

CHAPTER 4.

STATISTICS OF MANUFACTURES FOR THE STATE, CITIES, AND INDUSTRIES.

Introduction.—This chapter gives the statistics of manufactures for the state of Pennsylvania for the calendar year 1909 as shown by the Thirteenth Census.

The text summarizes the general results of the census inquiry, presenting a series of special tables in which the main facts printed in the general tables are given in convenient form for the state as a whole and for important industries. It also presents tables in which the statistics for the industries of the state as a whole and for a few important industries are classified by a character of ownership, size of establishments, number of wage earners, and prevailing hours of labor, information which could not be presented in general tables for each industry without disclosing the facts for individual establishments.

At the end of the chapter are three general tables.

Table I gives for 1909, 1904, and 1899 the number of establishments and of persons engaged in the industries, primary power, capital, salaries and wages, cost of materials, value of products, and value added by manufacture reported for all industries combined and for certain important industries (1) for the state as a whole and (2) for the cities of Allentown, Altoona, Erie, Harrisburg, Johnstown, Philadelphia, Pittsburgh, Reading, Scranton, and Wilkes-Barre. It also gives the same items for all industries combined for every place except Coatesville, Duquesne, Monessen, North Braddock, Old Forge, South Sharon, and Steelton, having in 1910 a population of over 10,000 but less than 50,000.

Table II gives statistics in detail for 1909 for the state and for a larger number of industries.

Table III gives statistics in detail for 1909 for the 10 cities having 50,000 inhabitants or more, for all industries combined and selected industries, and for each city having from 10,000 to 50,000 inhabitants for all industries combined.

Scope of census: Factory industries.—Census statistics of manufactures are compiled primarily for the purpose of showing the absolute and relative magnitude of the different branches of industry covered and their growth or decline. Incidentally, the effort is made to present data throwing light upon character of organization, location of establishments, size of establishments, labor force, and similar subjects. When use is made of the data for these purposes it is imperative that due attention should be given to the limitations of the figures. Particularly is this true when the attempt is made to derive from them figures purporting to show average wages, cost of production, or profits. These limitations will be fully discussed in the general report on manufactures for the United States as a whole.

The census of 1909, like that of 1904, was confined to manufacturing establishments conducted under the factory system, as dis-

tinguished from the neighborhood, hand, and building industries. Where statistics for 1899 are given they have been reduced to a comparable basis by eliminating the latter classes of industries. The census does not include establishments which were idle during the entire year, or had a value of products of less than \$500, or the manufacturing done in educational, eleemosynary, and penal institutions, or in governmental establishments, except those of the Federal Government.

Period covered.—The returns cover the calendar year 1909, or the business year which corresponds most nearly to that calendar year. The statistics cover a year's operations, except for establishments which began or discontinued business during the year.

The establishment.—The term "establishment" comprises the factories, mills, or plants which are under a common ownership or control and for which one set of books of account is kept.

If, however, the plants constituting an establishment as thus defined were not all located within the same city or state, separate reports were secured in order that the separate totals might be included in the statistics for each city or state. In some instances separate reports were secured for different industries carried on in the same establishment.

Classification by industries.—The establishments were assigned to the several classes of industries according to their products of chief value. The products reported for a given industry may thus, on the one hand, include minor products very different from those covered by the class designation, and, on the other hand, may not include the total product covered by this designation, because some part of this product may be made in establishments in which it is not the product of chief value.

Selected industries.—The general tables at the end of this chapter give the principal facts separately for the industries of the state. A selection has been made of the leading industries of the state for more detailed consideration. Sometimes an industry of greater importance than some of those selected is omitted because it comprises so few establishments that these detailed presentations would reveal the operations of individual concerns.

Comparisons with previous censuses.—Owing to the changes in industrial conditions, it is not always possible to classify establishments by industries in such a way as to permit accurate comparison with preceding censuses. Table I, giving comparable figures for 1909, 1904, and 1899, therefore, does not embrace all the industries shown for 1909 in Table II.

Influence of increased prices.—In considering changes in cost of materials, value of products, and value added by manufacture, account should be taken of the general increase in the prices of commodities during recent years. To the extent to which this factor has been influential the figures can not be taken as an exact measure of increase in the volume of business.

Persons engaged in industry.—At the censuses of 1909, 1904, and 1899 the following general classes of persons engaged in manufacturing industries have been distinguished: (1) Proprietors and firm members, (2) salaried officers of corporations, (3) superintendents and managers, (4) clerks, and (5) wage earners. In the censuses of 1904 and 1899 these five classes were shown according to the three main groups: (1) Proprietors and firm members, (2) salaried officials, clerks, etc., and (3) wage earners. The second group included the three classes of salaried officers of corporations, superintendents and managers, and clerks. In the present census entirely different grouping is employed: That into (1) proprietors and officials, (2)

clerks, and (3) wage earners. The first group includes proprietors and firm members, salaried officers of corporations, and superintendents and managers.

At this census the number of persons engaged in the industries, segregated by sex, and, in the case of wage earners, also by age (whether under 16 or 16 and over), was reported for December 15, or the nearest representative day. The 15th of December was selected as representing for most industries normal conditions of employment, but where conditions were exceptional, and particularly in the case of certain seasonal industries, such as canning, the December date could not be accepted as typical and an earlier date had to be chosen.

In the case of employes other than wage earners the number thus reported on December 15, or other representative day, has been treated as equivalent to the average for the year, since the number of employees of this class does not vary much from month to month in a given industry. In the case of wage earners the average is obtained in the manner explained in the next paragraph.

Wage earners.—In addition to the report by sex and age of the number of wage earners on December 15, or other representative day, a report was obtained of the number employed on the 15th of each month, without distinction of sex or age. From these figures the average number of wage earners for the year has been calculated by dividing the sum of the numbers reported each month by 12. The average thus obtained represents the number of wage earners that would be required to perform the work done if all were constantly employed during the entire year. Accordingly, the importance of any industry as an employer of labor is believed to be more accurately measured by this average than by the number employed at any one time or on a given day.

The number of wage earners reported for the representative day, though given for each separate industry, is not totaled for all industries combined, because in view of the variations of date such a total is believed not to be significant. It would involve more or less duplication of persons working in different industries at different times, would not represent the total number employed in all industries at any one time, and would give an undue weight to seasonal industries as compared with industries in continual operation.

In particular, totals by sex and age for the wage earners reported for the representative day would be misleading because of the undue weight given to seasonal industries, in some of which, such as canning and preserving, the distribution of the wage earners by sex and age is materially different from that in most industries of more regular operation. In order to determine as nearly as possible the sex and age distribution of the average number of wage earners in the state as a whole, the following procedure has been adopted:

The percentage distribution by sex and age of the wage earners in each industry, for December 15, or the nearest representative day, has been calculated from the actual numbers reported for that date. This percentage has been applied to the average number of wage earners for the year in that industry, to determine the average number of men, women, and children employed. These calculated averages for the several industries have been added up to give the average distribution for the state as a whole.

In 1899 and 1904 the schedule called for the average number of wage earners of each sex 16 years and over, and the total number under 16 years of age, for each month, and these monthly statements were combined in an annual average. Comparatively few manufacturing concerns, however, keep their books in such way as to show readily the number of men, women, and children (under 16) employed each month. These monthly returns by sex and age were, in fact, largely estimates. It was believed that a more accurate and reliable sex and age distribution could be secured by taking as a basis of estimate the actual numbers employed on a single day.

Prevailing hours of labor.—The census made no attempt to ascertain the number of employees working a given number of hours per week. The inquiry called merely for the prevailing practice followed in each establishment. Occasional variations in hours in an establishment from one period to another are disregarded, and

no attention is given to the fact that a limited number of employes may have hours differing from those of the majority. In the tables all the wage earners of each establishment are counted in the class within which the establishment itself falls. In most establishments, however, all or practically all the employees work the same number of hours, so that these figures give a substantially correct picture of the hours of labor in manufacturing industries.

Capital.—For reasons stated in prior census reports, the statistics of capital secured by the census canvass are so defective as to be without value, except as indicating very general conditions. The instructions on the schedule for securing capital were as follows:

The answer should show the total amount of capital, both owned and borrowed, on the last day of the business year reported. All the items of fixed and live capital may be taken at the amounts carried on the books. If land or buildings are rented, that fact should be stated and no value given. If a part of the land or buildings is owned, the remainder being rented, that fact should be so stated and only the value of the owned property given. Do not include securities and loans representing investments in other enterprises.

Materials.—Cost of materials refers to the materials used during the year, which may be more or less than the materials purchased during the year. The term materials includes fuel, rent of power and heat, mill supplies, and containers, as well as materials forming a constituent part of the product. Fuel includes all fuel used whether for heat, light, or power, or for the process of manufacture.

Expenses.—Under "Expenses" are included all items of expense incident to the year's business, except interest, whether on bonds or other forms of indebtedness, and allowances for depreciation.

Value of products.—The value of products for any industry includes the total value of all products manufactured in establishments whose products of chief value fall under the industry designation. The amounts given represent the selling value at the factory of all products manufactured during the year, which may differ from the value of the products sold. Amounts received for work on materials furnished by others are included.

Value added by manufacture.—The value of products is not a satisfactory measure of either the absolute or the relative importance of a given industry, because only a part of this value is actually created by the manufacturing process carried on in the industry itself. Another part of it, and often by far the larger part, represents the value of the materials used, which have been produced by agriculture or mining or by other industrial establishments. For many purposes, therefore, the best measure of the importance of different classes of industry is the value created as the result of the manufacturing operations carried on within the industry. This value is obtained by deducting the cost of the materials consumed from the value of the product. The figure thus obtained is termed in the census reports "value added by manufacture."

There is a further statistical advantage which "value added" has over gross value of products. In combining the value of products for all industries the value of products produced by one establishment and used as materials in another is duplicated, and the total, therefore, gives a greatly exaggerated idea of the wealth created. No such duplication takes place in the total "value added by manufacture."

Cost of manufacture and profits.—Census data do not show the entire cost of manufacture, and consequently can not be used to show profits. No account has been taken of interest and depreciation. Even if the amount of profit could be determined by deducting the expenses from the value of the products, the rate of profit on the investment could not properly be calculated, because of the very defective character of the returns regarding capital.

Primary power.—The figures given for this item show the total of the primary power used by the establishments. They do not cover the power developed by motors operated by such power, the inclusion of which would evidently result in duplication.

Location of establishments.—The Census Bureau has classified establishments by their location in cities or classes of cities. In interpreting these figures due consideration should be given to the

fact that often establishments are located just outside the boundaries of cities, and are necessarily so classified, though locally they are looked upon as constituting a part of the manufacturing interests of the cities.

Laundries.—The census of 1909 was the first to include statistics of laundries. The reports are confined to establishments using mechanical power. The data are presented separately

and are not included in the general total for manufacturing industries, in order to avoid interference with comparisons with prior censuses.

Custom sawmills and gristmills.—In order to make the statistics for 1909 comparable with those for 1904 the data for these mills have been excluded from all the tables presenting general statistics and are given in a separate table at the end of this chapter.

INDUSTRIES IN GENERAL.

General character of the state.—Pennsylvania, with a gross area of 45,126 square miles, of which 294 represent water surface, ranks thirty-second in size among the states of the Union. Its population in 1910 was 7,665,111, as compared with 6,302,115 in 1900 and 5,258,113 in 1890. In 1910 the density of population for the state was 171 per square mile, the corresponding figure for 1900 being 140.6. It ranked second among the states as regards population in each of the census years named and at all prior censuses since the first in 1790, except two, those of 1810 and 1820, when it was third. Sixty and four-tenths per cent of the entire population of the state in 1910 resided in incorporated places having a population of 2,500 or over, as against 54.7 per cent in 1900.

In 1910, 10 cities in the state had a population of over 50,000, as follows: Philadelphia, 1,549,008, ranking third among the cities of the country; Pittsburgh, 533,905, ranking eighth; Scranton, 129,867; Reading, 96,071; Wilkes-Barre, 67,105; Erie, 66,525; Harrisburg, 64,186; Johnstown, 55,482; Altoona, 52,127; and Allentown, 51,913. There were also 53 cities and boroughs having a population of over 10,000 but less than 50,000. (See table on p. 709.) These 63 cities and boroughs contained 47.7 per cent of the total population of the state and were credited in 1909 with 63.3 per cent of the total value of its manufactures. Apart from these places, only 12.7 per cent of the population resided in places of 2,500 inhabitants or over.

The transportation facilities of the state, both by rail and by water, are excellent. The state is traversed by numerous lines of railway, some of which are the main lines of the most important systems in the United States. The total trackage within its borders in 1909 was 11,206 miles,¹ an amount which was exceeded by only two states, Texas and Illinois. Philadelphia is one of the most important ports of the country, Erie has one of the best harbors on the Great Lakes, and Pittsburgh has the advantages of river transportation via the Monongahela, Allegheny, and Ohio to the Mississippi River.

The natural resources of the state, which are varied and of great importance, have had a marked influence in the establishment and growth of many industries in the state. Some of the materials used in manu-

facture, such as petroleum, natural gas, bituminous coal, anthracite coal, iron ore, limestone, clay, glass sand, timber, and tobacco, are produced in large quantities. The accessibility and supply of these raw materials determine, in a large measure, the location of many manufacturing establishments, especially in the iron, coke, lumber, wood pulp, and glass industries.

Importance and growth of manufactures.—From the colonial period until the present time Pennsylvania has been among the leading states in manufactures, holding third place as measured by gross value of manufactured products in 1849, when the first authoritative census of manufactures was taken, but advancing to second place in 1859, a position which it has since retained. During the census year 1849 an average of 146,766 wage earners, representing 6.3 per cent of the total population, were employed in manufactures, while in 1909 an average of 877,543, or 11.4 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 \$67 to \$343. With the rapid development of manufactures in other sections, however, Pennsylvania's proportion of the total value of manufactures in the country declined from 15.2 per cent in 1849 to 12.7 per cent in 1909.

The first table on page 698 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 Pennsylvania had 27,563 manufacturing establishments, which gave employment to an average of 1,002,171 persons during the year and paid out \$566,524,000 in salaries and wages. Of the persons employed, 877,543 were wage earners. These establishments turned out products to the value of \$2,626,742,000, to produce which materials costing \$1,582,560,000 were utilized. The value added by manufacture was thus \$1,044,182,000, 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 Pennsylvania, 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 five years

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

from 1904 to 1909 the number of establishments increased 17.3 per cent and the average number of wage earners 15 per cent, while the value of products increased 34.3 per cent and the value added by manufacture 28.5 per cent. As pointed out in the Introduc-

tion, it would be improper to infer that manufactures increased in volume to the full extent indicated by these figures relating to values, since the increase shown is certainly due, in part, to the increase which 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.....	27,563	23,495	23,462	17.3	0.1
Persons engaged in manufactures.....	1,002,171	855,392	(1)	17.2	.....
Proprietors and firm members.....	29,743	26,029	(1)	14.3	.....
Salaries employees.....	94,885	66,081	43,935	43.6	50.4
Wage earners (average number).....	877,543	763,282	663,960	15.0	15.0
Primary horsepower.....	2,921,547	2,302,398	1,716,694	26.9	34.1
Capital.....	\$2,749,006,000	\$1,995,837,000	\$1,449,815,000	37.7	37.7
Expenses.....	2,355,385,000	1,751,440,000	1,412,796,000	34.5	24.0
Services.....	566,524,000	441,230,000	343,021,000	28.4	28.6
Salaries.....	110,897,000	73,269,000	46,145,000	51.4	58.8
Wages.....	455,627,000	367,961,000	296,876,000	23.8	23.9
Materials.....	1,582,560,000	1,142,943,000	958,301,000	38.5	19.3
Miscellaneous.....	206,301,000	167,267,000	111,474,000	23.3	50.1
Value of products.....	2,626,742,000	1,955,551,000	1,649,882,000	34.3	18.5
Value added by manufacture (value of products less cost of materials).....	1,044,182,000	812,608,000	691,581,000	28.5	17.5

¹ Figures not available.

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

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.

This table specifies 94 industries or industry groups which had in 1909 a product in excess of \$700,000 in value. Of the industries listed in the table there

are three whose product exceeds \$100,000,000 in value; 10, with a product between \$50,000,000 and \$100,000,000 in value; 11, with a product between \$25,000,000 and \$50,000,000 in value; and 19, with a product between \$10,000,000 and \$25,000,000 in value, making an aggregate of 43 industries which had a value of products in excess of \$10,000,000 each. Mention is also made of 14 other industries, with a product between \$5,000,000 and \$10,000,000 in value; 36, with a product of \$1,000,000 to \$5,000,000 in value; and 1, with a product less than \$1,000,000 in value.

