.....	114	15	86	9	3	1	.....	.....	.....	.....
Foundry and machine-shop products.....	82	4	37	30	7	3	1	.....	.....	.....
Furniture and refrigerators.....	19	1	7	5	2	2	2	.....	.....	.....
Leather goods.....	48	3	33	6	5	1	.....	.....	.....	.....
Liquors, malt.....	18	1	8	7	1	.....	.....	.....	.....	.....
Lumber and timber products.....	713	26	377	178	68	31	21	11	1	.....
Printing and publishing.....	324	72	195	49	4	3	1	.....	.....	.....
All other industries.....	548	65	315	108	36	10	11	1	2	.....
AVERAGE NUMBER OF WAGE EARNERS.										
All industries.....	28,750	.....	2,938	4,757	4,729	4,225	5,944	4,335	1,822	.....
Bread and other bakery products.....	613	.....	173	134	60	68	178	.....	.....	.....
Butter, cheese, and condensed milk.....	420	.....	127	110	68	125	.....	.....	.....	.....
Canning and preserving.....	611	.....	118	228	172	143	.....	.....	.....	.....
Clothing, men's, including shirts.....	544	.....	1	6	.....	60	150	321	.....	.....
Confectionery.....	233	.....	23	98	38	74	.....	.....	.....	.....
Copper, tin, and sheet-iron products.....	451	.....	54	96	147	.....	134	.....	.....	.....
Flour-mill and gristmill products.....	394	.....	180	86	79	55	.....	.....	.....	.....
Foundry and machine-shop products.....	1,055	.....	95	301	247	194	218	.....	.....	.....
Furniture and refrigerators.....	552	.....	19	47	66	139	231	.....	.....	.....
Leather goods.....	353	.....	69	49	176	59	.....	.....	.....	.....
Liquors, malt.....	204	.....	18	99	23	66	.....	.....	.....	.....
Lumber and timber products.....	15,006	.....	863	1,914	2,380	2,277	3,004	3,744	794	.....
Printing and publishing.....	1,459	.....	416	497	118	208	220	.....	.....	.....
All other industries.....	6,715	.....	784	1,092	1,121	751	1,609	270	1,028	.....
PER CENT OF AVERAGE NUMBER OF WAGE EARNERS.										
All industries.....	100.0	.....	10.2	16.5	16.4	14.7	20.7	15.1	6.3	.....
Bread and other bakery products.....	100.0	.....	28.2	21.9	9.8	11.1	29.0	.....	.....	.....
Butter, cheese, and condensed milk.....	100.0	.....	30.2	26.2	13.8	29.8	.....	.....	.....	.....
Canning and preserving.....	100.0	.....	17.9	34.5	26.0	21.6	.....	.....	.....	.....
Clothing, men's, including shirts.....	100.0	.....	0.2	1.1	.....	12.1	27.6	59.0	.....	.....
Confectionery.....	100.0	.....	8.1	34.6	31.1	26.1	.....	.....	.....	.....
Copper, tin, and sheet-iron products.....	100.0	.....	12.5	22.3	34.1	.....	31.1	.....	.....	.....
Flour-mill and gristmill products.....	100.0	.....	45.7	21.8	18.5	14.0	.....	.....	.....	.....
Foundry and machine-shop products.....	100.0	.....	9.0	28.5	23.4	18.4	20.7	.....	.....	.....
Furniture and refrigerators.....	100.0	.....	3.4	8.5	12.0	25.2	50.9	.....	.....	.....
Leather goods.....	100.0	.....	19.5	13.9	49.9	16.7	.....	.....	.....	.....
Liquors, malt.....	100.0	.....	7.8	48.5	11.3	32.4	.....	.....	.....	.....
Lumber and timber products.....	100.0	.....	5.7	12.7	15.8	15.1	20.5	24.8	5.3	.....
Printing and publishing.....	100.0	.....	28.5	34.1	8.1	14.3	15.1	.....	.....	.....
All other industries.....	100.0	.....	11.7	16.3	16.7	11.2	24.9	4.0	15.3	.....

Of the 2,246 establishments reported for all industries, 10.3 per cent employed no wage earners; 58.3 per cent, from 1 to 5; 20 per cent, 6 to 20; and 6.3 per cent, 21 to 50. The most numerous single group consists of the 1,310 establishments employing from 1 to 5 wage earners, and the next of the 449 establishments employing from 6 to 20 wage earners. There were 114 establishments that employed over 50 wage earners each, 55 employed over 100 each, 16 employed over 250 each, and 3 employed over 500

each. Of the 55 establishments that employed over 100 wage earners each, 33 were engaged in the lumber industry.

Of the total number of wage earners, 42.1 per cent were in establishments employing over 100 wage earners each. The single group having the largest number of wage earners was the group comprising the establishments employing from 101 to 250 wage earners. This group employed 5,944 wage earners, or 20.7 per cent of the total.

Expenses.—As stated in the Introduction, the census does not purport to furnish figures that can be used for determining the cost of manufacture and profits. Facts of interest can, however, be brought out concerning the relative importance of the different classes of expenses which make up the total.

The following table shows, for 1909, in percentages, the distribution of expenses among the classes indicated for all industries combined and for certain important industries separately. The figures on which the percentages are based appear in Table II.

INDUSTRY.	PER CENT OF TOTAL EXPENSES REPORTED.			
	Salaries.	Wages.	Materials.	Miscellaneous expenses.
All industries.....	4.9	24.2	61.6	9.3
Bread and other bakery products.....	3.3	18.6	48.6	0.5
Butter, cheese, and condensed milk.....	2.8	6.3	36.0	4.8
Canning and preserving.....	5.0	10.9	75.4	8.7
Clothing, men's, including shirts.....	2.7	22.6	70.0	4.7
Confectionery.....	9.4	14.3	56.8	19.5
Copper, tin, and sheet-iron products.....	3.8	25.0	59.0	12.3
Flour-mill and gristmill products.....	1.7	3.3	92.3	2.7
Foundry and machine-shop products.....	6.6	32.3	53.3	7.8
Furniture and refrigerators.....	6.3	32.6	48.9	12.2
Leather goods.....	2.3	17.9	67.5	8.4
Liquors, malt.....	7.3	16.8	37.1	38.8
Lumber and timber products.....	4.8	38.4	46.9	10.0
Printing and publishing.....	14.7	38.1	29.0	18.3
All other industries.....	4.7	19.1	67.6	8.5

This table shows that for all industries combined 61.6 per cent of the total expenses was incurred for materials, 29.1 per cent for services—that is, salaries and wages—and 9.3 per cent for other purposes. As would be expected, these proportions vary greatly in the different industries. Among the industries shown separately, printing and publishing shows the largest percentage of expenses for services and flour milling and grist milling the largest for materials. The largest percentage for miscellaneous expenses was reported by the breweries, owing to the inclusion of the internal-revenue tax under this head.