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.....	27,563	877,543	100.0	\$2,626,742,000	100.0	\$1,044,182,000	100.0	34.3	18.5	28.5	17.5
Iron and steel, steel works and rolling mills.....	189	120,911	14.5	500,344,000	19.0	171,331,000	16.4	37.5	9.3	36.1	10.6
Foundry and machine-shop products.....	1,695	86,821	9.9	210,746,000	8.0	109,735,000	10.5	37.4	.....	30.1	.....
Iron and steel, blast furnaces.....	66	14,521	1.7	168,578,000	6.4	26,504,000	2.5	56.9	.....	25.4	-43.6
Leather, tanned, curried, and finished.....	163	14,008	1.6	77,926,000	3.0	18,813,000	1.8	12.2	24.8	34.2	6.1
Woolen, worsted, and felt goods, and wool hats.....	217	27,409	3.1	77,447,000	2.9	22,813,000	2.2	38.5	14.7	22.1	7.4
Cars and general shop construction and repairs by steam-railroad companies.....	132	49,645	5.3	76,035,000	2.9	34,034,000	3.3	24.6	41.7	20.8	43.9
Printing and publishing.....	2,461	24,096	2.8	70,584,000	2.7	47,831,000	4.6	28.2	36.4	22.7	33.7
Silk and silk goods, including throwsters.....	226	36,469	4.2	62,061,000	2.4	26,895,000	2.6	57.8	26.6	78.5	34.7
Lumber and timber products.....	2,667	20,873	3.1	57,454,000	2.2	30,140,000	2.9	1.3	5.2	-7.1	12.1
Petroleum, refining.....	41	2,900	0.3	53,088,000	2.0	5,648,000	0.5	11.9	35.7	33.8	14.4
Slaughtering and meat packing.....	180	3,050	0.3	51,851,000	2.0	7,006,000	0.7	56.6	29.6	47.2	27.6
Coke.....	146	15,331	1.7	51,816,000	2.0	18,054,000	1.7	79.1	29.8	29.5	31.5
Tobacco manufactures.....	2,432	33,188	3.8	50,161,000	1.9	29,448,000	2.8	22.7	24.9	18.0	20.4
Hosiery and knit goods.....	464	38,206	4.4	49,658,000	1.9	22,440,000	2.1	61.2	40.5	51.9	34.4
Liquors, malt.....	237	7,234	0.8	47,713,000	1.8	35,103,000	3.4	36.9	19.5	37.2	13.5
Bread and other bakery products.....	3,185	12,221	1.4	45,850,000	1.7	18,520,000	1.8	37.4	60.6	31.6	44.6
Flour-mill and gristmill products.....	1,450	2,432	0.3	44,783,000	1.7	6,613,000	0.6	16.3	30.3	24.4	12.9
Clothing, men's, including shirts.....	696	23,623	2.7	39,622,000	1.5	19,819,000	1.9	25.1	5.5	31.3	3.1
Cotton goods, including cotton small wares.....	175	16,293	1.9	33,917,000	1.3	15,160,000	1.4	29.0	3.3	26.6	2.4
Clothing, women's.....	461	15,701	1.8	32,837,000	1.3	14,081,000	1.4	117.7	29.0	104.4	32.4
Glass.....	112	23,710	2.7	32,818,000	1.2	20,184,000	1.9	18.6	25.7	10.0	17.8
Electrical machinery, apparatus, and supplies.....	84	11,025	1.3	31,351,000	1.2	17,816,000	1.7	19.4	37.4	19.6	92.4
Cars, steam-railroad, not including operations of railroad companies.....	13	7,766	0.9	27,510,000	1.0	8,508,000	0.8	41.6	0.9	51.7	-20.7
Tin plate and temperplate.....	17	2,346	0.3	25,234,000	1.0	2,336,000	0.2	30.5	54.4	33.3	-19.2
Carpets and rugs, other than rag.....	93	11,510	1.3	24,870,000	0.9	10,231,000	1.0	-8.3	17.3	-1.8	11.5

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.

STATISTICS OF MANUFACTURES.

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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
Boots and shoes, including out stock and findings.....	140	10,822	1.2	20,219,000	0.8	8,155,000	0.8	35.8	7.6	36.4	16.1
Paper and wood pulp.....	62	6,656	0.8	19,873,000	0.8	8,475,000	0.8	29.0	25.6	22.8	17.1
Furniture and refrigerators.....	304	9,924	1.1	18,952,000	0.7	9,913,000	0.9	48.3	26.9	35.1	32.3
Cement.....	27	8,080	0.9	18,855,000	0.7	8,747,000	0.8	84.2	.....	48.9	.....
Iron and steel pipe, wrought.....	11	3,873	0.4	18,291,000	0.7	4,269,000	0.4	90.1	-37.5	74.3	-35.5
Copper, tin, and sheet-iron products.....	339	6,815	0.8	17,187,000	0.7	8,346,000	0.8	77.5	35.6	76.2	35.3
Chemicals.....	37	3,185	0.4	15,978,000	0.6	5,778,000	0.6	35.7	.....	28.1	.....
Gas, illuminating and heating.....	99	3,119	0.4	15,840,000	0.6	11,741,000	1.1	46.5	37.3	53.2	62.4
Liquors, distilled.....	88	7,724	0.1	14,367,000	0.5	11,255,000	1.1	193.1	-8.5	330.6	-31.0
Paint and varnish.....	114	1,992	0.2	14,020,000	0.5	4,819,000	0.5	20.5	3.0	34.9	-24.1
Butter, cheese, and condensed milk.....	536	1,177	0.1	13,544,000	0.5	1,870,000	0.2	17.0	12.5	-2.9	22.0
Confectionery.....	251	5,408	0.6	13,542,000	0.5	5,339,000	0.5	34.4	34.6	27.4	31.5
Pottery, terra-cotta, and fire-clay products.....	139	9,003	1.0	13,072,000	0.5	8,963,000	0.9	21.5	32.4	14.2	38.3
Hats, fur-felt.....	38	7,220	0.8	13,023,000	0.6	8,010,000	0.8	77.2	73.2	73.3	94.5
Carriages and wagons and materials.....	655	7,498	0.9	12,745,000	0.5	7,041,000	0.7	10.9	9.9	6.8	6.2
Patent medicines and compounds and druggists' preparations.....	367	2,761	0.3	12,656,000	0.5	7,346,000	0.7	33.8	5.8	36.7	3.9
Dyeing and finishing textiles.....	135	6,086	0.7	12,059,000	0.5	6,728,000	0.6	77.7	-3.6	64.7	5.7
Marble and stone work.....	598	9,264	1.1	11,570,000	0.4	7,850,000	0.7	72.4	24.9	67.8	45.3
Canning and preserving.....	83	2,724	0.3	9,484,000	0.4	4,819,000	0.5	17.6	33.5	19.5	29.6
Brick and tile.....	326	8,058	0.9	9,225,000	0.4	6,772,000	0.6	26.7	22.3	19.2	18.0
Soap.....	50	1,197	0.1	9,124,000	0.3	3,177,000	0.3	31.1	92.6	9.4	91.1
Brass and bronze products.....	104	2,080	0.2	8,455,000	0.3	2,850,000	0.3	.....	.....	.....	.....
Cutlery and tools, not elsewhere specified.....	129	4,250	0.5	8,022,000	0.3	4,591,000	0.4	37.9	55.5	23.2	67.9
Stoves and furnaces, including gas and oil stoves.....	74	4,198	0.5	7,409,000	0.3	4,937,000	0.5	-3.7	.....	-8.5	.....
Millinery and lace goods.....	105	4,235	0.5	6,770,000	0.3	3,016,000	0.3	145.4	76.4	136.4	65.3
Fertilizers.....	48	1,224	0.1	6,543,000	0.3	1,930,000	0.2	59.8	12.4	60.3	13.6
Automobiles, including bodies and parts.....	44	3,199	0.4	6,532,000	0.3	2,481,000	0.2	432.8	1,138.4	297.0	819.1
Explosives.....	27	1,033	0.1	6,388,000	0.2	2,300,000	0.2	59.2	54.6	53.6	39.7
Shipbuilding, including boat building.....	31	3,558	0.4	6,178,000	0.2	3,468,000	0.3	-40.2	-28.7	-32.6	-29.7
Leather goods.....	156	2,524	0.3	5,824,000	0.2	2,671,000	0.3	13.0	28.9	6.4	18.4
Boxes, fancy and paper.....	118	4,604	0.5	5,184,000	0.2	2,894,000	0.3	32.7	30.8	29.8	29.2
Umbrellas and canes.....	45	2,315	0.3	5,060,000	0.2	1,912,000	0.2	-1.4	-12.6	5.4	-25.2
Steam packing.....	31	1,677	0.2	4,987,000	0.2	2,006,000	0.2	22.9	119.0	-15.7	132.6
Ice, manufactured.....	170	1,606	0.2	4,823,000	0.2	3,598,000	0.3	64.3	44.0	61.7	35.1
Chocolate and cocoa products.....	6	863	0.1	4,811,000	0.2	1,856,000	0.2	125.4	105.4	149.5	340.2
Cordage and twine and jute and linen goods.....	18	2,119	0.2	4,805,000	0.2	1,804,000	0.2	-6.5	-29.2	21.1	-17.6
Agricultural implements.....	36	2,401	0.3	4,805,000	0.2	2,723,000	0.3	-4.2	56.9	-7.4	49.6
Copperage and wooden goods, not elsewhere specified.....	133	1,630	0.2	4,630,000	0.2	1,641,000	0.2	16.5	23.7	5.6	31.4
Saws.....	15	1,876	0.2	3,794,000	0.1	2,388,000	0.2	14.2	32.9	22.1	30.1
Paper goods, not elsewhere specified.....	34	1,357	0.2	3,710,000	0.1	1,494,000	0.1	.....	.....	.....	.....
Wall paper.....	11	1,056	0.1	3,695,000	0.1	1,386,000	0.1	22.2	4.5	11.2	19.1
Smelting and refining, not from the ore.....	24	206	(²)	3,577,000	0.1	599,000	0.1	29.8	9.3	26.1	4.2
Lime.....	348	3,258	0.4	3,342,000	0.1	2,304,000	0.2	32.9	.....	31.6	.....
Cork, cutting.....	10	1,727	0.2	2,965,000	0.1	1,296,000	0.1	-6.0	45.2	-5.7	28.7
Gas and electric fixtures and lamps and reflectors.....	75	1,482	0.2	2,962,000	0.1	1,723,000	0.2	16.5	1.2	0.9	17.2
Wood distillation, not including turpentine and rosin.....	50	933	0.1	2,960,000	0.1	1,276,000	0.1	-4.3	.....	-7.8	.....
Clocks and watches, including cases and materials.....	8	1,395	0.2	2,873,000	0.1	1,701,000	0.2	.....	.....	.....	.....
Coffins, burial cases, and undertakers' goods.....	36	1,103	0.1	2,757,000	0.1	1,182,000	0.1	38.6	63.8	20.1	56.4
Cars and general shop construction and repairs by street-railroad companies.....	65	2,442	0.3	2,747,000	0.1	1,653,000	0.2	118.2	1.1	113.0	19.6
Dentists' materials.....	23	1,072	0.1	2,745,000	0.1	1,420,000	0.1	17.5	27.8	53.2	9.3
Musical instruments, pianos and organs and materials.....	30	1,182	0.1	2,382,000	0.1	1,124,000	0.1	35.6	18.1	2.1	27.0
Boxes, cigar.....	77	1,801	0.2	2,328,000	0.1	1,076,000	0.1	23.9	21.0	25.7	33.1
Brooms and brushes.....	139	860	0.1	2,304,000	0.1	1,049,000	0.1	34.9	-3.4	17.2	8.1
Mattresses and spring beds.....	83	745	0.1	2,223,000	0.1	890,000	0.1	11.0	6.7	-0.2	21.9
Shoddy.....	20	450	(²)	2,051,000	0.1	588,000	0.1	-9.9	52.1	19.8	29.6
Buttons.....	24	1,123	0.1	1,565,000	0.1	819,000	0.1	73.9	-9.9	51.7	-9.4
Files.....	7	1,217	0.1	1,540,000	0.1	1,113,000	0.1	39.6	-8.8	52.0	-5.9
Fancy articles, not elsewhere specified.....	52	823	0.1	1,385,000	0.1	793,000	0.1	54.9	0.9	50.2	11.9
Belting and hose, leather.....	17	156	(²)	1,379,000	0.1	368,000	(²)	59.4	29.9	13.6	65.3
Safes and vaults.....	7	695	0.1	1,338,000	0.1	695,000	0.1	0.4	86.4	13.3	68.3
Artificial flowers and feathers and plumes.....	30	805	0.1	1,319,000	0.1	644,000	0.1	.....	.....	.....	.....
Jewelry.....	75	456	(²)	1,275,000	0.1	678,000	0.1	22.6	50.1	21.7	26.6
Fur goods.....	58	227	(²)	1,217,000	(²)	673,000	0.1	69.5	-8.5	95.1	-17.3
Photo-engraving.....	31	489	0.1	1,132,000	(²)	901,000	0.1	41.1	111.6	33.7	110.6
Hats and caps, other than felt, straw, and wool.....	53	744	0.1	1,087,000	(²)	554,000	0.1	3.2	.....	3.2	.....
Optical goods.....	24	579	0.1	1,063,000	(²)	602,000	0.1	125.7	-8.0	90.5	-0.3
Ink, printing.....	8	165	(²)	1,050,000	(²)	427,000	(²)	53.5	67.6	52.0	37.7
Typewriters and supplies.....	8	555	0.1	1,017,000	(²)	823,000	0.1	403.5	-54.4	483.1	-61.4
Crucibles.....	5	106	(²)	728,000	(²)	298,000	(²)	-7.1	-31.6	19.2	2.0
All other industries.....	2,893	56,433	6.4	211,025,000	8.0	75,270,000	7.2	.....	.....	.....	.....

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.

In addition to the industries presented separately in the above table, there were 42 other industries in the state which reported products in 1909 to the value of \$1,000,000 or over, distributed as follows: 35, with products valued at \$1,000,000 but less than \$5,000,000; 4, with products valued at \$5,000,000 but less than

\$10,000,000; 2, with products valued at \$10,000,000 but less than \$25,000,000; and 1, with products valued at \$25,000,000 and over. 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 present properly the true condition of the industry, for the reason that it is more or less interwoven with one or more other industries of similar character; and in 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.¹ The 1909 statistics, however, for 9 of these industries, namely, the manufacture of babbitt metal and solder; belting and hose, woven and rubber; dairymen's, poulterers', and apiarists' supplies; men's furnishing goods; haircloth; models and patterns, not including paper patterns; rubber goods, "not elsewhere specified;" sand and emery paper and cloth; and signs and advertising novelties are presented separately in Table II, page 754.

While a few industries predominate in the state, there are, as already noted, a very 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 245 of the 264 classifications used in compiling the 1909 statistics for manufactures in the United States were represented in Pennsylvania. The leading products of the state are from steel works and rolling mills, textile mills, foundries and machine shops, blast furnaces, and tanneries, which, with other important industries, call for special consideration.

Iron and steel.—Steel works and rolling mills, and blast furnaces ranked, respectively, first and third among the industries of the state. For convenience these two industries, together with the manufacture of tin plate and terneplate, may be considered as one group. The three allied industries gave employment in 1909 to an average of 143,778 wage earners, and turned out products valued at \$694,156,000, or 16.4 per cent and 26.4 per cent of the respective totals for all manufactures. These figures also represent an increase in number of wage earners over 1904 of 16,586, or 13 per cent, and in the value of products of \$203,585,000, or 41.5 per cent.

¹ These industries are:

Babbitt metal and solder.
Bags, other than paper.
Belting and hose, woven and rubber.
Boots and shoes, rubber.
Cars, street-railroad, not including operations of railroad companies.
Coffee and spice, roasting and grinding.
Dairymen's, poulterers', and apiarists' supplies.
Dyestuffs and extracts.
Food preparations.
Furnishing goods, men's.
Glass, cutting, staining, and ornamenting.
Glue.
Grease and tallow.
Haircloth.
House-furnishing goods, not elsewhere specified.
Instruments, professional and scientific.
Iron and steel, bolts, nuts, washers, and rivets, not made in steel works or rolling mills.
Iron and steel forgings.
Locomotives, not made by railroad companies.

Mineral and soda waters.
Models and patterns, not including paper patterns.
Oil, linseed.
Oil, not elsewhere specified.
Oilcloth and linoleum.
Roofing materials.
Rubber goods, not elsewhere specified.
Sand and emery paper and cloth.
Signs and advertising novelties.
Smelting and refining, lead.
Smelting and refining, zinc.
Sporting and athletic goods.
Springs, steel, car and carriage.
Stationery goods, not elsewhere specified.
Sugar, refining, not including beet sugar.
Surgical appliances and artificial limbs.
Upholstering materials.
Washing machines and clothes wringers.
Waste.
Window shades and fixtures.
Wire.
Wirework, including wire rope and cable.
Wood, turned and carved.

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. The blast furnaces include the establishments engaged in the manufacture of pig iron from the ore. The plating of sheet metal with tin or with terne (a mixture of lead and tin) is treated as a separate industry, notwithstanding the fact that nearly all of the establishments so engaged roll all or a portion of the plates dipped. 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, Pennsylvania not only led all other states in the Union in the combined industries but also in each of the three branches, contributing \$500,344,000, or 50.8 per cent, of the total value of products reported in 1909 for all steel works and rolling mills in the United States; \$168,578,000, or 43.1 per cent, of the total value of products for all blast furnaces; and \$25,234,000, or 52.6 per cent, of the total value of products for all tin-plate and terneplate mills. Each of the three industries shows substantial gains in the value of products from 1904 to 1909, the largest percentage of increase, 56.9 per cent, being shown for blast furnaces.

Textiles.—Several of the industries listed separately in the table belong to the textile group and may be considered together. They are the manufacture of woolen, worsted, and felt goods, and wool hats; silk and silk goods, including throwsters; hosiery and knit goods; cotton goods, including cotton small wares; carpets and rugs, other than rag; fur-felt hats; cordage and twine and jute and linen goods; and shoddy. The eight allied industries gave employment in 1909 to an average of 139,676 wage earners, and turned out products valued at \$267,841,000. These figures represent an increase over 1904 of 24,149, or 20.9 per cent, in number of wage earners and \$73,649,000, or 37.9 per cent, in value of products. It is noteworthy that although in the iron and steel group of industries, considered in the preceding paragraph, the value of the product is more than double that for the textile group, the former employs only 4,102 more wage earners than the latter group. Of the totals reported for all manufacturing industries in the state in 1909, the textile industries employed 15.9 per cent of the wage earners and contributed 10.2 per cent of the value of products. The corresponding proportions for 1904 were 15.1 per cent and 9.9 per cent, respectively. Pennsylvania is not only the second state in the Union in the production of all textiles combined, but is second in four of the important branches—woolen, worsted, and felt goods, and wool hats; silk

and silk goods, including throwsters; hosiery and knit goods; and carpets and rugs, other than rag. It ranks sixth in the production of cotton goods, including cotton small wares; fifth in that of cordage and twine and jute and linen goods; and first in that of fur-felt hats and of shoddy. With the exception of a slight decrease in carpets and rugs, in cordage and twine, and in shoddy, each of these eight textile industries show decided development during the five-year period 1904-1909, the percentages of increase in the value of products being especially high in the manufacture of fur-felt hats and of hosiery and knit goods.

Foundry and machine-shop products.—This classification covers in Pennsylvania products of great diversity, embracing not only the output of general foundries and machine shops, but also that of establishments engaged in the manufacture of bells, gas and water meters, hardware, plumbers' supplies, steam fittings and heating apparatus, structural ironwork, and cast-iron and cast-steel pipe. The foundry and machine-shop industry in its broadest sense is of greater importance than is indicated by the statistics reported under this specific title, for the reason that some machine shops manufacture special products, such as locomotives, electrical machinery, adding machines, cash registers, 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 air brakes and friction draft gear, interlocking and signaling appliances, frogs, switches, crossings, and other specialties for steam and street railroads, structural steel, enameled iron plumbing supplies, apparatus for handling coal and for rolling steel, and other power machinery. Foundries and machine shops gave employment to an average of 86,821 wage earners in 1909, which was 9.9 per cent of the total reported for all manufactures in the state. The total value of their products, \$210,746,000, in 1909, was \$57,353,000, or 37.4 per cent, more than that reported in 1904. In this class of products Pennsylvania led all other states of the Union at each of the last three censuses.

Leather, tanned, curried, and finished.—The statistics of leather include not only establishments which were engaged primarily in the manufacture of leather, but also those which treated hides or skins for others. Neither the cost of materials nor the value of products stated, however, include the value of the hides or skins treated under contract. In 1849 Pennsylvania was the second state of the Union in this industry with respect to value of products, reporting 1,134 establishments, which employed 4,146 wage earners and turned out products valued at \$7,575,000. The state ranked first in 1909, in which year, although the establishments engaged in the industry numbered only 163, there were 14,008 wage earners employed, while the

value of products was \$77,926,000, the wage earners being over three times as numerous, and the value of the product over ten times as great as in 1849.

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. The number of establishments decreased from 144 in 1899 to 132 in 1909, chiefly through the elimination of a number of roundhouses which were included in the prior census, but the value of the work performed increased from \$43,065,000 to \$76,035,000. Employment was given to 46,645 wage earners in 1909, which was the third largest number reported by any of the industries specified in the table. This number represents an increase over that reported in 1899 of 18,091, or 63.4 per cent.

Clothing.—The manufacture of men's clothing ranks eighteenth among the industries specified in the table and that of women's clothing twentieth. The two industries considered together had a combined output for 1909 valued at \$72,519,000. The increase in the value of products from 1904 to 1909 was \$25,719,000, or 55 per cent, and that from 1899 to 1904 was \$5,050,000, or 12.1 per cent. In 1849 Pennsylvania was the third state in the Union in the manufacture of clothing, with products valued at \$6,988,000. This figure included the value of the output for custom tailoring and repairing establishments. At the census of 1889, when the first attempt was made to segregate the statistics in order to show separately those for establishments manufacturing clothing under the factory system, Pennsylvania, with an output valued at \$34,020,000, was the third state in the combined industries, and has retained this position at each subsequent census. The proportions which this state contributed of the total value of products for the industries in the United States were small because New York, the first state, manufactured a product so large as to dwarf by comparison all others in the industry. The proportion which Pennsylvania furnished dropped from 9.6 per cent in 1889 to 7.6 per cent in 1909. The value of men's clothing has represented the major part of the total value shown for the combined industries at each census. This branch decreased in value of products from \$30,116,000 in 1889 to \$30,055,000 in 1899, but increased to \$39,682,000 in 1909. In the manufacture of women's clothing, the total value increased from \$3,904,000 in 1889 to \$11,695,000 in 1899 and \$32,837,000 in 1909.

Printing and publishing.—Under "Printing and publishing" are included job-printing establishments, the printing and publishing of books, of newspapers and periodicals, and of music, bookbinding, and blank-book making, steel engraving, and lithographing. Pennsylvania was the third state in the industry as a whole,

with combined products valued at \$70,584,000 in 1909, this amount representing 9.6 per cent of the total value of products for the industry in the United States. In value of products the industry shows an increase from 1904 to 1909 of \$15,521,000, or 28.2 per cent, compared with a gain from 1899 to 1904 of \$14,709,000, or 36.4 per cent.

Lumber and timber products.—This industry includes the logging plants whose chief products are logs and bolts; the sawmills, shingle mills, and planing mills, which produce rough and dressed lumber, shingles, lath, cooperage stock, sash, doors, blinds, interior finish, and other millwork; and also wooden packing-box factories. In 1909 this industry in the state was represented by 1,924 sawmills and logging plants, 668 independent planing mills, and 75 packing-box factories, which reported, respectively, 50.5, 41.1, and 8.4 per cent of the total value of products for the industry. The corresponding percentages of the total value of lumber and timber products in 1899 contributed by these three branches were 65, 31.1, and 3.9, respectively. Although the industry as a whole shows only a slight increase during the decade, there was a loss in the value of the output of sawmills and logging plants, which was more than offset, however, by the growth in that of the planing mills and box factories. With \$57,454,000 as the total value of products for all branches in 1909, Pennsylvania ranked sixth among the states of the Union in this industry; in 1904, with \$56,713,000, it held the same position; and in 1899, with \$53,886,000, it held the fourth place.

Petroleum, refining.—Although the production of crude oil in Pennsylvania decreased gradually from 1891 to 1909, in the refining of petroleum the state retained a high place among the states, being third in 1889, first in 1899 and 1904, and second in 1909. The value of products for the industry in the state was \$53,088,000, which represented 22.4 per cent of the total for the entire industry in 1909, compared with \$47,460,000, or 27.1 per cent, in 1904, and \$34,978,000, or 28.2 per cent, in 1899. This falling off in the proportion from 1904 to 1909 despite the increase in value was due to the remarkable increase during the five-year period in the production of crude oil in Oklahoma and California and the sudden development of the Illinois fields.

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 in the aggregate slaughter a large number of animals. The value of products for this industry in Pennsylvania increased from \$25,537,000 in 1899 to \$33,101,000 in 1904 and \$51,851,000 in 1909, a gain of \$26,314,000, or 103 per cent, for the decade. The

percentage of increase during the five-year period 1904-1909 in value of products was nearly twice as great as during the preceding five-year period, 1899-1904. Of the 180 establishments reported for the industry as a whole in 1909, 80 were engaged in both wholesale slaughtering and wholesale meat packing, 75 were engaged in wholesale slaughtering only, and 25 in the manufacture of sausage only, the value of the products of these three branches representing 75.8 per cent, 22.7 per cent, and 1.4 per cent, respectively, of the total for the combined industry. The industry as a whole is centered largely in Philadelphia, the value of the output of such establishments in that city representing 42.6 per cent of the total for the state in 1909, 39 per cent in 1904, and 47.4 per cent in 1899. For the last two censuses Pennsylvania has ranked seventh among the states in this industry, having risen from ninth place in 1899.

Coke.—The abundant supply of coal, which is easily accessible and suitable for coking, as well as the demand for coke for fuel in the manufacture of iron and steel, has made Pennsylvania the leading state of the Union in the coke industry, a position which it has held in this class of manufacture for a number of decades. The \$51,816,000 reported as the value of products in 1909 represents an increase of \$22,892,000 over 1904 and was 54.1 per cent of the total for the industry in all states combined. The absolute increase from 1899 to 1904 in the value of coke manufactured in the state was less than one-third as great as for the following five-year period.

Tobacco manufactures.—This industry includes establishments engaged in the manufacture of chewing and smoking tobacco and of snuff, and cigar and cigarette factories. The industry in the state is confined largely to the latter class of establishments, as they numbered 2,379 of the 2,432 reported for the entire industry in 1909, and had an output valued at \$46,124,000, or 92 per cent of the total. Pennsylvania ranked second among the states in 1909 in the value of tobacco manufactures, its product being valued at \$50,161,000, which represented nearly one-eighth of the total for the industry in the United States.

Liquors, malt.—The statistics for establishments in which such beverages as lager beer, porter, ale, and weiss beer are brewed are included under this head. Since 1849, when 102 establishments, with products valued at \$1,173,000, were reported, the brewery industry has developed rapidly. Pennsylvania ranked second in importance among the states in 1849 and has retained the same position at each succeeding census. In 1899 the value of products was \$29,163,000, and in 1909 it was \$47,713,000, an increase for the decade of \$18,550,000, or 63.6 per cent. The state's proportion of the total value of malt liquors brewed in the United States was in 1849, 20.5 per cent, but in 1909 it was only 12.7 per cent.

Flour-mill and gristmill products.—The statistics for merchant mills grinding wheat, rye, buckwheat, corn, or other grains are included in this classification. It does not, however, include the factories making fancy cereals or other food preparations as a chief product, or small mills doing custom grinding exclusively, the statistics for the latter mills being presented separately on page 737. This is one of the oldest industries in the state and as early as 1849 there were 2,512 flour mills and gristmills in Pennsylvania, which reported an output for that year valued at \$24,116,000. In 1899 the value of such products reached \$29,571,000, an increase for the 50 years of only \$5,455,000, or 22.6 per cent. In 1909, however, it was \$44,783,000, an increase for the decade 1899–1909 of \$15,212,000, or 51.4 per cent. Measured by value of products Pennsylvania ranked sixth among the states of the Union in this industry at each of the last two censuses, having dropped from fourth place in 1899.

Glass.—Pennsylvania ranks first among the states in the manufacture of glass and owes this position largely to the great supply of fuel, of glass sand, and of fire clay suitable for furnaces. As early as 1849 there were 28 establishments in the state, which reported glass products amounting to \$1,179,000, or nearly one-fourth of the total for all states, and in 1909, 112 plants were in operation with an output valued at \$32,818,000, which was over one-third of the total for the entire country.

Electrical machinery, apparatus, and supplies.—The exceptionally rapid extension, during recent years, of the uses of electricity in science and industry has created an increasing demand for electrical appliances of all sorts. It was to be expected, therefore, that this industry would show remarkable development during the last decade, especially in Pennsylvania, where all the materials required are immediately available, and where there is a demand for the most modern types of electrical appliances. Measured by value of products, Pennsylvania, with \$19,113,000 in 1899 and \$31,351,000 in 1909, held second place among the states of the Union at both censuses. The increase in the value of products for the decade was \$12,238,000, or 64 per cent.

Cars, steam-railroad, not including operations of railroad companies.—The products of these plants in Pennsylvania include mail, express, and baggage cars, and refrigerator cars, as well as passenger coaches and many kinds of freight cars. While the number of establishments increased from 11 in 1899 to only 13 in 1909, the average number of wage earners showed a gain from 5,840 to 7,766, or 33 per cent, and the value of products a gain from \$19,261,000 to \$27,510,000, or 42.8 per cent, during the decade. Practically all of this increase was during the later five-year period, 1904–1909. In 1909 the largest establishments were located at Berwick and at Butler and in Stowe township. In 1899 and 1904 Pennsylvania held second place in value of products for this industry in the

United States, but in 1909 it became first, having displaced Illinois. The proportion which this state contributed of the total value of products for the industry in the United States decreased from 21.3 per cent in 1899 to 17.5 per cent in 1904, but increased 22.2 per cent in 1909.

In addition to the statistics given for this industry, several thousand pressed-steel freight and industrial cars were manufactured in the state in 1909 as a secondary product of a steel works and rolling mill. The exact number and value of these cars, however, can not be given without disclosing the operations of this establishment.

Boots and shoes, including cut stock and findings.—Under this head are included factories making boots and shoes and those whose chief products are cut stock and findings, as well as shops especially engaged in stitching, crimping, fitting, and bottoming or performing special operations in connection with the manufacture of boots and shoes. Footwear not coming strictly under the head of boots and shoes, such as overgaiters, moccasins, and leggings, is also covered by this designation. The industry was carried on in the state as early as 1698, the workers being known as cordwainers.¹ In 1849 there were 2,136 establishments in the state, which gave employment to 10,785 wage earners and reported products valued at \$5,637,000. With products valued at \$13,830,000 in 1899, Pennsylvania held fifth place among the states in this respect, and sixth place in 1904 and 1909, with products valued at \$14,884,000 and \$20,219,000, respectively. The state's proportion of the total value of products for the industry in the United States was less at each of these censuses, being 4.8 per cent, 4.2 per cent, and 3.9 per cent, respectively. From 1904 to 1909 there was an increase of 1,832, or 20.4 per cent, in the average number of wage earners and of \$5,335,000, or 35.8 per cent, in the value of products, whereas from 1899 to 1904 there was a decrease in the average number of wage earners of 257, or 2.8 per cent, but an increase in value of products of \$1,054,000, or 7.6 per cent.

Paper and wood pulp.—Mills which manufacture paper exclusively, pulp exclusively, or both paper and pulp are included in this classification. The mills engaged in the production of paper largely predominated in Pennsylvania in 1909. The first paper mill in the United States was established in Germantown in 1693. In 1816 the first steam paper mill in the United States began operations in Pittsburgh, with an engine of 16 horsepower, and 40 employees. In 1849 there were 61 establishments reported for the state, which employed an average of 625 wage earners and manufactured products valued at \$1,037,000. The growth of the industry since that time has been rapid, and during the decade 1899–1909 it was particularly

¹ Eighth Census of the United States, 1860, Manufactures, Introduction, pp. lxx, lxx, and lxxii.

noteworthy, the value of products having increased from \$12,268,000 to \$19,873,000, a gain of \$7,605,000, or 62 per cent. The percentage of increase in value of products for the decade was about the same for both five-year periods. Pennsylvania ranked third in the industry in both 1879 and 1889, fourth in 1899, and fifth in both 1904 and 1909. The principal products in 1909 were book and cover paper, valued at \$6,442,043; wrapping paper, valued at \$3,954,578; and writing and other fine paper, valued at \$3,508,067. Practically all of the news paper used in the state is manufactured beyond its borders, the pulp produced being almost entirely chemical.

Furniture and refrigerators.—This industry embraces the manufacture of wood and metal furniture of all kinds, refrigerators and ice boxes, and store and office fixtures with the exception of products, such as show cases, which are provided for by a distinct classification. This industry ranked twenty-first among those shown separately in the preceding table in average number of wage earners, twenty-third in value added by manufacture, and twenty-eighth in value of products. The value of the output of the furniture and refrigerator factories in Pennsylvania increased from \$10,069,000 in 1899 to \$12,776,000 in 1904 and \$18,952,000 in 1909; these figures representing 7.7 per cent, 7.2 per cent, and 7.9 per cent of the respective totals for the United States.

There are 10 industries presented separately in the table on pages 698 and 699 which are not among the leading ones in the state as measured by value of products, in which Pennsylvania leads all other states of the Union. In five of these industries the state contributed 30 per cent or more of the total value of products for the United States in 1909, as follows: The manufacture of wrought-iron pipe, 59.2 per cent; steampacking, 41 per cent; saws, 32.9 per cent; cork cutting, 49.9 per cent; and crucibles, 39.4 per cent. The remainder of these industries are the manufacture of cement, ice, lime, cigar boxes, and files.