Engines and power.—The following table shows, for all industries combined, the number of engines or other motors, according to their character, employed in generating power (including electric motors operated by purchased current), and their total horsepower at the censuses of 1909, 1904, and 1899. It also shows separately the number and horsepower of electric motors, including those operated by current generated in the manufacturing establishments.

Fifty-five and four-tenths per cent of the total increase in power from 1904 to 1909 is due to the increase in that used in the lumber industry alone. The largest actual increase was in steam power, which in 1909 represented 64.1 per cent of the primary power. Water power

more than doubled, and represented 27.1 per cent of the total in 1909. The practice of renting electric power has increased greatly during the decade, the proportion of such power having increased from 3.7 per cent of the total in 1899 to 8.4 per cent in 1909. In 1904 electric power generated in the manufacturing establishments reporting formed only 9.5 per cent of the total electric power reported, while in 1909 it formed 28.8 per cent, having increased from 496 horsepower in 1904 to 5,991 in 1909.

POWER.	NUMBER OF ENGINES OR MOTORS.			HORSEPOWER.			PER CENT DISTRIBUTION OF HORSEPOWER.		
	1909	1904	1899	1909	1904	1899	1909	1904	1899
Primary power, total.....	3,442	1,318	1,184	175,019	81,348	60,005	100.0	100.0	100.0
Owned.....	1,921	1,318	1,184	160,110	70,543	57,444	91.5	94.1	95.7
Steam.....	1,572	1,008	883	112,244	55,512	37,980	64.1	68.2	63.3
Gas.....	81	58	30	428	371	195	0.2	0.5	0.3
Water wheels.....	237	207	265	47,041	20,526	19,263	26.9	25.2	32.1
Water motors.....	31	45	(?)	397	134	(?)	0.2	0.2	(?)
Other.....									
Rented.....	1,521	(?)	(?)	14,909	4,805	2,561	8.5	5.9	4.3
Electric.....	1,521			14,811	4,727	2,243	8.4	5.8	3.7
Other.....		(?)	(?)	98	78	318	0.1	0.1	0.5
Electric motors.....	1,745	31	27	20,802	5,223	2,690	100.0	100.0	100.0
Run by current generated by establishment.....	224	31	27	5,991	496	447	28.8	9.5	16.6
Run by rented power.....	1,521	(?)	(?)	14,811	4,727	2,243	71.2	90.5	83.4

¹ Includes the neighborhood industries and hand trades, omitted in 1904 and 1909.
² Not reported.

Fuel.—Closely related to the question of kind of power employed is that of the fuel consumed in generating this power, or otherwise used as material in the manufacturing processes.

The following table shows the quantity of each kind of fuel used in 1909 for all industries combined and for certain selected industries:

INDUSTRY.	An-thra-cite coal (tons).	Bitu-minous coal (tons).	Coke (tons).	Wood (cords).	Oil, including gaso-line (barrels).	Gas (1,000 feet).
All industries.....	462	18,158	5,808	116,762	599,121	25,821
Bread and other bakery products.....	36	344	226	4,415	9,102	6,137
Butter, cheese, and condensed milk.....	144	1,006	35	11,544	11,046	.....
Canning and preserving.....	18	122	.....	7,520	8,080	.....
Clothing, men's, including shirts.....	.....	80	.....	96	924	.....
Confectionery.....	10	170	138	481	1,085	3,999
Copper, tin, and sheet-iron products.....	.....	47	52	524	125	1,296
Flour-mill and gristmill products.....	.....	247	.....	6,854	1,633	.....
Foundry and machine-shop products.....	154	608	2,550	2,351	4,469	275
Furniture and refrigerators.....	.....	40	.....	825	1,720	1,092
Leather goods.....	6	20	.....	182	45	237
Liquors, malt.....	.....	504	764	15,004	8,929	300
Lumber and timber products.....	18	1,180	.....	4,474	11,160	506
Printing and publishing.....	27	409	.....	1,502	3,077	4,826
All other industries.....	49	13,312	2,037	60,990	536,520	7,153

NOTE.—In addition, there were 11,715 tons of other varieties of fuel reported.

SUPPLEMENTARY DATA REGARDING IMPORTANT INDUSTRIES.

(With statistics for laundries and custom sawmills and gristmills.)

For certain industries the Census Bureau collects, by means of special schedules, details regarding the quantity and value of materials and products and other information for securing which no provision is made on the general schedule. Certain data of this character for six important industries in Oregon are here presented.

Lumber and timber products.—The following is a statement of the quantity of the lumber, lath, and shingles produced in the sawmills and shingle mills as reported at the censuses of 1909 and 1899:

PRODUCT.	1909	1899
Rough lumber.....M feet b. m.	1,898,995	734,538
Lath.....thousands..	161,512	41,779
Shingles.....thousands..	293,644	31,189

The cut of rough lumber increased 1,164,457 M feet board measure, or 158.5 per cent, from 1899 to 1909; that of shingles, 262,455,000, or 841.5 per cent; and that of lath, 119,733,000, or 286.6 per cent.

Of the total cut for 1909, 1,895,950 M feet board measure, was softwood. Of this amount, 1,581,621 M feet board measure, or 83.4 per cent of the total for the state, was Douglas fir, and 169,592 M feet western pine; among other varieties are spruce, cedar, hemlock, and larch. There were only 3,045 M feet of hardwood lumber produced, of which maple, cottonwood, ash, and oak were the principal varieties. In 1909 Oregon was second among the states in the production of Douglas fir, reporting 32.6 per cent of the total. But two states, California and Oregon, reported sugar pine and Oregon reported 8.6 per cent of the total cut.