The rank of industries or groups of industries when measured by the value added by manufacture differs considerably from the rank by value of products, which is the order of presentation in the table. Of all the industries listed in this table, nine only hold the same position when ranked according to value added by manufacture. Noticeable changes in rank are found in the case of the tin-plate and terneplate industry, which drops from twenty-fourth place in gross value to the fifty-sixth place in value added by manufacture; in refining petroleum, which falls from tenth to thirty-ninth place; in the manufacture of butter, cheese, and condensed milk, which drops from thirty-sixth to sixty-second place; and in slaughtering and meat packing, which falls from eleventh to thirty-fourth place. On the other hand, the manufacture of pottery, terra-cotta, and fire-clay products advances from thirty-eighth to twenty-fourth place; the gas

industry, from thirty-third to twentieth; the distilled-liquor industry, from thirty-fourth to twenty-first; marble and stone work, from forty-third to thirty-first; and the malt-liquor industry, from fifteenth to fourth.

The table on pages 698 and 699 also shows the percentages of increase or decrease for these industries in respect to value of products and value added by manufacture in all cases where comparative figures are presented in Table I, page 738. Exceptionally large relative increases are shown for several of the industries during each of the five-year periods, while others show marked relative decreases. From 1904 to 1909 large increases in both items are shown by the manufacture of automobiles, the manufacture of typewriters and supplies, the distillation of liquors, the manufacture of millinery and lace goods, that of chocolate and cocoa products, the operations of street-railroad repair shops, and the manufacture of women's clothing. From 1899 to 1904 large gains in both items are shown by the manufacture of automobiles, for photo-engraving, the manufacture of steam packing and that of chocolate and cocoa products. Women's clothing is the only one of the industries just mentioned, however, which is among the first 27 industries shown in the table. For the more important industries the percentages in both items are generally larger for the five-year period 1904-1909 than for the preceding five-year period.

In value of products 10 of the 94 industries presented separately in the table showed a decrease from 1904 to 1909, and 13 a decrease from 1899 to 1904, while in value added by manufacture decreases were reported for 10 industries from 1904 to 1909 and 14 industries from 1899 to 1904. The largest percentage of decrease in the value of products from 1904 to 1909 was in the shipbuilding industry (40.2 per cent), but 9 other industries showed a decrease of less than 10 per cent in the value of products during the same period.

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.	Mals.	Female.
All classes.....	1,002,171	802,548	199,623
Proprietors and officials.....	54,696	52,951	1,745
Proprietors and firm members.....	29,743	28,550	1,193
Salaries officers of corporations.....	8,410	8,286	124
Superintendents and managers.....	16,543	16,115	428
Clerks.....	60,932	55,703	14,229
Wage earners (average number).....	877,543	693,594	183,949
16 years of age and over.....	848,436	679,331	168,605
Under 16 years of age.....	29,107	14,063	15,044

The average number of persons engaged in manufactures during 1909 was 1,002,171, of whom 877,543 were wage earners. Of the remainder, 54,696 were proprietors and officials and 69,932 were clerks. Corresponding figures for individual industries will be found in Table II, page 754.

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 43 important industries individually.

INDUSTRY.	PERSONS ENGAGED IN MANUFACTURES.			
	Total number.	Per cent of total.		
		Proprietors and officials.	Clerks.	Wage earners (average number).
All industries.....	1,002,171	5.5	7.0	87.6
Boots and shoes, including out stock and findings.....	11,829	3.4	5.1	91.5
Bread and other bakery products.....	17,838	20.2	11.3	68.5
Butter, cheese, and condensed milk.....	2,093	37.9	5.9	55.2
Carpets and rugs, other than rag.....	12,078	2.1	2.6	95.3
Carriages and wagons and materials.....	8,757	11.1	3.3	85.6
Cars and general shop construction and repairs by steam-railroad companies.....	50,545	3.8	3.9	92.3
Cars, steam-railroad, not including operations of railroad companies.....	8,799	2.7	9.0	88.3
Cement.....	8,902	1.2	8.1	90.8
Chemicals.....	8,573	2.9	8.0	89.1
Clothing, men's, including shirts.....	20,405	5.4	5.2	89.5
Clothing, women's.....	18,080	5.1	8.1	86.8
Coke.....	16,219	2.8	2.7	94.5
Confectionery.....	6,436	6.4	9.6	84.0
Copper, tin, and sheet-iron products.....	7,892	7.3	6.9	85.3
Cotton goods, including cotton small wares.....	17,386	2.9	3.4	93.7
Dyeing and finishing textiles.....	6,688	4.6	4.4	91.0
Electrical machinery, apparatus, and supplies.....	14,641	3.8	20.9	75.3
Flour-mill and gristmill products.....	4,696	43.2	5.0	51.8
Foundry and machine-shop products.....	100,505	4.5	9.1	86.4
Furniture and refrigerators.....	11,838	6.5	5.9	87.5
Gas, illuminating and heating.....	11,684	4.8	27.1	68.0
Glass.....	24,024	1.8	3.0	95.1
Hats, fur-felt.....	7,537	1.5	2.7	95.8
Hosiery and knit goods.....	40,248	2.9	2.2	94.9
Iron and steel, blast furnaces.....	16,215	2.4	8.0	89.6
Iron and steel, steel works and rolling mills.....	137,433	1.5	6.2	92.3
Iron and steel pipe, wrought.....	4,143	2.2	4.3	93.5
Leather, tanned, curried, and finished.....	14,970	3.3	3.1	93.6
Liquors, distilled.....	1,144	22.0	14.7	63.3
Liquors, malt.....	9,007	7.1	12.6	80.3
Lumber and timber products.....	32,073	13.3	3.0	83.8
Marble and stone work.....	10,639	10.2	2.8	87.1
Paint and varnish.....	2,747	10.2	17.3	72.5
Paper and wood pulp.....	7,196	2.8	4.7	92.5
Patent medicines and compounds and druggists' preparations.....	4,299	12.6	23.1	64.2
Petroleum, refining.....	3,423	4.6	10.6	84.7
Pottery, terra-cotta, and fire-clay products.....	9,784	4.1	3.0	92.0
Printing and publishing.....	36,783	11.8	21.1	67.1
Silk and silk goods, including throwsters.....	38,178	1.7	2.8	95.5
Slaughtering and meat packing.....	3,957	8.6	14.4	77.1
Tin plate and tereplate.....	2,548	1.8	6.1	92.1
Tobacco manufactures.....	37,580	8.4	3.3	88.3
Woolen, worsted, and felt goods, and wool hats.....	28,692	2.3	2.1	95.5
All other industries.....	169,267	7.0	8.5	84.5

Of the total number of persons engaged in all manufacturing industries, 5.5 per cent were proprietors and officials, 7 per cent clerks, and 87.6 per cent wage earners. In some industries, such as flour mills and gristmills; butter, cheese, and condensed-milk factories; and bakeries, a majority of the establishments are small and the work is done to a large extent by the proprietors or their immediate representatives. Hence proprietors and officials form in such industries a much larger proportion of the total number of persons engaged in the industry than in most other industries or in all industries combined. Similar con-

ditions are also found in the following industries: The manufacture of carriages and wagons, distilled liquors, and lumber and timber products; marble and stone work; the manufacture of paint and varnish and of patent medicines; and printing and publishing. Certain industries require the employment of large numbers of wage earners and show, as a consequence, a small proportion of proprietors and officials. Among these are the textile, cement, glass, coke, and iron and steel industries.

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 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.....	877,543	77.5	19.2	3.3
Boots and shoes, including out stock and findings.....	10,822	58.5	34.4	7.1
Bread and other bakery products.....	12,221	81.6	14.6	3.8
Butter, cheese, and condensed milk.....	1,177	93.5	5.8	0.7
Carpets and rugs, other than rag.....	11,510	59.9	35.0	5.1
Carriages and wagons and materials.....	7,498	98.4	0.4	1.1
Cars and general shop construction and repairs by steam-railroad companies.....	46,645	99.8	0.2	0.1
Cars, steam-railroad, not including operations of railroad companies.....	7,766	99.9	0.1	0.1
Cement.....	8,080	99.6	(²)	0.4
Chemicals.....	3,185	96.6	3.4	0.1
Clothing, men's, including shirts.....	23,623	33.1	62.5	4.4
Clothing, women's.....	15,701	30.1	68.2	1.7
Coke.....	15,331	100.0	(²)	(²)
Confectionery.....	5,408	34.3	57.9	7.8
Copper, tin, and sheet-iron products.....	6,815	89.7	7.1	3.1
Cotton goods, including cotton small wares.....	16,293	43.9	49.3	6.8
Dyeing and finishing textiles.....	6,086	84.1	12.1	3.8
Electrical machinery, apparatus, and supplies.....	11,025	84.9	14.5	0.6
Flour-mill and gristmill products.....	2,432	99.5	0.1	0.4
Foundry and machine-shop products.....	86,621	97.9	1.1	1.0
Furniture and refrigerators.....	9,924	96.0	2.1	1.9
Gas, illuminating and heating.....	3,119	99.6	0.4	6.5
Glass.....	23,710	88.2	5.3	5.2
Hats, fur-felt.....	7,220	66.5	25.3	11.2
Hosiery and knit goods.....	38,206	19.3	69.5	0.1
Iron and steel, blast furnaces.....	14,521	99.0	.....	0.1
Iron and steel, steel works and rolling mills.....	126,911	98.9	0.2	0.8
Iron and steel pipe, wrought.....	3,873	99.8	.....	0.2
Leather, tanned, curried, and finished.....	14,008	94.0	4.6	1.4
Liquors, distilled.....	724	76.8	23.2	.....
Liquors, malt.....	7,234	99.7	0.2	0.1
Lumber and timber products.....	26,873	98.5	0.4	1.1
Marble and stone work.....	9,264	99.2	0.1	0.7
Paint and varnish.....	1,992	90.3	3.1	0.6
Paper and wood pulp.....	6,656	88.6	10.0	0.5
Patent medicines and compounds and druggists' preparations.....	2,761	43.9	53.7	2.3
Petroleum, refining.....	2,909	99.0	0.4	0.6
Pottery, terra-cotta, and fire-clay products.....	9,003	91.2	5.8	3.0
Printing and publishing.....	24,698	78.7	22.8	3.6
Silk and silk goods, including throwsters.....	36,469	26.2	60.0	13.8
Slaughtering and meat packing.....	3,050	99.1	0.7	0.2
Tin plate and tereplate.....	2,346	89.0	10.1	0.9
Tobacco manufactures.....	33,188	45.0	52.4	2.6
Woolen, worsted, and felt goods, and wool hats.....	27,409	44.3	46.2	9.5
All other industries.....	143,047	77.8	18.6	8.0

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, 77.5 per cent of the average number of wage earners were males 16 years of age and over; 19.2 per cent, females 16 years of age and over; and 3.3 per cent, children under the age of 16. The larger part of the total number of female wage earners was made up of those employed in the textile, clothing, and boot and shoe industries and in tobacco manufactures. In the manufacture of hosiery and knit goods and of women's clothing over two-thirds of the employees were women 16 years of age and over; in the silk goods and men's clothing industries the proportion was three-fifths; in tobacco manufactures and in the cotton goods and woolen and worsted goods industries, about one-half; and in the boot and shoe and the carpet industries, over one-third. The confectionery and the patent-medicine industries also showed a large proportion of female wage earners, 57.9 per cent and 53.7 per cent, respectively.

The four leading textile industries—silk goods, hosiery and knit goods, woolen and worsted goods, and cotton goods—and the manufacture of glass and of men's clothing include the larger part of the total number of wage earners under 16 years of age. The proportion of such wage earners engaged in each industry was as follows: Silk goods, 13.8 per cent; hosiery and knit goods, 11.2 per cent; woolen and worsted goods, 9.5 per cent; cotton goods, 6.8 per cent; glass, 6.5 per cent; and men's clothing, 4.4 per cent. The boot and shoe and the confectionery industries also showed a large proportion of children among the wage earners, 7.1 per cent and 7.8 per cent, respectively.

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	1,002,171	100.0	855,392	100.0	17.2
Proprietors and firm members.....	29,743	3.0	26,029	3.0	14.3
Salaried employees.....	94,885	9.5	66,081	7.7	43.6
Wage earners (average number)...	877,543	87.6	763,282	89.2	15.0

Comparable figures are not obtainable for 1899. The table shows a greater percentage of gain for the five years in the number of salaried employees than for either of the other classes of persons engaged.

The next table shows the average number of wage earners, distributed according to age periods, and for 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	877,543	100.0	763,282	100.0	663,960	100.0
16 years of age and over...	848,436	96.7	728,831	95.5	631,058	95.1
Male.....	679,831	77.5	594,487	77.9	516,101	77.7
Female.....	168,605	19.2	134,344	17.6	115,557	17.4
Under 16 years of age.....	29,107	3.3	34,451	4.5	32,302	4.9

This table indicates that for all industries combined there has been little variation from census to census in the proportions of men, women, and children employed. The number of children under 16 years of age and the proportion which they formed of the total number of wage earners employed was less in 1909 than in 1899, although from 1899 to 1904 the absolute number of such employees increased. The falling off in the proportion of children was more than made up by a larger proportion of women. In 1909 males 16 years of age and over formed 77.5 per cent of all wage earners, as compared with 77.9 per cent in 1904 and 77.7 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. 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 754, is shown, for practically all of the important industries of 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.		MONTH.	WAGE EARNERS.	
	Number.	Per cent of maximum.		Number.	Per cent of maximum.
January.....	819,927	85.3	July.....	860,435	89.6
February.....	825,082	85.9	August.....	874,308	90.9
March.....	835,617	87.0	September.....	911,802	94.9
April.....	844,230	87.9	October.....	933,852	97.2
May.....	850,373	88.5	November.....	947,698	98.6
June.....	867,526	90.3	December.....	950,666	100.0

There were no seasonal industries of importance in Pennsylvania, nor did any of the more important industries show very great fluctuations from month to month in the number of wage earners employed. Of the more important industries, the greatest variation is in the glass industry, in which the minimum number, 16,242, was employed in July, and the maximum number, 26,711, in December, the minimum figure being 60.8 per cent of the maximum. In the foundry and machine-shop industry the difference between the maximum and minimum months was a larger number, but on account of the larger average number em-

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ployed the proportion of minimum to maximum was 78.8 per cent. For all industries combined the smallest number, 819,927, were employed in the month of January. The number increased steadily month by month, with the exception of a slight decrease from June to July, until in December 960,666 wage earners were employed, the largest number reported for any month. The difference between the months of greatest and least employment was thus 140,739, or 14.6 per cent of the maximum.