Flour-mill and gristmill products.—The following table gives the quantity and value of the various kinds of products of this industry for 1909, 1904, and 1899:

PRODUCT.	1909	1904	1899
Total value.....	\$3,891,001	\$8,467,613	\$6,136,250
Wheat flour:			
White—			
Barrels.....	1,345,369	1,716,533	1,778,709
Value.....	\$5,950,611	\$6,236,201	\$4,620,351
Graham—			
Barrels.....	14,012	24,016	(1)
Value.....	\$65,234	\$88,641	(1)
Corn meal and corn flour:			
Barrels.....	559	685	3,632
Value.....	\$2,236	\$3,395	\$10,283
Rye flour:			
Barrels.....	1,299	285	1,854
Value.....	\$5,502	\$1,300	\$5,661
Buckwheat flour:			
Pounds.....	8,651	11,600	241,900
Value.....	\$376	\$385	\$6,238
Barley meal:			
Pounds.....	1,095,004	2,693,000	1,049,000
Value.....	\$17,963	\$32,750	\$10,430
Hominy and grits:			
Pounds.....	15,000	225,051	24,000
Value.....	\$390	\$4,515	\$450
Feed:			
Tons.....	53,460	32,270	49,548
Value.....	\$1,545,894	\$813,442	\$717,972
Offal:			
Tons.....	50,802	66,477	46,685
Value.....	\$1,142,201	\$1,247,728	\$538,822
All other products.....	\$160,594	\$39,166	\$226,013

1 Not reported separately.

As shown in the table, the principal product of this industry is white-wheat flour, the value of which formed 66.9 per cent of the total value of all products for the industry in 1909, 73.6 per cent in 1904, and 75.3 per cent in 1899. During the decade there was a decrease in the quantity of every class of product except feed, offal, and barley meal. In 1909 the value of feed and of offal formed 17.4 per cent and 12.8 per cent, respectively, of the total value of products for the industry, as against 11.7 per cent and 8.8 per cent, respectively, in 1899. In 1909 the mills of the state were equipped with 976 pairs of rolls and 45 runs of stone. The corresponding figures for 1904 were 941 pairs of rolls and 55 runs of stone. Two mills reported the manufacture of sacks in 1909 but none the manufacture of barrels.

Slaughtering and meat packing.—This classification includes wholesale slaughtering and meat-packing establishments and those engaged in the manufacture of sausage only. The following table gives the quantities and values of the different products for 1909, 1904, and 1899:

PRODUCT.	1909	1904 ¹	1899 ¹
Total value.....	\$5,879,615	\$2,907,154	\$1,638,480
Beef, fresh:			
Pounds.....	28,759,934	13,525,555	7,583,340
Value.....	\$2,235,816	\$882,814	\$552,507
Beef, salted or cured:			
Pounds.....	57,316	425,000	502,500
Value.....	\$5,433	\$21,500	\$38,175
Veal, fresh:			
Pounds.....	851,558	293,980	198,410
Value.....	\$88,663	\$19,822	\$18,210
Mutton, fresh:			
Pounds.....	3,886,798	3,785,414	2,300,600
Value.....	\$361,170	\$223,207	\$104,780
Pork, fresh:			
Pounds.....	4,256,595	2,148,669	781,520
Value.....	\$517,974	\$185,657	\$62,897
Pork, salted or cured:			
Pounds.....	5,123,483	9,247,347	5,063,111
Value.....	\$752,137	\$398,605	\$455,608
Sausage, fresh or cured.....	\$250,822	\$79,150	\$33,265
Lard:			
Pounds.....	5,709,268	2,449,740	1,021,232
Value.....	\$635,628	\$220,023	\$95,902
Hides:			
Number.....	56,421	26,493	19,983
Pounds.....	3,390,352	1,533,083	801,140
Value.....	\$427,179	\$131,603	\$79,301
Pelts:			
Number.....	92,038	13,267	(3)
Value.....	\$52,589	\$9,996	(2)
All other products.....	\$562,204	\$234,777	\$137,837

¹ Excluding one establishment, to avoid disclosure of individual operations.
² Figures not available.

During the decade the output of fresh beef in Oregon increased 279.2 per cent and that of fresh pork 444.7 per cent. Fresh veal, fresh mutton, lard, and hides all show large increases in quantity during the 10 years. Salted or cured pork shows only a small increase, while salted or cured beef decreased considerably during this period.

Butter, cheese, and condensed milk.—This is comparatively a new industry in Oregon. Since 1889, when there were only 12 establishments with a total value of products of \$66,426 classified as butter, cheese, or condensed-milk factories, the industry has grown

until in 1909 there were 95 establishments reporting a value of products amounting to nearly \$5,000,000.

The following table shows the quantity and value of the various classes of butter, cheese, and condensed-milk products for the censuses of 1909, 1904, and 1899:

PRODUCT.	1909	1904 ¹	1899
Total value	\$4,920,462	\$1,623,343	\$639,222
Butter:			
Packed solid—			
Pounds.....	902,102	855,962	425,727
Value.....	\$208,721	\$108,691	\$95,733
Prints and rolls—			
Pounds.....	7,480,553	4,224,637	1,849,630
Value.....	\$2,383,385	\$1,078,200	\$344,866
Cream sold:			
Pounds.....	1,019,239	477,218	470,000
Value.....	\$132,097	\$40,798	\$40,141
All other butter-factory products.....	\$21,727	\$16,828	\$21,846
Cheese:			
Full cream—			
Pounds.....	4,166,038	2,214,067	1,106,505
Value.....	\$631,259	\$244,621	\$128,827
Part cream—			
Pounds.....	37,415		
Value.....	\$5,369		
Other kind—			
Pounds.....	15,500	41,525	89,059
Value.....	\$4,240	\$4,755	\$9,054
All other cheese-factory products.....	\$170	\$964	\$755
Condensed milk, unsweetened:²			
Pounds.....	21,788,937		
Value.....	\$1,104,360		
All other condensed-milk factory products.....	\$350		
All other products, not specified.....	\$278,778	\$54,486	

¹ Excluding two establishments, to avoid disclosure of individual operations.
² Includes one establishment reporting condensed milk, sweetened.

The butter factories produced 57.6 per cent of the total value of products of the industry in 1909 and 78.6 per cent in 1899, while the cheese factories reported 13 per cent in 1909 and 21.4 per cent in 1899. The condensed-milk factories contributed 23.7 per cent of the total value of products in 1909.

The quantity of butter produced increased 3,392,061 pounds, or 66.8 per cent, from 1904 to 1909, and 3,105,242 pounds, or 157.2 per cent, from 1899 to 1904, and the quantity of cheese increased 1,963,361 pounds, or 87 per cent, from 1904 to 1909, and 1,060,028 pounds, or 88.7 per cent, from 1899 to 1904. Of the 4,218,953 pounds of cheese made in 1909, 4,166,038 pounds, or 98.7 per cent, was full-cream cheese.

The first report of a condensed-milk factory in Oregon was received at the census of 1904, but statistics for that year can not be shown without disclosing operations of individual concerns. In 1909 seven such establishments reported nearly 22,000,000 pounds of condensed milk, valued at over a million dollars.

Canning and preserving.—This is one of the important and distinctive industries of Oregon. The increase in the value of products from 1904 to 1909 was \$295,696, or 10.2 per cent, and from 1899 to 1904, \$917,257, or 46 per cent.

The products of this industry have been divided into five general classes—canned vegetables, canned fruits, dried fruits, fish, canned and salted, and "All other

products," the latter classification including pickles, preserves, and sauces. The value of canned vegetables formed 1.5 per cent of the total value of products for the industry in 1909, 1 per cent in 1904, and sevenths of 1 per cent in 1899; that of canned fruits, 5.5 per cent in 1909, 7.4 per cent in 1904, and 5.3 per cent in 1899; that of dried fruits, 14.7 per cent in 1909, 1.1 per cent in 1904, and 1 per cent in 1899; that of fish products, 64.6 per cent in 1909, 81.9 per cent in 1904, and 85 per cent in 1899; and that of "All other products," 13.6 per cent in 1909, 8.6 per cent in 1904, and 8 per cent in 1899.

The next table gives the quantity and value of the principal products reported at the censuses of 1909, 1904, and 1899.

PRODUCT.	1909	1904	1899
Total value	\$3,207,060	\$2,911,364	\$1,994,107
Canned vegetables	\$48,219	\$30,045	\$14,300
Beans—			
Cases.....	12,831	4,000	1,200
Value.....	\$26,179	\$10,892	\$2,556
Pumpkins—			
Cases.....	3,627	2,590	
Value.....	\$8,148	\$6,095	
All other—			
Cases.....	6,938	6,616	4,783
Value.....	\$13,892	\$13,058	\$11,735
Canned fruits	\$177,818	\$214,363	\$106,550
Apples—			
Cases.....	8,557	15,943	5,633
Value.....	\$15,918	\$35,170	\$13,800
Blackberries—			
Cases.....	4,408	4,604	8,800
Value.....	\$9,321	\$3,635	\$18,000
Cherries—			
Cases.....	22,770	27,346	14,570
Value.....	\$49,203	\$72,465	\$30,300
Pears—			
Cases.....	14,598	14,174	7,367
Value.....	\$42,842	\$43,464	\$22,000
Raspberries—			
Cases.....	9,658	4,342	2,602
Value.....	\$23,206	\$15,549	\$6,600
Strawberries—			
Cases.....	3,490	9,757	3,500
Value.....	\$10,361	\$30,324	\$9,500
All other—			
Cases.....	14,033	3,430	4,400
Value.....	\$26,967	\$8,756	\$9,350
Dried fruits:			
Pounds.....	14,028,251	869,000	307,350
Value.....	\$473,008	\$31,000	\$19,461
Prunes—			
Pounds.....	14,009,597	813,000	360,100
Value.....	\$470,911	\$28,000	\$17,351
All other—			
Pounds.....	18,654	50,000	37,250
Value.....	\$2,097	\$3,000	\$2,110
Fish:			
Pounds.....	18,303,344	27,191,650	16,250,680
Value.....	\$2,073,081	\$2,384,246	\$1,694,338
Salmon, canned—			
Pounds.....	12,969,670	20,187,559	15,915,352
Value.....	\$1,341,481	\$1,694,762	\$1,655,329
Salted fish—			
Pounds.....	5,333,674	7,004,091	335,328
Value.....	\$731,600	\$689,484	\$39,009
All other products, including smoked fish and pickles, preserves, and sauces.....	\$434,934	\$251,710	\$159,458

¹ Does not include products to the value of \$10,538, reported by establishments engaged primarily in other industries.

Although the output of canned salmon decreased both in quantity and in value from 1904 to 1909, it is still the most important product of the canning industry in Oregon. In 1909 the state produced 13 per cent of the total output of canned salmon for continental United

States. The most marked increase was that in the production of prunes from 813,000 pounds in 1904 to 14,009,597 pounds in 1909.

Beans were the principal vegetable canned, being in fact the only one, aside from pumpkins, which was reported by more than one establishment. Cherries and pears were more extensively canned than any other fruits, although the canning of apples was reported by a larger number of establishments. Salted fish was reported by 13 establishments.

Printing and publishing.—The printing and publishing industry in Oregon shows a decided growth during the last decade, when measured by the number of publications and the aggregate circulation. The following table shows the number of publications and aggregate circulation per issue, classified according to period of issue, for the years 1909, 1904, and 1899:

PERIOD OF ISSUE.	NUMBER OF PUBLICATIONS.			AGGREGATE CIRCULATION PER ISSUE.		
	1909	1904	1899	1909	1904	1899
Total.....	254	221	197	735,383	445,946	311,950
Daily.....	31	23	21	150,560	92,171	51,191
Sunday.....	6	8	0	93,142	58,800	(¹)
Semiweekly.....	11	18	14	26,725	27,330	14,810
Weekly.....	176	162	124	229,585	130,395	166,511
Monthly.....	27	16	27	219,351	81,400	75,038
All other classes.....	3	4	2	16,000	5,850	4,400

¹Included in circulation of dailies.

²Includes one triweekly.

The weeklies showed the greatest increase in number and the monthlies in aggregate circulation. There was a decrease in the number of Sunday and semiweekly publications, but an increase in the aggregate circulation of the Sunday publications.

In 1909, 13 of the 31 daily papers, with an aggregate circulation of 55,375, were morning editions. All of the publications were printed in the English language, except 1 daily in Japanese; 1 semiweekly in Finnish; 5 weeklies, of which 3 were in German, 1 in Swedish, and 1 in Danish and Norwegian; and 1 monthly in German.

Laundries.—Statistics for steam laundries are not included in the general tables or in the totals for manufacturing industries. In 1909 there were in the state 58 such establishments, of which 20 were in Portland and 2 in Salem.

The following statement summarizes the statistics:

Number of establishments.....	58
Persons engaged in the industry.....	1,674
Proprietors and firm members.....	54
Salaried employees.....	163
Wage earners (average number).....	1,457
Primary horsepower.....	1,535
Capital.....	\$391,017
Expenses.....	1,252,614
Services.....	845,314
Materials.....	263,593
Miscellaneous.....	143,707
Amount received for work done.....	1,569,932

Twenty-two of the 58 establishments were under corporate ownership, 20 under individual ownership and 16 under firm ownership. Four establishments reported receipts for the year's business amounting to between \$100,000 and \$1,000,000; 16, receipts of between \$20,000 and \$100,000; and 38, receipts of less than \$20,000.