Prevailing hours of labor.—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 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.....	877,543	61,599	46,263	109,826	301,893	258,257	45,703	27,203	26,799
Agricultural implements.....	2,401	1	452	850	1,097	1			
Artificial flowers and feathers and plumes.....	805	135	501	160	9				
Automobiles, including bodies and parts.....	3,169	1	740	2,267	195				
Belting and hose, leather.....	156	2	10	110	28				
Boots and shoes, including cut stock and findings.....	10,822	21	462	514	8,568	1,140	117		
Boxes, cigar.....	1,801	25	239	114	1,074	349			
Boxes, fancy and paper.....	4,604	56	456	286	2,052	854			
Brass and bronze products.....	2,080	36	44	493	1,396	111			
Bread and other bakery products.....	12,221	577	207	813	2,812	5,423	1,188	553	648
Brick and tile.....	8,058	562	383	791	1,206	5,084		32	
Brooms and brushes.....	860	47	80	124	502	107			
Butter, cheese, and condensed milk.....	1,177	131	49	75	156	337	411	13	5
Buttons.....	1,123	4	110	915	94				
Canning and preserving.....	2,753	9	7	23	832	1,806	73	3	
Carpets and rugs, other than rag.....	11,510	129		615	3,267	7,499			
Carriages and wagons and materials.....	7,498	44	165	826	3,686	2,752	19	1	5
Cars and general shop construction and repairs by steam-railroad companies.....	46,645	5,209	2,581	1,200	27,629	8,002	1,511		423
Cars and general shop construction and repairs by street-railroad companies.....	2,442		42	553	1,576	209	32		30
Cars, steam-railroad, not including operations of railroad companies.....	7,766		60	286	5,504	500	1,416		
Cement.....	8,080					2,276	2,788		3,016
Chemicals.....	3,185	5	98		68	2,130	177	13	694
Chocolate and cocoa products.....	863	1			748	114			
Clocks and watches, including cases and materials.....	1,395		36	3	1,356				
Clothing, men's, including shirts.....	23,633	570	2,204	6,823	11,508	2,440	67	4	7
Clothing, women's.....	15,701	639	6,631	3,439	4,491	451			
Coffins, burial cases, and undertakers' goods.....	1,103	22	14	108	353	606			
Coke.....	15,331	1,508		7,397	100	4,575	653		1,093
Confectionery.....	5,408	122	362	290	2,692	1,919	16	5	2
Cooperage and wooden goods, not elsewhere specified.....	1,630	245	132	432	352	469			
Copper, tin, and sheet-iron products.....	6,815	1,327	345	1,034	2,752	1,357			
Cordage and twine and jute and linen goods.....	2,119	49	111		1,110	849			
Cork, cutting.....	1,727		11	21	1,496	8	191		
Cotton goods, including cotton small wares.....	16,293		1,112		8,294	6,887			
Crucibles.....	106		10		10	86			
Cutlery and tools, not elsewhere specified.....	4,260	1,156	245	205	1,369	1,205	70		
Dentists' materials.....	1,072	17	130	50	875				
Dyeing and finishing textiles.....	6,086	10	39	33	2,078	3,874	52		
Electrical machinery, apparatus, and supplies.....	11,025	12	705	7,853	1,772	633			
Explosives.....	1,033	39		72	865				
Fancy articles, not elsewhere specified.....	828	32	83	60	544	109			
Fertilizers.....	1,224	6	8		197	425	169	419	
Files.....	1,217		1		1,216				
Flour-mill and gristmill products.....	2,432	273	49	147	211	1,088	377	263	24
Foundry and machine-shop products.....	86,821	2,636	1,442	22,360	31,874	26,079	2,157	87	186
Fur goods.....	227	12	82	111	9	13			
Furniture and refrigerators.....	9,924	175	560	563	3,742	4,884			
Gas and electric fixtures and lamps and reflectors.....	1,482	43	98	151	1,125	65			
Gas, illuminating and heating.....	3,119	16	3		24	1,780	705	15	576
Glass.....	23,710	3,049	4,406	1,645	6,235	5,463	1,257		1,050
Hats and caps, other than felt, straw, and wool.....	744	17	78	47	462	137	3		
Hats, fur-felt.....	7,220	65	370	4,919	1,533	333			
Hosiery and knit goods.....	38,206	275	331	496	24,508	12,472	74		
Ice, manufactured.....	1,606	38		69	19	229	138	271	842
Ink, printing.....	165	11		6	148				
Iron and steel, blast furnaces.....	14,521				117	601	166	467	13,170
Iron and steel, steel works and rolling mills.....	126,911	12,245	3,237	11,014	12,292	45,527	17,921	21,849	2,826
Iron and steel pipe, wrought.....	3,873	6			3,777	90			
Jewelry.....	456	20	110	170	89	67			
Leather goods.....	2,524	22	199	392	1,123	780	8		
Leather, tanned, curried, and finished.....	14,008	65	139	708	5,187	7,904		5	
Lime.....	3,258	5	75	135	515	2,010	425		93
Liquors, distilled.....	724	88	43	141	52	366		10	4
Liquors, malt.....	7,234	2,645	306	2,513	336	1,118	203	109	4
Lumber and timber products.....	26,873	790	995	4,105	3,984	12,975	3,622	41	161
Marble and stone work.....	9,264	1,896	2,032	1,870	2,188	1,262	26		
Mattresses and spring beds.....	745	52	63	70	442	118			
Millinery and lace goods.....	4,235	209	747	1,190	2,057	32			
Musical instruments, pianos and organs and materials.....	1,182		32	395	492	203			
Optical goods.....	579	28	43	30	475	3			

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.
Paint and varnish.....	1,992	49	90	326	1,127	345	38	17	
Paper and wood pulp.....	6,656	122		100	168	3,643	91	2,532	
Paper goods, not elsewhere specified.....	1,357	28	749	48	514	18			
Patent medicines and compounds and druggists' preparations.....	2,761	288	460	1,603	291	110		6	3
Petroleum, refining.....	2,900			1,596		418	270	68	548
Photo-engraving.....	489	479		9	1				
Pottery, terra-cotta, and fire-clay products.....	9,003	579	404	1,739	1,464	4,389	66	156	206
Printing and publishing.....	24,696	14,412	3,297	4,267	1,965	730	25		
Safes and vaults.....	695	30	26	69	185	385			
Saws.....	1,876	7	41	95	1,728	5			
Shipbuilding, including boat building.....	3,558	378	156	143	2,842	39			
Shoddy.....	450			3	88	359			
Silk and silk goods, including throwsters.....	36,469	31	490	490	27,859	7,590			
Slaughtering and meat packing.....	3,050	63	125	44	271	2,331	160	56	
Smelting and refining, not from the ore.....	206	22	7	7	100	54		16	
Soap.....	1,197	529	16	19	396	235	11		
Steam packing.....	1,677	8	18	52	936	663			
Stoves and furnaces, including gas and oil stoves.....	4,198	187	226	773	1,363	1,709			
Tin plate and ternplate.....	2,346	206		1,539	400	201			
Tobacco manufactures.....	33,188	3,954	3,497	2,614	18,295	4,721	102	5	
Typewriters and supplies.....	555	5	18		532				
Umbrellas and canes.....	2,315	122	6	54	307	1,326			
Wall paper.....	1,056					1,056			
Wood distillation, not including turpentine and rosin.....	933	51		39		444	237	83	79
Woolen, worsted, and felt goods, and wool hats.....	27,409	2		77	14,819	12,611			
All other industries.....	50,433	2,578	3,634	5,292	18,832	17,323	8,199	71	504

It is evident from these figures that for the great majority of wage earners employed in the manufacturing industries of Pennsylvania the prevailing hours of labor ranged from 54 to 60 a week, only 12.3 per cent of the total being employed in establishments where less than 54 hours per week were the prevailing hours, and only 11.4 per cent being employed in establishments where the hours of labor were more than 60 per week. The largest single group shown in the table is that "between 54 and 60" with 301,893, or 34.4 per cent of the total number of wage earners of the state.

Of the 99,705 wage earners who worked in establishments where over 60 hours per week were the prevailing hours of labor, 56,399, or 56.6 per cent, were employed in the blast furnaces and steel works and rolling mills. This number represents 39.9 per cent

of the total average number employed in these two industries combined. In three industries shown in the table—cement, ice, and blast furnaces—the greater proportion of wage earners worked more than 60 hours per week. While there were 108,120 wage earners in establishments where less than 54 hours per week were the prevailing hours, in only four industries presented in the table—the manufacture of artificial flowers and feathers and plumes, that of paper goods, photo-engraving, and printing and publishing—was the greater proportion of the total for the industry employed by such establishments.

Location of establishments.—The following table shows the extent to which the manufactures of Pennsylvania are centralized in cities and boroughs of 10,000 population or over. (See Introduction.)

ITEM.	Year.	Aggregate.	INCORPORATED PLACES HAVING A POPULATION OF 10,000 AND OVER.								DISTRICTS OUTSIDE OF INCORPORATED PLACES 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	7,665,111	3,653,461	47.7	638,300	8.3	802,381	10.5	2,212,780	28.9	4,011,650	52.3
	1900	6,302,115	2,767,261	43.9	380,403	5.6	569,623	9.0	1,847,235	29.3	3,534,864	56.1
Number of establishments.....	1909	27,563	15,036	54.6	1,738	6.3	2,967	10.8	10,331	37.5	12,527	45.4
	1899	23,462	12,388	52.8	990	4.2	2,347	10.0	9,051	38.6	11,074	47.2
Average number of wage earners.	1909	277,643	582,134	62.9	83,433	9.5	136,492	15.6	332,209	37.9	325,400	37.1
	1899	663,960	431,181	64.9	36,845	5.5	96,628	14.6	297,708	44.8	232,779	35.1
Value of products.....	1909	\$2,626,742,034	\$1,662,897,973	63.3	\$276,462,645	10.5	\$370,521,221	14.1	\$1,015,914,107	38.7	\$963,844,061	36.7
	1899	1,649,882,380	1,074,530,373	65.1	81,717,638	5.0	229,891,021	13.9	762,921,714	46.2	575,352,007	34.9
Value added by manufacture..	1909	1,044,182,046	666,386,130	63.8	95,711,824	9.2	146,681,104	14.0	423,993,202	40.6	377,795,916	36.2
	1899	691,681,108	451,733,907	65.3	32,318,824	4.7	97,346,042	14.1	322,069,041	46.6	239,847,201	34.7

In 1909, 63.3 per cent of the total value of products for all manufacturing industries was reported from cities and boroughs having over 10,000 inhabitants, and 62.9 per cent of the average number of wage earners were employed in such places. The figures indicate

that on the whole the manufactures of the districts outside the cities and boroughs have gained slightly on the totals for the places having 10,000 inhabitants or over during the last decade. This is due in part to the size and rapid growth of the three classes of iron

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and steel mills, the foundries and machine shops, and the glass works located outside the cities. The fact that 21 boroughs (see the next table) were parts of the outside territory in 1899 and became a part of the group of cities and boroughs having 10,000 inhabitants or more in 1909 makes the gain in the outside districts more conspicuous. The value of products reported in 1909 for all these places combined was \$140,470,215, and 35,885 wage earners were employed there. These figures represent 5.3 per cent and 4.1 per cent of the respective totals for the state. The increase in the population of different places has also affected the grouping of cities and boroughs in the table. In 1900 Norristown, Shenandoah, and Hazleton were in the first group, 10,000 to 25,000; but during the following decade the population of each increased so that all advanced to the second group, 25,000 to 100,000.

Although a decided absolute gain is shown for all items of the three groups of cities and boroughs, the cities included in the group 100,000 and over show substantial decreases in relative importance. The largest gains in the proportions are shown for the first group, due mainly to the shifting of the 21 boroughs above referred to. There was scarcely any change during the decade in the proportions of the totals for the cities and boroughs of 25,000 to 100,000 inhabitants. Of the total value of products reported for the state in 1909, 10.5 per cent was reported from the 43 places having from 10,000 to 25,000 inhabitants, 14.1 per cent from the 17 places having from 25,000 to 100,000 inhabitants, and 38.7 per cent from the 3 cities having 100,000 inhabitants and over.

The population for 1910 and 1900 of the 63 places which had 10,000 inhabitants or over in 1910 is given in the following statement:

CITY OR BOROUGH.	1910	1900	CITY OR BOROUGH.	1910	1900
Philadelphia.....	1,549,008	1,293,697	Mount Carmel.....	17,532	13,179
Pittsburgh.....	533,905	451,512	Carbondale.....	17,040	13,536
Scranton.....	129,887	102,026	Plymouth.....	16,906	13,649
Reading.....	96,071	78,061	Pitston.....	16,267	12,556
Wilkes-Barre.....	67,105	51,721	Mahanoy City.....	15,936	13,504
Erie.....	66,525	52,733	Duquesne.....	15,727	9,036
Harrisburg.....	64,186	50,167	Oil City.....	15,657	13,264
Johnstown.....	55,482	35,936	Pottstown.....	15,599	13,696
Altoona.....	52,127	38,973	Sharon.....	15,270	8,910
Allentown.....	51,913	35,416	McKees Rocks.....	14,702	6,352
Lancaster.....	47,227	41,459	Bradford.....	14,544	15,029
York.....	44,750	33,708	Steelton.....	14,246	12,036
McKeesport.....	42,694	34,227	Sunbury.....	13,770	9,810
Chester.....	38,537	33,938	Uniontown.....	13,344	7,344
New Castle.....	36,280	28,339	Greensburg.....	13,012	6,508
Williamsport.....	31,860	25,787	Connellsville.....	12,845	7,160
Easton.....	28,523	25,238	Bethlehem.....	12,837	10,788
Norristown.....	27,875	22,265	Meadville.....	12,780	10,291
Shenandoah.....	25,774	20,321	Dubois.....	12,623	9,375
Hazleton.....	25,452	14,230	Beaver Falls.....	12,191	10,054
Butler.....	20,728	10,853	North Braddock.....	11,824	6,535
Pottsville.....	20,236	15,710	Chambersburg.....	11,800	8,804
South Bethlehem.....	19,973	13,241	Monessen.....	11,775	2,197
Shamokin.....	19,588	18,202	West Chester.....	11,767	9,524
Braddock.....	19,357	15,654	Columbia.....	11,454	12,316
Lebanon.....	19,240	17,628	Old Forge.....	11,324	5,630
Wilkesburg.....	18,924	11,836	Coatesville.....	11,084	5,721
Nanticoke.....	18,877	12,116	Warron.....	11,030	8,043
Washington.....	18,778	7,670	Phoenixville.....	10,743	9,196
Homestead.....	18,713	12,504	Carlisle.....	10,303	9,626
Dunmore.....	17,615	12,583	South Sharon.....	10,190	(^a)
			Carnegie.....	10,009	7,330

The relative importance in manufactures of 56 of these cities and boroughs is shown in the following table, in which they are presented according to value of products in 1909. Both the value of products and the average number of wage earners for these places are shown separately for 1909, 1904, and 1899 so far as comparative figures can be given. The other 7 boroughs having a population of 10,000 or over in 1910—Coatesville, Duquesne, Monessen, North Braddock, Old Forge, South Sharon, and Steelton—are not shown separately but grouped under the heading of "All other boroughs," to avoid the disclosure of individual establishments.

CITY OR BOROUGH.	AVERAGE NUMBER OF WAGE EARNERS.			VALUE OF PRODUCTS.		
	1909	1904	1899	1909	1904	1899
Philadelphia.....	251,834	228,899	214,775	\$746,075,050	\$591,388,078	\$519,981,812
Pittsburgh.....	67,474	71,618	71,794	243,453,693	211,259,153	218,198,065
Reading.....	24,145	18,053	16,892	51,134,907	30,490,942	32,682,061
Johnstown.....	10,574	6,914	5,600	48,105,775	28,891,896	21,864,745
McKeesport.....	8,246	8,848	7,213	42,494,567	23,054,412	36,058,447
New Castle.....	5,339	5,433	4,529	38,037,522	28,923,234	20,016,798
South Bethlehem.....	7,985	5,754	4,645	26,417,103	15,275,411	9,964,054
Scranton.....	12,851	10,912	11,139	26,384,755	20,453,285	24,741,837
Allentown.....	11,481	8,984	7,355	26,263,327	16,841,043	14,990,437
Erie.....	9,796	8,415	8,032	24,225,633	18,639,161	16,492,886
Harrisburg.....	9,743	7,955	6,439	22,725,328	16,570,715	14,995,827
Chester.....	6,986	7,061	6,972	19,373,314	16,644,842	14,040,165
York.....	10,492	7,952	6,851	18,622,400	13,333,359	10,559,780
Altoona.....	8,409	9,540	6,573	16,762,738	14,349,963	11,273,287
Lancaster.....	7,957	8,693	7,594	15,978,666	14,647,681	12,750,429
Wilkes-Barre.....	7,553	5,920	4,749	13,525,957	10,990,754	8,610,765
Williamsport.....	5,641	5,296	4,717	13,347,943	11,366,599	9,725,726
Pottstown.....	3,650	3,457	2,681	12,505,196	8,144,723	7,357,503
Lebanon.....	5,591	4,387	4,475	11,429,063	6,978,458	7,058,296
Butler.....	2,823	2,093	792	11,058,353	6,832,007	1,403,626
Sharon.....	3,316	1,812	1,827	9,880,672	5,670,924	3,764,983
McKees Rocks.....	3,591	(^b)	(^b)	9,786,828	(^b)	(^b)
Pottsville.....	2,872	1,904	1,699	9,138,122	5,805,788	4,829,806
Norristown.....	3,818	3,517	2,944	7,413,211	5,925,243	4,106,834
Easton.....	3,393	2,720	3,202	6,915,345	5,059,064	5,424,668
Beaver Falls.....	2,180	2,232	2,174	6,400,338	4,907,536	6,228,808
Phoenixville.....	2,599	2,388	2,249	5,876,154	5,499,891	3,321,690
Warren.....	1,489	1,174	1,050	5,744,321	4,665,594	3,681,254
Braddock.....	1,040	1,225	815	5,094,382	4,125,479	4,090,748
Washington.....	2,126	(^b)	(^b)	4,837,055	(^b)	(^b)
Columbia.....	2,773	3,034	2,519	4,807,068	3,887,087	4,213,887
Hazleton.....	2,682	1,406	622	4,707,025	2,185,876	698,823
Sunbury.....	2,069	1,457	968	4,450,159	2,592,820	1,808,157
Oil City.....	1,338	1,557	1,633	4,121,892	3,082,208	5,164,059
Bradford.....	1,318	1,490	1,200	3,896,838	3,181,594	3,125,007
Bethlehem.....	1,533	(^b)	(^b)	3,711,602	(^b)	(^b)
Meadville.....	2,048	1,360	1,201	3,558,925	2,074,600	1,667,954
Shamokin.....	1,623	897	702	3,544,095	1,443,915	1,147,450
Carnegie.....	422	(^b)	(^b)	3,099,445	(^b)	(^b)
Carbondale.....	1,503	1,475	1,023	2,823,387	2,315,695	1,146,181
Carlisle.....	1,334	1,340	1,121	2,495,710	1,935,743	1,708,000
Chambersburg.....	1,364	843	612	2,456,035	1,085,185	814,856
West Chester.....	816	849	497	2,146,843	2,121,185	856,224
Connellsville.....	1,035	(^b)	(^b)	1,970,936	(^b)	(^b)
Pitston.....	792	830	357	1,969,452	1,474,928	967,730
Dunmore.....	1,015	900	817	1,890,168	1,709,360	1,767,699
Uniontown.....	1,308	1,133	614	1,850,654	1,400,445	1,132,322
Plymouth.....	335	(^b)	(^b)	1,346,885	(^b)	(^b)
Shenandoah.....	908	827	756	1,178,698	856,542	532,835
Shenandoah.....	242	170	107	887,693	594,637	361,646
Mahanoy City.....	590	238	301	867,576	431,526	401,103
Mount Carmel.....	600	197	109	785,391	620,396	393,373
Greensburg.....	310	(^b)	(^b)	726,268	(^b)	(^b)
Homestead.....	171	307	164	659,196	712,830	265,654
Wilkesburg.....	185	184	100	538,217	471,960	246,148
Nanticoke.....	348	229	140	423,093	358,091	309,990
All other boroughs.....	18,283			103,287,937		

¹ Includes statistics for Allegheny, annexed in 1907.
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.
⁴ "All other boroughs," for which figures can not be shown without disclosing individual operations, embrace Coatesville, Duquesne, Monessen, North Braddock, Old Forge, South Sharon, and Steelton in 1909.