The number of wage earners employed each month and the per cent which this number represented of the greatest number employed in any month were as follows:

MONTH.	WAGE EARNERS.		MONTH.	WAGE EARNERS.	
	Number.	Percent of maximum.		Number.	Percent of maximum.
January.....	1,371	90.7	July.....	1,504	99.5
February.....	1,374	90.9	August.....	1,499	99.1
March.....	1,392	92.1	September.....	1,497	99.0
April.....	1,411	93.3	October.....	1,512	100.0
May.....	1,439	95.2	November.....	1,505	99.5
June.....	1,482	98.0	December.....	1,497	99.0

The different kinds of primary power, the number of engines or motors, and the horsepower used in 1909 are shown in the following tabular statement:

KIND.	Number of engines or motors.	Horsepower.
Primary power, total.....		1,585
Owned:		
Steam.....	40	1,408
Gas.....	2	70
Water wheels.....	1	10
Rented:		
Electric.....	13	96
Other.....		3

The kind and amount of fuel used are shown in the following statement:

KIND.	Unit.	Quantity.
Anthracite coal.....	Tons.....	11
Bituminous coal.....	Tons.....	729
Wood.....	Cords.....	11,753
Oil.....	Barrels.....	21,888
Gas.....	1,000 feet.....	2,732

Custom sawmills and gristmills.—Statistics for custom sawmills and gristmills are not included in the general tables or in the totals for manufacturing industries, but are presented in the following summary:

	Custom sawmills.	Custom gristmills.
Number of establishments.....	4	15
Persons engaged in the industry.....	13	22
Proprietors and firm members.....	5	16
Salaried employees.....		
Wage earners (average number).....	8	6
Primary horsepower.....	90	344
Capital.....	\$6,580	\$40,710
Expenses.....	5,571	100,467
Services.....	4,614	2,046
Materials.....	135	197,323
Miscellaneous.....	822	1,038
Value of products.....	8,144	116,934

¹Includes estimate of all grain ground. A similar estimate for value of lumber sawed by custom sawmills is impracticable.

MANUFACTURES—OREGON.

TABLE I.—COMPARATIVE SUMMARY FOR 1909, 1904, AND 1899.

THE STATE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES.

INDUSTRY.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
			Total.	Proprietors and firm members.	Salaried employes.	Wage earners (average number).							
STATE—All Industries.....	1909	2,246	34,722	2,499	3,473	28,750	175,019	\$89,082	\$4,047	\$19,902	\$50,552	\$93,005	\$42,453
	1904	1,802	22,018	1,726	1,789	18,523	81,348	44,024	2,133	11,444	30,597	55,525	24,928
	1899	1,406			1,143	14,459	60,005	28,359	1,222	6,822	20,789	36,593	15,804
Bread and other bakery products.....	1909	151	905	182	110	613	336	1,609	78	441	1,621	2,329	1,208
	1904	93	618	118	70	430	253	775	74	221	375	1,504	629
	1899	53	348	64	41	243	.....	288	33	106	465	779	314
Brick and tile.....	1909	61	487	71	31	385	1,922	1,250	34	266	155	675	520
	1904	43	330	56	10	264	766	366	9	132	63	315	252
	1899	46	290	58	12	220	511	194	9	98	37	227	180
Butter, cheese, and condensed milk.....	1909	95	615	69	132	420	1,935	1,718	131	290	3,952	4,920	968
	1904	198	257	91	36	130	715	429	17	81	1,361	1,629	208
	1899	68	142	60	20	62	.....	223	9	27	509	639	130
Canning and preserving.....	1909	71	844	54	129	661	1,318	4,162	146	315	2,187	3,207	1,020
	1904	148	671	39	103	529	1,247	1,899	101	250	1,894	2,611	1,017
	1899	45	888	29	68	791	.....	2,708	67	244	1,298	1,994	696
Cars and general shop construction and repairs by steam-railroad companies.....	1909	8	822	.....	45	777	933	1,400	55	544	509	1,163	654
	1904	12	979	.....	49	930	955	390	62	677	356	1,285	578
	1899	14	780	.....	29	751	721	726	32	495	484	1,026	542
Clothing, men's, including shirts.....	1909	5	576	9	23	544	217	369	29	238	738	1,105	387
	1904	13	350	6	12	338	80	321	12	120	293	606	218
	1899	13	197	19	7	171	.....	187	3	43	107	165	58
Confectionery.....	1909	19	408	18	107	283	217	612	91	188	549	1,215	666
	1904	13	191	15	43	133	59	189	33	57	141	370	238
	1899	9	.....	.....	25	107	.....	125	19	28	96	200	113
Copper, tin, and sheet-iron products.....	1909	89	525	48	46	431	253	2,859	53	364	835	1,611	776
	1904	115	158	20	10	128	13	140	8	99	121	300	179
	1899	16	.....	.....	12	188	.....	401	11	100	341	602	261
Flour-mill and gristmill products.....	1909	114	620	101	125	394	11,541	5,670	140	278	7,667	8,891	1,224
	1904	105	581	101	85	395	9,993	3,997	107	271	7,352	8,468	1,116
	1899	105	.....	.....	82	420	7,217	3,001	83	239	5,180	6,136	956
Foundry and machine-shop products.....	1909	82	1,270	71	144	1,055	2,709	3,670	183	892	1,472	3,135	1,963
	1904	42	808	44	67	787	1,172	1,852	79	596	643	1,588	945
	1899	45	.....	.....	49	401	.....	993	52	230	328	848	520
Furniture and refrigerators.....	1909	19	621	16	53	552	1,501	1,232	62	323	484	1,094	610
	1904	18	486	20	41	425	699	786	44	233	338	790	452
	1899	11	220	10	12	198	.....	280	11	81	163	299	136
Ice, manufactured.....	1909	25	122	27	26	69	1,569	632	29	53	76	257	181
	1904	20	107	14	18	75	1,416	451	15	57	41	217	176
	1899	9	51	7	9	36	720	173	14	25	19	110	97
Leather goods.....	1909	48	484	51	80	353	173	824	92	262	689	1,629	640
	1904	26	330	24	36	270	71	532	38	173	542	925	383
	1899	122	.....	.....	19	258	.....	278	21	119	389	650	261
Leather, tanned, curried, and finished.....	1909	8	58	7	2	49	224	218	2	34	181	244	63
	1904	11	109	15	.....	94	314	272	.....	67	367	455	118
	1899	16	77	23	1	53	206	173	.....	28	190	250	60
Liquors, malt.....	1909	18	272	14	54	204	2,018	2,470	90	206	454	1,857	1,403
	1904	24	201	21	29	151	1,091	2,139	62	137	429	1,118	689
	1899	24	179	24	19	136	1,060	819	24	106	173	714	541
Lumber and timber products.....	1909	713	16,833	846	921	15,066	95,213	35,031	1,267	10,172	12,413	30,200	17,787
	1904	477	9,687	601	428	8,558	43,364	13,103	620	5,460	5,856	15,418	9,562
	1899	419	.....	.....	284	6,056	28,630	6,948	262	2,887	5,191	11,081	5,890
Marble and stone work.....	1909	23	121	21	24	76	159	221	24	75	113	297	184
	1904	18	50	12	.....	38	13	72	.....	42	77	190	113
	1899	10	.....	.....	11	36	.....	96	9	24	53	128	76
Mattresses and spring beds.....	1909	7	104	9	12	83	105	162	13	68	211	350	139
	1904	4	43	2	7	34	70	53	6	23	86	145	59
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Printing and publishing.....	1909	324	2,523	514	550	1,459	1,927	3,457	553	1,448	1,103	5,041	3,933
	1904	245	1,661	246	297	1,018	993	1,088	356	724	653	2,776	2,118
	1899	207	1,170	230	100	840	.....	1,675	116	400	374	1,494	1,120
Shipbuilding, including boat building.....	1909	24	250	29	9	212	287	240	10	190	204	477	273
	1904	11	181	8	4	169	70	120	7	122	123	297	174
	1899	10	361	15	8	338	90	127	10	187	307	654	347
Slaughtering and meat packing.....	1909	14	493	14	113	366	752	2,481	124	280	5,015	5,880	865
	1904	10	313	7	60	246	327	975	73	155	2,300	2,907	517
	1899	9	222	9	41	172	.....	760	47	88	1,359	1,638	279
Stoves and furnaces, including gas and oil stoves.....	1909	11	123	11	26	86	183	287	27	79	130	351	221
	1904	3	46	2	14	30	28	214	22	26	20	139	119
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tobacco manufactures.....	1909	56	251	62	2	187	.....	196	2	172	171	474	303
	1904	54	233	65	5	163	3	123	4	62	179	396	217
	1899	38	118	46	1	71	.....	59	1	33	60	146	86
Woolen, worsted, and felt goods, and wool huts.....	1909	8	598	2	37	469	1,628	1,265	42	202	527	929	402
	1904	7	594	3	25	566	955	1,272	43	220	496	1,034	538
	1899	11	704	3	29	672	1,113	1,176	33	209	496	898	432
All other industries.....	1909	303	4,887	259	672	3,956	47,899	17,047	705	2,582	8,796	15,174	6,378
	1904	212	3,138	196	320	2,622	16,651	11,836	441	1,419	5,866	9,823	3,957
	1899	210	.....	.....	264	2,240	.....	6,949	355	1,025	3,200	6,900	2,700

¹ Excluding statistics for two establishments, to avoid disclosure of individual operations.
² Excluding statistics for one establishment, to avoid disclosure of individual operations.

³ Figures can not be shown without disclosing individual operations.
⁴ Not reported separately.

MANUFACTURES—OREGON.

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TABLE I.—COMPARATIVE SUMMARY FOR 1909, 1904, AND 1899—Continued.

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES.

INDUSTRY AND CITY.	Census.	Number of establishments.	PERSONS ENGAGED IN INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
			Total.	Proprietors and firm members.	Salaried employees.	Wage earners (average number).							
			Expressed in thousands.										
PORTLAND—All industries.....	1909	649	14,891	763	1,914	12,214	32,122	\$37,996	\$2,241	\$3,979	\$26,076	\$46,861	\$20,785
	1904	437	9,594	398	1,025	8,171	.....	19,725	1,266	5,342	17,024	28,651	11,627
	1899	408	.....	.....	663	5,380	.....	11,633	732	2,704	10,177	18,904	6,727
Bread and other bakery products.....	1909	63	666	79	76	511	297	1,353	62	363	1,275	2,196	921
	1904	40	475	52	65	358	.....	673	72	178	701	1,182	481
	1899	35	272	42	38	194	.....	226	32	78	401	641	240
Brick and tile.....	1909	9	106	13	5	88	369	342	6	71	49	206	157
	1904	8	109	10	5	94	.....	153	4	48	30	127	97
	1899	5	72	5	4	63	.....	48	3	28	13	67	54
Butter, cheese, and condensed milk.....	1909	8	196	6	51	139	860	587	48	105	1,102	1,431	329
	1904	6	56	5	13	38	.....	177	9	25	432	521	89
	1899	5	21	1	8	12	.....	28	5	6	126	172	46
Canning and preserving.....	1909	8	169	10	26	133	77	300	31	49	250	464	214
	1904	7	153	8	16	129	.....	132	16	41	240	352	112
	1899	5	.....	.....	11	109	.....	89	12	15	120	192	72
Clothing, men's, including shirts.....	1909	5	576	9	23	544	217	369	29	238	738	1,105	367
	1904	3	356	6	12	338	.....	321	12	120	293	506	213
	1899	3	197	19	7	171	.....	187	3	43	107	165	58
Confectionery.....	1909	11	366	9	89	263	203	587	84	130	519	1,128	609
	1904	10	169	11	43	115	.....	172	33	50	126	342	216
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Copper, tin, and sheet-iron products.....	1909	28	454	32	44	373	253	2,782	51	311	732	1,419	687
	1904	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1899	12	.....	.....	7	97	.....	124	5	61	120	233	143
Flour-mill and gristmill products.....	1909	5	97	1	23	73	1,222	793	29	54	1,179	1,337	158
	1904	5	117	2	27	88	.....	675	51	60	2,457	2,713	256
	1899	6	129	3	33	93	.....	994	46	64	1,528	1,759	231
Foundry and machine-shop products.....	1909	44	947	34	114	799	2,080	2,593	140	704	1,222	2,527	1,305
	1904	21	673	21	51	601	.....	1,279	58	481	455	1,200	745
	1899	25	.....	.....	43	277	.....	593	42	164	228	610	382
Furniture and refrigerators.....	1909	11	530	11	41	478	1,207	1,110	50	288	458	993	535
	1904	11	405	8	37	360	.....	734	42	205	322	720	398
	1899	7	156	3	11	142	.....	225	10	57	139	225	86
Ice, manufactured.....	1909	4	31	1	14	16	575	268	22	14	45	108	63
	1904	6	59	2	6	45	.....	257	7	38	26	137	111
	1899	4	33	2	9	22	.....	106	14	16	13	91	78
Leather goods.....	1909	26	399	21	74	304	136	587	88	220	608	1,386	518
	1904	15	288	11	35	242	.....	437	37	154	468	800	312
	1899	13	.....	.....	19	245	.....	207	21	107	336	542	206
Lumber and timber products.....	1909	42	3,914	12	233	3,669	13,998	8,993	366	2,672	5,067	10,111	5,044
	1904	28	2,200	18	116	2,072	.....	3,875	184	1,455	3,101	5,435	2,334
	1899	17	.....	.....	78	1,260	.....	1,783	97	687	2,462	3,925	1,463
Marble and stone work.....	1909	7	59	5	16	38	90	102	19	38	71	175	104
	1904	4	32	6	.....	26	.....	51	31	81	64	149	85
	1899	4	.....	.....	7	20	.....	32	5	14	32	76	44
Printing and publishing.....	1909	132	1,681	311	418	952	1,402	2,239	446	1,036	847	3,736	2,889
	1904	78	846	59	253	534	.....	952	311	458	491	1,943	1,452
	1899	80	.....	.....	81	395	.....	1,174	101	230	267	964	697
Shipbuilding, including boat building.....	1909	7	112	4	7	101	68	99	9	92	90	231	141
	1904	8	158	6	3	149	.....	102	5	105	109	259	150
	1899	9	273	6	6	261	.....	98	8	120	187	400	213
Tobacco manufactures.....	1909	21	131	23	2	106	.....	96	2	106	89	260	171
	1904	25	112	32	.....	80	.....	45	.....	48	104	220	116
	1899	15	53	18	1	34	.....	21	1	15	24	65	41
All other industries.....	1909	218	4,457	182	658	3,617	9,068	14,796	759	2,493	11,475	18,048	6,573
	1904	162	3,386	141	343	2,902	.....	9,690	425	1,845	7,585	12,945	4,460
	1899	103	.....	.....	302	1,985	.....	5,698	327	999	4,074	6,747	2,673