From 1904 to 1909 the value of products shows an increase for each place for which comparative figures are given except Homestead, and from 1899 to 1904 for all but Pittsburgh, Reading, McKeesport, Scranton, Lebanon, Easton, Beaver Falls, Columbia, Oil City, and Dubois. The rate of increase, however, was

¹ Includes population of Allegheny, which was annexed in 1907.
² Includes population of West Bethlehem, which was annexed in 1904.
³ Not incorporated in 1900.

generally greater from 1904 to 1909. The highest rate from 1904 to 1909, 145.4 per cent, was in Shamokin, due in a large measure to the increase in the production of silk goods and hosiery and knit goods, and the next highest, 126.3, in Chambersburg, on account of a general increase in the important manufacturing industries.

In the discussion of the larger cities—those having over 50,000 inhabitants—some important industries will be mentioned, for which the statistics are not shown separately in Table I, page 738. They are included in the group of "All other industries" for that city, for reasons similar to those which required a like treatment of certain industries in the state figures on pages 698 and 699.

Philadelphia, the largest and most important city in the state, occupies a prominent position among the cities of the country as regards the variety and magnitude of its manufacturing operations. At the census of 1809, it was the only city reported separately and then showed a value of manufactured products of nearly \$10,000,000. At the census of 1879 it ranked second, being surpassed by New York only, and held this rank until 1899, when it dropped to third place, being displaced by Chicago. The total value of products reported for the city in 1909 was \$746,075,659, which represents an increase over 1904 of \$154,687,581, or 26.2 per cent, while the increase for the preceding five-year period was \$71,406,266, or 13.7 per cent. The remarkable growth of manufactures in the newer sections of the country, however, has caused most of the older manufacturing centers to show a decrease in their proportion of the total production for the United States. Accordingly, Philadelphia, while reporting 4.6 per cent of the total value of products in 1899 and 4 per cent in 1904, shows only 3.6 per cent for 1909. The leading industries in the city, measured by value of products, together with the value of the products reported in 1909, were as follows: the woolen and worsted goods industry, \$54,922,000; printing and publishing, \$45,807,000; foundries and machine shops, \$38,685,000; and the manufacture of women's clothing, \$30,133,000. The refining of cane sugar had also a value of product large enough to include it in this group of industries, but the statistics can not be presented separately without disclosing the operations of individual establishments.

Among the cities of the United States, Philadelphia is preeminent in the production of all textiles combined and in each of four prominent branches, and so far outranked all other cities in 1909 that its combined value of such products was more than double that of its nearest competitor.

Of the total values for the United States, Philadelphia reported 12 per cent of the entire output of hosiery and knit goods, 31.8 per cent of the carpets and rugs, 12.6 per cent of the woolen and worsted goods, 3.6 per cent of the cotton goods, 21.7 per cent of the fur-felt hats, and 24.8 per cent of the shoddy. Other

leading industries in which the city holds high rank are the making of men's clothing, petroleum refining, the manufacture of leather (tanned, curried, and finished), and slaughtering and meat packing. The fact that the 8,379 establishments reported for Philadelphia in 1909 represented 211 of the 264 industry classifications used at that census indicates a great diversity in manufactures.

The importance of Philadelphia in manufactures as compared with the state as a whole is indicated by the fact that it turned out 28.4 per cent of the total value of manufactured products and employed 28.7 per cent of the total number of wage earners. Furthermore, the city in 1909 manufactured all of the files and printing ink reported for the state; at least 90 per cent of the output of artificial flowers, carpets and rugs, women's clothing, fancy articles, "not elsewhere specified," paper goods, "not elsewhere specified," and shoddy; from 70 to 90 per cent of leather belting and hose, fancy and paper boxes, buttons, men's clothing, gas and electric fixtures and lamps and reflectors, fur-felt hats, millinery and lace goods, patent medicines and compounds and druggists' preparations, soap, and woolen, worsted, and felt goods, and wool hats; from 60 to 70 per cent of the chemicals, clocks and watches, including cases and materials, cordage and twine and jute and linen goods, cotton goods, fertilizers, jewelry, leather goods, printing and publishing, and signs and advertising novelties; and from 50 to 60 per cent of the confectionery, independent dyeing and finishing, optical goods, and paint and varnish.

In addition to the 71 industries presented separately for Philadelphia in Table I, page 744, there are 140 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, 34¹ of them having a product valued in 1909 in excess of \$1,000,000, distributed as follows: Twenty-nine, with products valued at \$1,000,000 but less than \$5,000,000; 1, with products valued at \$5,000,000 but less than \$10,000,000; and 4, with products valued at \$10,000,000 and over.

The totals presented for Philadelphia, or for the state as a whole, do not include the statistics for three establishments located in that city and operated by the Federal Government, namely, the Frankford Arsenal, with an average of 1,920 wage earners and products valued at \$4,257,939 in 1909, the United

¹ These industries are:

Agricultural implements.
Babbit metal and solder.
Bags, other than paper.
Belting and hose, woven and rubber.
Cars and general shop construction and repairs by street-railroad companies.
Cars, street-railroad, not including operations of railroad companies.
Chocolate and cocoa products.
Coffee and spice, roasting and grinding.
Food preparations.
Dentists' materials.
Furnishing goods, men's.
Gas, illuminating and heating.
Glass, cutting, staining, and ornamenting.
Glue.
Grease and tallow.
Haircloth.
Iron and steel, bolts, nuts, washers, and

rivets, not made in steel works or rolling mills.
Locomotives, not made by railroad companies.
Mineral and soda waters.
Oil, linseed.
Oil, not elsewhere specified.
Oilecloth and linoleum.
Petroleum, refining.
Roofing materials.
Rubber goods, not elsewhere specified.
Sand and emery paper and cloth.
Saws.
Shipbuilding, including boat building.
Signs and advertising novelties.
Sporting and athletic goods.
Sugar, refining, not including beetsugar.
Tin plate and ternplate.
Upholstering materials.
Waste.

States navy yard, with 1,564 wage earners and products valued at \$2,402,850, and the Philadelphia depot of the Quartermaster's Department, U. S. Army, with 168 wage earners and products valued at \$1,349,278. The three establishments combined reported 3,652 wage earners and \$8,010,067 as the value of products.

Pittsburgh is the second city in the state in population and in value of manufactured products. In population it ranked eleventh in 1900 and eighth in 1910 among the cities of the United States, but in value of manufactured products was fourth in 1899 and seventh in 1909. This loss in relative standing is more apparent than real, for in the Pittsburgh district there has been for years a steady drift of important enterprises from the city proper to the surrounding boroughs and townships, some of which showed extraordinary gains during the decade 1899-1909. In value of products the manufactures of this city decreased from \$218,198,065 in 1899 to \$211,259,153 in 1904, a loss of 3.2 per cent, but increased to \$243,453,693 in 1909, making a gain for the decade of \$25,255,628, or 11.6 per cent. The leading industries in Pittsburgh are those which use ore and metal as the principal materials, such as blast furnaces, steel works and rolling mills, and foundries and machine shops; the combined output of these three industries in 1909 formed more than 50 per cent of the total value of all manufactured products for the city. Other important industries in the city are slaughtering and meat packing, with a product of \$13,107,000 in value; printing and publishing, with a product of \$9,071,000 in value; cars and general shop construction and repairs by steam-railroad companies, with a product of \$8,556,000 in value; bread and other bakery products, with a product of \$8,054,000 in value; canning and preserving, with a product of \$6,202,000 in value; the manufacture of malt liquors, with a product of \$5,420,000 in value; and tobacco manufactures, with a product of \$3,615,000 in value. In addition to the 41 industries presented separately for Pittsburgh in Table I, page 747, there were 9 others included in the group of "All other industries" each of which show products valued at more than \$1,000,000, namely, coke; cork, cutting; iron and steel, bolts, nuts, washers, and rivets, not made in steel works or rolling mills; iron and steel pipe, wrought; distilled liquors; locomotives; petroleum refining; smelting and refining, not from the ore; and steel springs, car and carriage.

Reading, with \$51,134,967 in 1909, ranked third in value of products among the cities of the state. There was an increase in the value of products of the city in 1909 over 1904 of \$20,644,025, or 67.7 per cent. Among the industries for which separate statistics for the city can be presented for Reading in Table I, page 749, steel works and rolling mills, with products valued at \$8,190,000 and giving employment to 3,011 wage earners, constitutes the leading industry in 1909, and steam-railroad repair shops, with products

valued at \$5,661,000 and employing 2,628 wage earners, came next in importance from the standpoint of value of products. The hosiery and knit-goods industry was third in value of products, with \$4,551,000, followed by foundries and machine shops, with \$3,889,000. Other industries showing a value of products exceeding \$1,000,000 were: Boots and shoes; confectionery; fur-felt hats; iron and steel pipe, wrought; malt liquors; slaughtering and meat packing; tobacco manufactures; and woolen, worsted, and felt goods, and wool hats. This city has long been one of the important wool-felt hat manufacturing centers in the United States. In 1909 Reading and its suburb, Mohnton, returned nearly 94.6 per cent of the total value reported for wool-felt hats in the state and 30.9 per cent of the total value for the United States.

Johnstown, the fourth city in the state in value of its manufactures, showed an increase in 1909 over 1904 of \$19,213,969, or 66.5 per cent. The manufacturing activities are confined largely to a single group of industries, as in 1909 the establishments engaged in metal working, which include, among others, blast furnaces, steel works and rolling mills, and foundries and machine shops, returned about 85 per cent of the total number of wage earners and almost 90 per cent of the total value of products for all manufacturing industries in the city. Detailed statistics, however, are not shown for these industries in Table I, page 744, because a large proportion of the total output was controlled by two corporations. Other industries are coke; flour-mill and gristmill products; malt liquors; pottery, terra-cotta, and fire-clay products; and slaughtering and meat packing.

McKeesport, the fifth city of the state in 1909 in the value of manufactures, reported in 1899 manufactured products valued at \$36,058,447. In 1904 the total reported was only \$23,054,412, a decrease of \$13,004,035, or 36.1 per cent, for the five-year period, but in 1909 the total had advanced to \$42,494,567, making a net gain for the decade of \$6,436,120, or 17.8 per cent. Practically the entire manufacturing activity of the city is in the iron and steel manufactures, five steel works and rolling mills and one blast furnace being located in the city in 1909. The most important product consists of pipe and tubes, in the output of which this city outranks all others in the United States. Other industries in the city are comparatively unimportant.

New Castle was in 1909 sixth in importance among the cities and boroughs of the state as measured by value of manufactured products. The city shows an increase of \$9,114,288, or 31.5 per cent, from 1904 to 1909, and \$8,907,436, or 44.5 per cent, from 1899 to 1904. The industrial importance of New Castle is dependent upon the metal-working industries, the most important of which were steel works and rolling mills, blast furnaces, tin-plate and terneplate mills, and also on the steam-railroad car construction shops.

These four classes of establishments reported more than 90 per cent of the total value of products and gave employment to over 70 per cent of the average number of wage earners shown for the city in 1909.

South Bethlehem was the seventh city of the state in manufactures in 1909, having advanced from twelfth place in 1904 and fifteenth place in 1899. This city has shown decided gains in recent years in the value of products, the increase being \$5,311,357, or 53.3 per cent, from 1899 to 1904 and \$11,141,692, or 72.9 per cent, from 1904 to 1909. The one steel works and rolling mill represents by far the leading industry in the city, although the two blast furnaces and one zinc smelter contribute considerably to its manufacturing activity. The six establishments engaged in the manufacture of tobacco products, the four knitting mills, and one foundry and machine shop also reported a large output of manufactured products in 1909. The exact value of these different classes of products can not be presented separately without disclosing the operations of individual establishments.

Scranton, although the third city of the state in population in 1910, held only eighth place in 1909 when ranked by value of products. This discrepancy, in a great measure, may be accounted for by the fact that a considerable portion of the population of the city were employed in the coal mines in the city and its immediate vicinity, the statistics for which are not embraced with those for manufactures. The value of products decreased from \$24,741,837 in 1899 to \$20,453,285 in 1904, but increased to \$26,384,755 in 1909, making a net gain for the decade of \$1,642,918, or 6.6 per cent. The rank of this city in manufactures was fifth in 1899 and seventh in 1904. The manufacture of silk goods was the leading industry. With 15 mills in operation in 1909, this industry turned out products valued at \$6,631,000, which represented 25.1 per cent of the total for all industries in the city and 10.7 per cent of the total for the silk industry in the state. Other important industries are steam-railroad repair shops, foundry and machine-shop products, malt liquors, hosiery and knit goods, printing and publishing, and slaughtering and meat packing.

Allentown ranked as the ninth city in the state in 1909 and 1904 and tenth in 1899 in the value of its manufactured products, and showed an increase of \$9,422,284, or 55.9 per cent, during the period from 1904 to 1909, and \$1,850,606, or 12.3 per cent, for the preceding five-year period. After Philadelphia, Allentown is the most important city of the state in the manufacture of textiles. The textile industries, including the dyeing and finishing of textiles, are the most important in the city, having a combined output valued at \$9,838,000, or 37.5 per cent of the total for all industries of the city in 1909. The manufacture of silk and silk goods is the leading branch of the textile industry in this city and increased

in value of product from \$3,468,000 in 1889 to \$7,456,000 in 1909. The metal-working industries reported products valued at nearly \$7,000,000; the boot and shoe industry, products valued at \$1,302,000; and tobacco manufactures, products valued at \$1,446,000. The manufacture of automobiles, bread and other bakery products, furniture and refrigerators, and malt liquors, together with slaughtering and meat packing, are also important.

Erie shows an increase in value of products from 1904 to 1909 of \$5,586,472, or 30 per cent, and from 1899 to 1904 of \$2,146,275, or 13 per cent. The leading industry in the city is foundry and machine-shop products, which were valued at \$8,715,000 in 1909 and formed 36 per cent of the total value of manufactures in the city. Other important industries are: Flour mills and gristmills; iron and steel, blast furnaces; lumber and timber products; the brewing of malt liquors; the paper and wood-pulp industry; printing and publishing; the manufacture of rubber goods; slaughtering and meat packing; the manufacture of stoves and furnaces; and of washing machines and clothes wringers.

Harrisburg shows an increase in value of products of \$6,154,613, or 37.1 per cent, from 1904 to 1909, which is nearly four times as great as that shown from 1899 to 1904. The steel works and rolling mills form the leading industry in the city. There are a number of other important industries, but the statistics for the most of them can not be presented separately without disclosing the operations of individual establishments. These industries are: Boots and shoes, bread and other bakery products, steam-railroad repair shops, foundry and machine-shop products, blast furnaces, printing and publishing, silk and silk goods, slaughtering and meat packing, tin plate and terne-plate, tobacco manufactures, typewriters and supplies, and women's clothing.

In Chester the metal-working industries are the most important, as combined they reported more than one-third of the \$19,373,314 shown as the total value of products for the city. Next in importance are the textile industries, particularly cotton, and woolen and worsted goods, the combined output for the two classes of goods being more than one-fourth of the total value of all manufactured products reported for the city. The slaughtering and meat-packing; pottery, terracotta, and fire-clay; and leather (tanned, carried, and finished) industries rank in the order named.

York, the thirteenth city in the state in value of manufactured products, owes its industrial prominence to a number of industries, the most important being foundries and machine shops. In 1909 they employed 1,967 wage earners, and turned out products valued at \$3,985,000, representing 18.7 per cent and 21.4 per cent of the respective totals for the city. Five other industries in the city reported products valued at more than \$1,000,000, as follows: Agricultural implements, carriages and wagons, tex-

tiles (hosiery and knit goods, and silk and silk goods), tobacco manufactures, and wall paper.