CITIES OF 10,000 TO 50,000 INHABITANTS—ALL INDUSTRIES COMBINED.

Salem.....	1900	62	789	57	135	597	1,688	\$1,661	\$98	\$367	\$1,177	\$2,208	\$1,031
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¹ Excluding statistics for two establishments, to avoid disclosure of individual operations.
² Figures can not be shown without disclosing individual operations.
³ Excluding statistics for one establishment, to avoid disclosure of individual operations.

MANUFACTURES—OREGON.

TABLE III.—DETAIL STATEMENT FOR CITIES OF 50,000 INHABITANTS OR MORE, BY INDUSTRIES, CITIES OF 50,000 INHABITANTS OR MORE, BY INDUSTRIES. PORTLAND.

INDUSTRY AND CITY.	Number of establishments	PERSONS ENGAGED IN INDUSTRY.										WAGE EARNERS—NUMBER DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Primary horse-power.
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks.		Wage earners (average number).			Total.	16 and over.		Under 16.			
					Male.	Female.	Total.	16 and over.			Under 16.	Male.	Female.	Male.	Female.	
								Male.	Female.							
1 All industries.....	649	14,891	763	525	1,041	348	12,214	10,596	1,600	18	12,611	10,845	1,747	17	2	32,122
2 Bread and other bakery products.....	63	666	79	14	43	19	511	351	160	.....	547	376	171	.....	.....	297
3 Brick and tile.....	9	106	13	4	1	.....	88	88	.....	.....	172	172	.....	.....	.....	369
4 Butter, cheese, and condensed milk.....	8	196	6	10	24	17	139	137	2	.....	135	133	2	.....	.....	860
5 Canning and preserving.....	8	169	10	10	10	6	133	49	84	.....	223	84	144	.....	.....	77
6 Clothing, men's, including shirts.....	5	576	9	6	11	6	544	55	489	.....	540	55	485	.....	.....	217
7 Confectionery.....	11	366	9	13	60	16	268	77	191	.....	318	91	227	.....	.....	203
8 Copper, tin, and sheet-iron products.....	28	454	32	12	22	10	378	345	33	.....	391	357	34	.....	.....	253
9 Flour-mill and gristmill products.....	5	97	1	9	11	3	73	73	.....	.....	97	97	.....	.....	.....	1,222
10 Foundry and machine-shop products.....	44	947	34	51	48	15	799	799	.....	.....	750	750	.....	.....	.....	2,080
11 Furniture and refrigerators.....	11	530	11	9	24	8	478	471	7	.....	504	497	7	.....	.....	1,207
12 Ice, manufactured.....	4	31	1	6	8	.....	16	16	.....	.....	11	11	.....	.....	.....	575
13 Leather goods.....	26	399	21	24	40	10	304	293	11	.....	319	307	12	.....	.....	126
14 Lumber and timber products.....	42	3,914	12	96	108	29	3,669	3,664	5	.....	3,518	3,513	5	.....	.....	13,998
15 Marble and stone work.....	7	59	5	5	8	3	38	38	.....	.....	39	39	.....	.....	.....	90
16 Printing and publishing.....	132	1,681	311	91	238	89	952	843	97	12	981	869	100	10	2	1,402
17 Shipbuilding, including boat building.....	7	112	4	6	1	.....	101	101	.....	.....	102	102	.....	.....	.....	68
18 Tobacco manufactures.....	21	131	23	.....	2	.....	108	98	10	.....	109	99	10	.....	.....	.....
19 All other industries ¹	218	4,457	182	159	382	117	3,617	3,100	511	6	3,850	3,293	550	7	.....	9,068