Altoona, with products valued at \$16,762,738 in 1909, shows an increase, compared with 1904, of \$2,412,775, or 16.8 per cent. The leading industry is steam-railroad repair shops, but the statistics can not be shown separately for Altoona in Table I, page 742, without disclosing the operations of individual establishments. No other industry in the city is of special importance, with the exception of silk and silk goods, which is represented by one establishment.

Lancaster dropped in rank among the cities and boroughs of the state as measured by value of products from twelfth in 1899 to thirteenth in 1904 and to fifteenth in 1909. In the manufacture of umbrellas and canes, which is the leading industry in the city, employing an average of 1,012 wage earners and turning out products valued at \$2,840,000, Lancaster ranks second among the cities of the United States. The next industry in importance is tobacco manufactures, which employed 1,453 wage earners and reported products valued at \$1,970,000 in 1909. Foundries and machine shops is another industry which reported manufactured products valued at more than \$1,000,000.

Wilkes-Barre, with manufactured products valued at \$13,525,957 in 1909, shows an increase over 1904 of \$2,526,203, or 23 per cent. The largest industry in the city for which figures are shown separately for Wilkes-Barre in Table I, page 751, is the manufacture of silk and silk goods. The manufacture of carriages and wagons, cotton goods, malt liquors, locomotives, and wire are also important.

In Williamsport the lumber industry was the most important in the city for many years. With the depletion of the forests in northern Pennsylvania, the annual production of lumber decreased; and the importance of this industry in the manufacturing activities of the city has fallen off, until in 1909 the value of products amounted to less than \$2,000,000. The manufacture of silk and silk goods was the most important industry in 1909, followed by foundry and machine shops, lumber and timber products, the manufacture of rubber boots and shoes, the furniture and refrigerator industry, and printing and publishing. The tanning industry, which is of importance in this city, has decreased considerably during the five-year period from 1904 to 1909, but in the latter year showed products in excess of three-quarters of a million in value.

The remaining 46 cities and boroughs in the state, each of which had more than 10,000 inhabitants but less than 30,000, owe their importance in manufactures, as a rule, to a single industry. The iron and steel industries, including foundries and machine shops, predominate in the following places: Pottstown, Lebanon, Sharon, McKees Rocks, Pottsville, Beaver Falls, Phoenixville, Braddock, Columbia, Oil City, Bradford, Homestead, Chambersburg, Coatesville, Duquesne,

Monessen, South Sharon, and Steelton; silk and silk goods, in Easton, Hazleton, Sunbury, Bethlehem, Shamokin, and Old Forge; steam-railroad repair shops, in Meadville, Carbondale, Connellsville, Dubois, and Dunmore; malt liquors, in Pittston, Uniontown, Shenandoah, and Nanticoke; hosiery and knit goods, in Norristown and Plymouth; petroleum refining, in Warren; steam-railroad cars, in Butler; lead smelting and refining, in Carnegie; glass, in Washington; boots and shoes, in Carlisle; dairymen's, poulterers', and apiarists' supplies, in West Chester; shirts, in Mahanoy City; slaughtering and meat packing, in Mount Carmel; printing and publishing, in Greensburg; planing-mill products, in Wilkesburg; and brick and tile, in North Braddock.

Character of ownership.—The table on the following page 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. Of the total number of establishments in all industries combined, 21.3 per cent were under corporate ownership in 1909, as against 78.7 per cent under all other forms. The corresponding figures for 1904 were 19.3 per cent and 80.7 per cent, respectively. In respect to value of products the corresponding proportions are reversed, but the differences are not so pronounced. In 1909 the establishments operated by corporations reported 78.2 per cent of the total value, as against 21.8 per cent for those under all other forms of ownership, while in 1904 the corresponding figures were 71.7 per cent and 28.3 per cent, respectively. The greatest relative decreases are for establishments operated by firms, which represented only 19.6 per cent of the total number of establishments and 11.5 per cent of the total value of products in 1909, as compared with 21.9 per cent and 16.5 per cent for the respective totals in 1904.

The form of ownership prevailing in the different industries presented separately in the table varied greatly. In number of establishments, those owned by individuals ranged from 14.1 per cent in silk and silk goods to 91.3 per cent in bakery products, while those owned by corporations ranged from two-tenths of 1 per cent in the latter industry to 65.5 per cent in the former. The variation in the proportions owned by firms in the different industries was considerable, but not so pronounced as in the other two principal forms.

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:					Hosiery and knit goods, 1909				
1909	27,563	877,543	\$2,626,742,034	\$1,044,182,046	1909	464	38,206	\$49,657,508	\$22,439,556
1904	23,496	763,282	1,955,551,332	812,608,625	Individual	185	9,363	12,160,619	5,059,341
Individual:					Firm	130	7,714	10,952,157	4,808,038
1909	16,051	111,437	267,060,904	121,134,145	Corporation	149	21,129	26,544,730	12,511,576
1904	13,615	106,547	226,900,537	100,702,943	Per cent of total	100.0	100.0	100.0	100.0
Firm:					Individual	39.9	24.5	24.5	22.5
1909	5,408	122,625	301,405,058	131,028,704	Firm	28.0	20.2	22.1	21.7
1904	5,144	145,445	322,330,429	143,632,042	Corporation	32.1	55.3	53.5	55.8
Corporation:					Leather, tanned, curried, and finished, 1909				
1909	5,880	642,866	2,053,458,538	789,991,257	1909	183	14,008	\$77,926,321	\$18,813,187
1904	4,540	510,711	1,493,081,857	561,519,993	Individual	39	779	2,882,720	820,670
Other:					Firm	36	2,272	13,092,835	3,080,233
1909	224	615	4,817,534	2,027,940	Corporation	88	10,957	61,050,766	14,912,294
1904	196	579	3,238,593	753,647	Per cent of total	100.0	100.0	100.0	100.0
Per cent of total:					Individual	23.0	6.6	3.7	4.4
1909	100.0	100.0	100.0	100.0	Firm	22.1	18.2	18.2	18.4
1904	100.0	100.0	100.0	100.0	Corporation	54.0	78.2	78.3	79.3
Individual:					Liquors, malt, 1909				
1909	58.2	12.7	10.2	11.6	1909	237	7,234	\$47,712,570	\$35,102,473
1904	57.9	14.0	11.6	13.1	Individual	52	813	4,639,838	3,132,904
Firm:					Firm	31	809	4,922,083	3,561,337
1909	19.6	14.0	11.5	12.5	Corporation	154	5,612	38,150,649	28,408,232
1904	21.9	19.1	16.5	17.7	Per cent of total	100.0	100.0	100.0	100.0
Corporation:					Individual	21.9	11.2	9.7	8.9
1909	21.3	73.3	78.2	75.7	Firm	13.1	11.2	10.3	10.1
1904	19.3	66.9	71.7	69.1	Corporation	65.0	77.0	80.0	80.9
Other:					Lumber and timber products, 1909				
1909	0.8	0.1	0.2	0.2	1909	2,667	26,873	\$57,453,583	\$30,139,347
1904	0.8	0.1	0.2	0.1	Individual	1,640	9,445	17,547,215	9,849,176
Bread and other bakery products, 1909					Firm	767	6,620	13,718,916	7,276,119
1909	3,185	12,221	\$45,850,070	\$18,520,454	Corporation	270	10,808	26,187,452	13,016,052
1904	2,907	6,991	25,107,663	10,124,331	Per cent of total	100.0	100.0	100.0	100.0
Firm:					Individual	61.5	35.1	30.5	32.7
1909	206	906	3,293,151	1,325,184	Firm	28.4	24.6	23.9	24.1
1904	72	4,324	17,449,256	7,070,939	Corporation	10.1	40.2	45.6	43.2
Per cent of total	100.0	100.0	100.0	100.0	Printing and publishing, 1909				
Individual	91.3	57.2	54.8	54.7	1909	2,461	24,686	\$70,584,179	\$47,831,430
Firm	6.5	7.4	7.2	7.2	Individual	1,445	6,029	14,139,129	10,199,621
Corporation	2.2	35.4	38.1	38.2	Firm	435	4,101	8,453,297	6,064,175
Clothing, men's, including shirts, 1909					Corporation	471	14,257	46,791,442	29,879,644
1909	696	23,623	\$39,681,760	\$19,818,626	Other	110	309	2,200,311	1,687,990
1904	407	7,545	9,244,332	5,511,082	Per cent of total	100.0	100.0	100.0	100.0
Firm:					Individual	58.7	24.4	20.0	21.3
1909	261	13,650	26,185,628	12,367,622	Firm	17.7	16.6	12.0	12.7
1904	28	2,428	4,251,800	1,939,922	Corporation	19.1	57.7	64.9	62.5
Per cent of total	100.0	100.0	100.0	100.0	Other	4.5	1.3	3.1	3.5
Individual	58.5	31.9	23.3	27.8	Silk and silk goods, including throwsters, 1909				
Firm	37.5	57.8	66.0	62.4	1909	226	36,469	\$62,061,302	\$26,895,731
Corporation	4.0	10.3	10.7	9.8	Individual	32	3,097	5,766,036	2,949,672
Clothing, women's, 1909					Firm	46	7,231	12,370,475	5,729,753
1909	401	15,791	\$32,837,424	\$14,681,191	Corporation	148	26,141	43,924,791	18,216,406
1904	175	5,309	10,300,487	4,518,025	Per cent of total	100.0	100.0	100.0	100.0
Firm:					Individual	14.1	8.5	9.3	11.0
1909	201	8,496	18,622,936	8,491,592	Firm	20.4	19.8	19.9	21.3
1904	25	1,896	3,914,301	1,671,574	Corporation	65.5	71.7	70.8	67.7
Per cent of total	100.0	100.0	100.0	100.0	Slaughtering and meat packing, 1909				
Individual	43.6	33.8	31.4	30.8	1909	180	3,050	\$51,850,936	\$7,005,889
Firm	50.1	54.1	56.7	57.8	Individual	62	693	9,406,946	1,079,096
Corporation	6.2	12.1	11.9	11.4	Firm	44	383	6,988,578	679,828
Cotton goods, including cotton small wares, 1909					Corporation	44	1,969	35,455,412	4,946,967
1909	175	16,293	\$33,917,033	\$15,160,008	Per cent of total	100.0	100.0	100.0	100.0
1904	48	2,424	5,355,654	2,609,366	Individual	51.1	22.7	18.1	15.4
Firm:					Firm	24.4	12.7	13.5	14.0
1909	43	3,540	6,602,563	2,672,054	Corporation	24.4	64.6	68.4	70.6
1904	84	10,329	21,958,816	9,878,588	Tobacco manufactures, 1909				
Per cent of total	100.0	100.0	100.0	100.0	1909	2,432	33,188	\$50,161,387	\$29,447,964
Individual	27.4	14.9	15.8	17.2	Individual	2,091	10,010	14,018,961	8,404,675
Firm	24.6	21.7	19.5	17.6	Firm	253	10,332	16,172,156	9,116,610
Corporation	48.0	63.4	64.7	65.2	Corporation	88	12,846	19,970,270	11,925,679
Flour-mill and gristmill products, 1909					Per cent of total	100.0	100.0	100.0	100.0
1909	1,450	2,432	\$44,782,558	\$6,812,430	Individual	86.0	30.2	27.9	28.0
1904	1,034	1,254	19,789,007	3,156,422	Firm	10.4	31.1	32.2	31.0
Firm:					Corporation	3.6	38.7	39.8	40.5
1909	358	686	12,723,440	1,984,217	Woolen, worsted, and felt goods, and wool hats, 1909				
1904	58	402	12,270,105	1,471,791	1909	217	27,409	\$77,446,996	\$22,812,911
Per cent of total	100.0	100.0	100.0	100.0	Individual	59	4,340	12,195,424	3,576,306
Individual	71.3	51.6	44.2	47.7	Firm	73	7,942	22,867,665	7,006,445
Firm	24.7	28.2	28.4	30.0	Corporation	85	15,127	42,383,907	12,230,160
Corporation	4.0	20.2	27.4	22.3	Per cent of total	100.0	100.0	100.0	100.0
Foundry and machine-shop products, 1909					Individual	27.2	15.8	15.7	15.7
1909	1,685	86,821	\$210,746,257	\$109,735,517	Firm	33.6	29.0	29.5	30.7
1904	646	5,923	11,606,806	6,629,411	Corporation	39.2	55.2	54.7	53.0
Firm:									
1909	292	4,083	8,578,983	5,042,513					
1904	757	76,815	190,500,468	98,063,593					
Per cent of total	100.0	100.0	100.0	100.0					
Individual	38.1	6.8	5.5	6.0					
Firm	17.2	4.7	4.1	4.6					
Corporation	44.7	88.5	90.4	89.4					

¹ Includes the group "Other," to avoid disclosure of individual operations.

STATISTICS OF MANUFACTURES.