¹ All other industries embrace: Artificial stone, 6; automobiles, including bodies and parts, 2; awnings, tents, and sails, 5; babbitt metal and solder, 1; bags, other than paper, 2; baking powders and yeast, 2; baskets, and rattan and willow ware, 1; blacking and cleansing and polishing preparations, 2; boots and shoes, including cut stock and findings, 4; boxes, cigar, 1; boxes, fancy and paper, 3; brass and bronze products, 3; brooms, 2; card cutting and designing, 1; carpets, rag, 3; carriages and wagons and materials, 14; cars and general shop construction and repairs by steam-railroad companies, 1; cars and general shop construction and repairs by street-railroad companies, 1; clothing, women's, 2; coffee and spice, roasting and grinding, 5; coffins, burial cases, and undertakers' goods, 1; cooperage and wooden goods, not elsewhere specified, 6; cordage and twine and jute and linen goods, 1; cutlery and tools, not elsewhere specified, 4; dairymen's, poulterers', and apiarists' supplies, 1; dyeing and finishing textiles, 1; electrical machinery, apparatus, and supplies, 1; engraving and die-sinking, 1; fancy articles, not elsewhere specified, 1; fertilizers, 1; flags, banners, regalia, society badges, and emblems, 1; flavoring extracts, 5; food preparations, 6; fur goods, 5; furnishing goods, men's, 1; gas and electric fixtures and lamps and reflectors, 3; gas, illuminating and heating, 2; glass, cutting, staining, and ornamenting, 4; gloves and mittens, leather, 4; hair work, 3; hand stamps and stencils and brands, 3; hosiery

CITIES OF 10,000 TO 50,000 INHABITANTS—ALL INDUSTRIES COMBINED.

1 SALEM.....	02	789	67	29	74	32	597	452	144	1	745	564	180	1	1,698
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MANUFACTURES—OREGON.

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AND TOTALS FOR ALL INDUSTRIES IN CITIES OF 10,000 BUT LESS THAN 50,000 INHABITANTS: 1909.

CITIES OF 50,000 INHABITANTS OR MORE, BY INDUSTRIES.

PORTLAND.

	Capital.	EXPENSES.										Value of products.	Value added by manufacture.
		Total.	Services.			Materials.		Miscellaneous.					
			Officials.	Clerks.	Wage earners.	Fuel and rent of power.	Other.	Rent of factory.	Taxes, including internal revenue.	Contract work.	Other.		
1	\$37,996,835	\$41,278,295	\$1,042,522	\$1,198,812	\$8,978,856	\$740,819	\$25,334,797	\$446,295	\$431,653	\$142,940	\$2,961,601	\$46,860,767	\$20,785,151
2	1,352,759	1,893,387	28,130	34,198	362,842	32,981	1,242,217	25,033	9,107	-----	158,849	2,196,346	921,148
3	341,763	150,884	5,400	900	70,658	41,625	7,720	-----	2,198	1,700	20,683	206,425	157,080
4	586,945	1,319,424	14,550	33,151	104,980	16,423	1,085,934	17,930	2,887	1,200	42,869	1,430,802	328,505
5	300,260	353,336	17,126	13,640	49,042	2,699	247,718	1,945	1,279	-----	19,887	463,630	213,513
6	368,594	1,054,482	14,100	14,469	238,127	3,604	734,135	12,688	1,734	-----	35,265	1,105,248	367,149
7	586,940	915,518	25,050	59,361	130,271	10,292	508,705	21,246	2,892	-----	157,701	1,128,289	609,292
8	2,782,079	1,262,181	22,470	28,353	311,261	13,375	718,429	10,642	6,613	634	150,374	1,418,786	686,982
9	793,177	1,305,232	15,780	13,291	53,552	14,106	1,165,212	2,000	4,357	-----	36,934	1,337,119	157,801
10	2,593,462	2,246,855	96,360	44,025	704,390	53,448	1,168,966	19,716	16,366	-----	143,594	2,527,374	1,304,960
11	1,109,805	903,124	22,600	27,551	283,149	10,817	447,155	10,685	6,633	-----	94,534	992,945	534,973
12	268,268	93,082	14,400	7,317	14,368	30,549	14,914	4,100	1,186	-----	6,248	107,983	62,520
13	586,798	1,285,526	34,600	53,292	220,436	4,638	863,175	26,303	3,198	-----	79,384	1,386,259	518,446
14	8,993,365	8,888,500	220,093	145,608	2,072,399	27,694	5,039,503	35,988	70,954	17,300	658,301	10,110,975	5,043,778
15	102,334	142,108	7,500	11,004	38,168	1,731	69,176	4,090	378	-----	10,061	174,960	104,053
16	2,239,039	2,863,540	153,627	262,336	1,035,666	42,991	803,945	81,442	10,293	121,833	312,407	3,735,974	2,889,038
17	98,768	198,092	7,000	1,500	91,553	328	89,537	3,765	601	-----	3,808	230,608	140,743
18	85,641	228,517	-----	1,800	106,040	341	88,541	4,770	15,796	-----	11,229	259,539	170,057
19	14,795,938	16,174,507	343,136	416,956	2,491,924	432,817	11,039,815	163,422	206,191	273	1,019,973	18,047,145	6,574,513

and knit goods, 1; hats and caps, other than felt, straw, and wool, 1; hats, fur-felt, 1; instruments, professional and scientific, 1; iron and steel, steel works and rolling mills, 2; iron and steel, bolts, nuts, washers, and rivets, not made in steel works or rolling mills, 1; jewelry, 4; labels and tags, 1; lapidary work, 2; leather, tanned, curried, and finished, 2; liquors, malt, 4; matches, 1; mattresses and spring beds, 5; millinery and lace goods, 4; mineral and soda waters, 5; mirrors, 1; models and patterns, not including paper patterns, 5; mucilage and paste, 1; oil, linseed, 1; optical goods, 3; paint and varnish, 5; patent medicines and compounds and druggists' preparations, 8; pottery, terra-cotta, and fire-clay products, 2; pumps, not including steam pumps, 1; rice, cleaning and polishing, 1; show cases, 2; slaughtering and meat packing, 4; soap, 3; statuary and art goods, 1; steam packing, 3; stereotyping and electrotyping, 2; stoves and furnaces, including gas and oil stoves, 3; surgical appliances and artificial limbs, 3; toys and games, 1; type founding and printing materials, 1; umbrellas and canes, 3; vinegar and cider, 1; wall plaster, 1; window shades and fixtures, 2; wirework, including wire rope and cable, 3; wood, turned and carved, 1; woolen, worsted, and felt goods, and wool hats, 2.

CITIES OF 10,000 TO 50,000 INHABITANTS—ALL INDUSTRIES COMBINED.

1	\$1,661,062	\$1,912,092	\$38,804	\$59,099	\$366,588	\$42,118	\$1,135,083	\$13,106	\$31,202	\$6,215	\$219,877	\$2,208,031	\$1,130,830
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