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 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 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	27,563	877,543	\$2,626,742,034	\$1,044,182,046	Cotton goods, including cotton small wares, 1909—Continued.				
1904	23,495	763,282	1,955,551,332	812,608,625	Per cent of total.....	100.0	100.0	100.0	100.0
Less than \$5,000:					Less than \$5,000.....	2.9	(?)	(?)	(?)
1909	9,493	12,392	22,574,998	13,719,359	\$5,000 and less than \$20,000.....	12.6	1.1	0.8	1.0
1904	7,567	11,307	18,788,800	11,568,864	\$20,000 and less than \$100,000.....	36.6	11.8	11.0	10.3
\$5,000 and less than \$20,000:					\$100,000 and less than \$1,000,000.....	44.6	66.3	64.6	63.0
1909	8,764	46,720	90,897,695	48,251,171	\$1,000,000 and over.....	3.4	20.7	23.6	25.6
1904	7,876	46,076	80,441,200	43,334,120	Average per establishment.....		93	\$193,812	\$89,629
\$20,000 and less than \$100,000:					Flour-mill and gristmill products, 1909.....	1,450	2,432	\$44,782,558	\$6,612,430
1909	5,802	131,163	258,098,545	128,772,576	Less than \$5,000.....	234	94	731,508	134,632
1904	5,184	127,130	231,119,163	119,478,521	\$5,000 and less than \$20,000.....	676	589	7,657,933	1,358,659
\$100,000 and less than \$1,000,000:					\$20,000 and less than \$100,000.....	474	1,028	18,381,215	2,899,887
1909	3,104	370,092	923,150,484	412,401,925	\$100,000 and less than \$1,000,000.....	61	469	10,303,209	1,412,363
1904	2,584	325,475	723,662,644	326,656,667	\$1,000,000 and over.....	5	252	7,708,693	806,869
\$1,000,000 and over:					Per cent of total.....	100.0	100.0	100.0	100.0
1909	400	317,186	1,331,111,312	440,977,015	Less than \$5,000.....	16.1	3.9	1.6	2.0
1904	284	253,204	901,539,525	311,520,453	\$5,000 and less than \$20,000.....	46.6	24.2	17.1	20.5
Per cent of total:					\$20,000 and less than \$100,000.....	32.7	42.3	41.0	43.9
1909	100.0	100.0	100.0	100.0	\$100,000 and less than \$1,000,000.....	4.2	19.3	23.0	21.4
1904	100.0	100.0	100.0	100.0	\$1,000,000 and over.....	0.5	10.4	17.2	12.2
Less than \$5,000:					Average per establishment.....		2	\$30,585	\$4,560
1909	34.4	1.4	0.9	1.3	Foundry and machine-shop products, 1909.....	1,695	86,821	\$210,746,257	\$109,735,517
1904	32.2	1.5	1.0	1.4	Less than \$5,000.....	397	546	988,408	681,614
\$5,000 and less than \$20,000:					\$5,000 and less than \$20,000.....	459	2,618	4,782,893	3,013,043
1909	31.8	5.3	3.5	4.6	\$20,000 and less than \$100,000.....	465	11,799	22,363,155	12,593,704
1904	33.5	6.0	4.1	5.3	\$100,000 and less than \$1,000,000.....	344	46,441	107,648,955	56,358,299
\$20,000 and less than \$100,000:					\$1,000,000 and over.....	30	25,417	74,962,840	37,088,797
1909	21.0	14.9	9.9	12.3	Per cent of total.....	100.0	100.0	100.0	100.0
1904	22.1	16.7	11.8	14.7	Less than \$5,000.....	23.4	0.6	0.5	0.6
\$100,000 and less than \$1,000,000:					\$5,000 and less than \$20,000.....	27.1	3.0	2.3	2.7
1909	11.3	42.2	35.1	39.5	\$20,000 and less than \$100,000.....	27.4	13.6	10.6	11.5
1904	11.0	42.6	37.0	46.2	\$100,000 and less than \$1,000,000.....	20.3	53.5	51.1	51.4
\$1,000,000 and over:					\$1,000,000 and over.....	1.8	29.3	35.6	38.4
1909	1.5	36.1	50.7	42.2	Average per establishment.....		51	\$124,334	\$64,741
1904	1.2	33.2	46.1	38.3	Hosiery and knit goods, 1909.....	464	38,206	\$49,657,508	\$22,439,555
Average per establishment:					Less than \$5,000.....	35	102	82,631	42,893
1909	32	32	\$95,300	\$37,883	\$5,000 and less than \$20,000.....	84	1,175	1,030,114	539,428
1904	32	32	83,233	34,585	\$20,000 and less than \$100,000.....	204	8,981	9,991,390	4,640,244
Bread and other bakery products, 1909.....	3,185	12,221	\$45,850,070	\$18,520,454	\$100,000 and less than \$1,000,000.....	141	27,948	38,558,371	17,216,990
Less than \$5,000.....	1,306	970	3,897,535	1,620,376	Per cent of total.....	100.0	100.0	100.0	100.0
\$5,000 and less than \$20,000.....	1,676	4,137	14,569,504	6,037,773	Less than \$5,000.....	7.5	0.3	0.2	0.2
\$20,000 and less than \$100,000.....	288	2,660	9,127,709	3,543,456	\$5,000 and less than \$20,000.....	18.1	3.1	2.1	2.4
\$100,000 and less than \$1,000,000.....	40	2,576	9,357,437	3,443,676	\$20,000 and less than \$100,000.....	44.0	23.5	20.1	20.7
\$1,000,000 and over.....	5	1,878	8,857,885	3,909,173	\$100,000 and less than \$1,000,000.....	30.4	73.2	77.6	76.7
Per cent of total.....	100.0	100.0	100.0	100.0	\$1,000,000 and over.....		82	\$107,020	\$48,361
Less than \$5,000.....	41.0	7.9	8.5	8.7	Leather, tanned, curried, and finished, 1909.....	183	14,008	\$77,926,321	\$18,813,197
\$5,000 and less than \$20,000.....	49.5	33.9	31.8	32.4	Less than \$5,000.....	10	3	25,205	7,357
\$20,000 and less than \$100,000.....	8.1	21.8	19.9	19.1	\$5,000 and less than \$20,000.....	13	72	190,089	83,996
\$100,000 and less than \$1,000,000.....	1.3	21.1	20.5	18.6	\$20,000 and less than \$100,000.....	21	196	1,005,393	273,414
\$1,000,000 and over.....	0.2	15.4	19.2	21.1	\$100,000 and less than \$1,000,000.....	91	6,505	37,931,745	8,667,290
Average per establishment.....		4	\$14,396	\$5,815	\$1,000,000 and over.....	23	7,232	38,767,889	9,791,140
Clothing, men's, including shirts, 1909.....	696	23,628	\$39,681,760	\$19,818,626	Per cent of total.....	100.0	100.0	100.0	100.0
Less than \$5,000.....	155	722	401,328	1,620,376	Less than \$5,000.....	6.1	(?)	(?)	(?)
\$5,000 and less than \$20,000.....	244	4,486	2,633,941	1,134,782	\$5,000 and less than \$20,000.....	11.0	0.5	0.3	0.4
\$20,000 and less than \$100,000.....	219	8,112	9,628,375	5,403,446	\$20,000 and less than \$100,000.....	12.9	1.4	1.3	1.5
\$100,000 and less than \$1,000,000.....	75	8,799	20,783,886	8,926,569	\$100,000 and less than \$1,000,000.....	55.8	46.4	48.7	46.0
\$1,000,000 and over.....	3	1,504	6,234,730	2,969,615	\$1,000,000 and over.....	14.1	51.6	49.7	52.0
Per cent of total.....	100.0	100.0	100.0	100.0	Average per establishment.....		86	\$478,076	\$115,418
Less than \$5,000.....	22.3	3.1	1.0	1.8	Liquors, malt, 1909.....	237	7,234	\$47,712,570	\$35,102,473
\$5,000 and less than \$20,000.....	35.1	19.0	6.6	10.8	\$5,000 and less than \$20,000.....	15	61	175,422	105,462
\$20,000 and less than \$100,000.....	31.5	34.3	24.3	27.3	\$20,000 and less than \$100,000.....	68	835	3,711,359	2,488,432
\$100,000 and less than \$1,000,000.....	10.8	37.2	52.4	45.0	\$100,000 and less than \$1,000,000.....	146	5,030	33,119,290	24,476,615
\$1,000,000 and over.....	0.4	6.4	15.7	15.1	\$1,000,000 and over.....	8	1,308	10,708,499	8,031,964
Average per establishment.....		34	\$57,014	\$28,475	Per cent of total.....	100.0	100.0	100.0	100.0
Clothing, women's, 1909.....	401	15,701	\$32,837,424	\$14,681,191	Less than \$5,000.....	6.3	0.8	0.4	0.3
Less than \$5,000.....	39	108	102,155	66,343	\$5,000 and less than \$20,000.....	28.7	11.5	7.8	7.1
\$5,000 and less than \$20,000.....	102	1,087	1,106,493	715,037	\$20,000 and less than \$100,000.....	61.6	69.5	60.4	69.7
\$20,000 and less than \$100,000.....	161	4,462	8,130,503	3,802,253	\$1,000,000 and over.....	3.4	18.1	22.4	22.9
\$100,000 and less than \$1,000,000.....	99	10,064	23,498,273	10,097,558	Average per establishment.....		31	\$201,319	\$148,112
Per cent of total.....	100.0	100.0	100.0	100.0	Lumber and timber products, 1909.....	2,667	26,873	\$57,453,583	\$30,139,347
Less than \$5,000.....	9.7	0.7	0.3	0.5	Less than \$5,000.....	1,281	2,427	2,961,331	1,983,415
\$5,000 and less than \$20,000.....	25.4	6.8	3.4	4.9	\$5,000 and less than \$20,000.....	850	6,288	8,580,334	5,163,976
\$20,000 and less than \$100,000.....	40.1	28.4	24.8	25.9	\$20,000 and less than \$100,000.....	438	8,368	18,480,655	9,116,893
\$100,000 and less than \$1,000,000.....	24.7	64.1	71.6	63.8	\$100,000 and less than \$1,000,000.....	93	8,491	21,876,012	10,541,809
Average per establishment.....		39	\$81,889	\$36,611	\$1,000,000 and over.....	5	2,299	5,555,401	3,343,254

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

² Less than one-tenth of 1 per cent.

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.
Lumber and timber products, 1909—Continued.					Slaughtering and meat packing, 1909—Continued.				
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.....	48.0	9.0	5.2	6.6	Less than \$5,000.....	5.6	0.3	0.1	0.2
\$5,000 and less than \$20,000.....	31.9	19.7	14.9	17.1	\$5,000 and less than \$20,000.....	16.7	1.7	0.7	1.1
\$20,000 and less than \$100,000.....	16.4	31.1	32.2	30.2	\$20,000 and less than \$100,000.....	33.3	7.9	5.8	6.5
\$100,000 and less than \$1,000,000.....	3.5	31.6	38.1	35.0	\$100,000 and less than \$1,000,000.....	37.8	39.0	40.4	44.9
\$1,000,000 and over.....	0.2	8.6	9.7	11.1	\$1,000,000 and over.....	6.7	51.1	53.0	47.4
Average per establishment.....		10	\$21,542	\$11,301	Average per establishment.....		17	\$288,061	\$38,922
Printing and publishing, 1909.					Tobacco manufactures, 1909.				
Less than \$5,000.....	2,461	24,696	\$70,584,179	\$47,831,430	Less than \$5,000.....	2,432	33,188	\$50,161,387	\$29,447,864
\$5,000 and less than \$20,000.....	1,171	1,468	2,864,836	2,192,369	\$5,000 and less than \$20,000.....	1,650	1,611	2,846,418	1,827,835
\$20,000 and less than \$100,000.....	829	4,288	8,146,507	6,128,908	\$20,000 and less than \$100,000.....	471	3,753	4,629,570	2,935,571
\$100,000 and less than \$1,000,000.....	353	6,806	14,394,899	10,438,229	\$100,000 and less than \$1,000,000.....	212	7,122	9,081,905	5,260,243
\$1,000,000 and over.....	101	9,975	28,944,970	19,080,054	\$1,000,000 and over.....	96	18,930	28,679,959	16,277,457
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.....	47.6	5.9	4.1	4.6	Less than \$5,000.....	67.8	4.6	5.7	6.2
\$5,000 and less than \$20,000.....	33.7	17.4	11.5	12.8	\$5,000 and less than \$20,000.....	19.4	11.3	9.2	10.0
\$20,000 and less than \$100,000.....	14.3	27.6	20.4	21.8	\$20,000 and less than \$100,000.....	8.7	21.5	18.1	17.9
\$100,000 and less than \$1,000,000.....	4.1	40.4	41.0	39.9	\$100,000 and less than \$1,000,000.....	3.9	57.0	57.2	55.3
\$1,000,000 and over.....	0.3	8.8	23.0	20.9	\$1,000,000 and over.....	0.1	5.6	9.8	10.7
Average per establishment.....		10	\$28,681	\$19,436	Average per establishment.....		14	\$20,626	\$12,109
Silk and silk goods, including throwsters, 1909.					Woolen, worsted, and felt goods, and wool hats, 1909.				
Less than \$5,000.....	226	36,469	\$62,061,302	\$26,895,731	Less than \$5,000.....	217	27,409	\$77,446,896	\$22,812,911
\$5,000 and less than \$20,000.....	9	96	22,456	1,500	\$5,000 and less than \$20,000.....	14	19	26,604	11,954
\$20,000 and less than \$100,000.....	23	378	271,109	174,328	\$20,000 and less than \$100,000.....	16	188	187,268	121,387
\$100,000 and less than \$1,000,000.....	84	6,941	4,518,202	3,049,315	\$100,000 and less than \$1,000,000.....	60	2,062	3,323,855	1,468,391
\$1,000,000 and over.....	97	18,250	33,362,541	15,191,962	\$1,000,000 and less than \$1,000,000.....	109	13,172	36,011,874	11,867,947
Per cent of total.....	100.0	100.0	100.0	100.0	\$1,000,000 and over.....	18	11,938	36,997,395	9,343,232
Less than \$5,000.....	4.0	0.3	(¹)	(¹)	Per cent of total.....	100.0	100.0	100.0	100.0
\$5,000 and less than \$20,000.....	10.2	1.0	0.4	0.6	Less than \$5,000.....	6.5	0.1	(¹)	0.1
\$20,000 and less than \$100,000.....	37.2	19.0	7.3	11.3	\$5,000 and less than \$20,000.....	7.4	0.7	0.2	0.5
\$100,000 and less than \$1,000,000.....	42.9	50.0	53.8	56.5	\$20,000 and less than \$100,000.....	27.6	7.6	4.3	6.4
\$1,000,000 and over.....	5.8	29.6	38.5	31.5	\$100,000 and less than \$1,000,000.....	50.2	48.1	47.7	52.0
Average per establishment.....		161	\$274,608	\$119,008	\$1,000,000 and over.....	8.3	43.6	47.8	41.0
Slaughtering and meat packing, 1909.					Average per establishment.....				
Less than \$5,000.....	180	3,059	\$51,850,936	\$7,005,889			126	\$356,899	\$105,129
\$5,000 and less than \$20,000.....	10	8	27,407	12,777					
\$20,000 and less than \$100,000.....	30	53	374,709	77,318					
\$100,000 and less than \$1,000,000.....	69	240	2,936,699	453,074					
\$1,000,000 and over.....	68	1,199	20,932,480	3,144,826					
	12	1,559	27,436,674	3,317,894					

¹ Less than one-tenth of 1 per cent.

This table shows that, in 1909, of the 27,563 establishments, only 400, or 1.5 per cent, had a value of products exceeding \$1,000,000. These establishments, however, employed an average of 317,186 wage earners, or 36.1 per cent of the total number in all establishments, and reported 50.7 per cent of the total value of products and 42.2 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 (34.4 per cent) of the total number of establishments, but the value of their products amounted to only nine-tenths of 1 per cent of the total. The great bulk of the manufacturing was reported by establishments having products valued at not less than \$100,000.

The above table shows 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 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 \$83,233 to \$95,300 and the average value added by manufacture from \$34,586 to \$37,883 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, 32, was the same at both censuses.

The average value of products per establishment is high in the leather, woolen and worsted goods, slaughtering and meat-packing, and silk-goods industries, while the average is low in the bakery and lumber industries and tobacco manufactures. The average value of products in the tanneries was \$478,076, and in the bakeries was \$14,396.

The largest establishments in the state, however, as measured by average value of products per establishment, were the steel works and rolling mills, with an average of \$2,647,323; the blast furnaces, with \$2,554,218; and the steam-railroad car construction shops, with \$2,116,134; but none of these industries are shown separately in the above table.

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 43 important industries individually, and gives not only the number of establishments falling into each group but also the average number of wage earners employed.

STATISTICS OF MANUFACTURES.

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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.
All industries	27,563	3,839	13,040	5,313	2,010	1,356	1,051	387	178	89
Boots and shoes, including cut stock and findings.....	140	1	23	33	28	24	21	8	2	.....
Bread and other bakery products.....	3,185	542	2,299	279	40	15	6	3	1	.....
Butter, cheese, and condensed milk.....	536	79	425	25	5	2	.....	.....	.....	.....
Carpets and rugs, other than rag.....	93	6	4	18	23	19	12	6	3	2
Carriages and wagons and materials.....	655	56	343	203	31	14	6	1	.....	1
Cars and general shop construction and repairs by steam-railroad companies.....	132	.....	11	15	20	17	29	12	15	13
Cars, steam-railroad, not including operations of railroad companies.....	13	.....	.....	2	2	3	1	1	.....	3
Cement.....	27	.....	.....	2	2	1	12	7	.....	1
Chemicals.....	37	.....	9	10	10	2	3	.....	.....	.....
Clothing, men's, including shirts.....	696	21	183	206	189	59	37	7	2	1
Clothing, women's.....	401	10	62	133	116	44	33	2	2	.....
Coke.....	146	.....	24	43	18	26	25	0	.....	1
Confectionery.....	251	30	118	67	17	11	16	2	.....	.....
Copper, tin, and sheet-iron products.....	339	13	178	93	31	10	9	3	2	.....
Cotton goods, including cotton small wares.....	175	1	15	35	48	26	36	11	2	1
Dyeing and finishing textiles.....	135	.....	29	46	32	15	9	3	1	.....
Electrical machinery, apparatus, and supplies.....	84	4	20	24	14	10	8	2	1	1
Flour-mill and gristmill products.....	1,450	359	1,033	53	4	1	.....	.....	.....	.....
Foundry and machine-shop products.....	1,695	83	617	392	253	148	130	43	19	10
Furniture and refrigerators.....	304	14	101	79	58	25	21	6	.....	.....
Gas, illuminating and heating.....	99	7	50	22	12	4	2	.....	1	1
Glass.....	112	.....	1	5	11	25	37	22	9	2
Hats, fur-felt.....	38	2	7	13	6	1	3	5	.....	1
Hosiery and knit goods.....	464	7	39	90	137	95	62	25	8	1
Iron and steel, blast furnaces.....	66	.....	1	5	6	15	22	11	5	1
Iron and steel, steel works and rolling mills.....	189	.....	1	5	12	25	34	40	42	30
Iron and steel pipe, wrought.....	11	.....	1	2	1	2	2	1	.....	2
Leather, tanned, curried, and finished.....	163	7	25	22	24	50	22	10	3	.....
Liquors, distilled.....	88	7	55	17	7	1	.....	.....	.....	.....
Liquors, malt.....	237	1	18	100	88	21	8	1	.....	.....
Lumber and timber products.....	2,667	129	1,612	681	164	51	23	3	4	.....
Marble and stone work.....	596	29	333	119	75	20	9	1	1	.....
Paint and varnish.....	114	8	54	31	9	9	2	1	.....	.....
Paper and wood pulp.....	62	.....	9	15	10	8	13	5	2	.....
Patent medicines and compounds and druggists' preparations.....	367	121	190	42	7	1	3	2	1	.....
Petroleum, refining.....	41	.....	3	13	18	2	3	1	.....	1
Pottery, terra-cotta, and fire-clay products.....	139	4	19	25	33	29	25	4	.....	.....
Printing and publishing.....	2,461	548	1,211	474	137	48	36	6	1	.....
Silk and silk goods, including throwsters.....	226	.....	11	25	45	44	57	31	10	3
Slaughtering and meat packing.....	180	15	88	41	20	10	5	1	.....	.....
Tin plate and terneplate.....	17	.....	2	1	1	5	5	4	.....	.....
Tobacco manufactures.....	2,432	832	990	352	121	63	49	18	6	1
Woolen, worsted, and felt goods, and wool hats.....	217	3	16	31	48	49	47	10	10	3
All other industries.....	6,083	600	2,812	1,434	686	297	165	59	21	9

INDUSTRY.	AVERAGE NUMBER OF WAGE EARNERS.									
	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.
All industries	877,543	.....	29,230	59,872	86,704	97,089	165,376	135,522	120,456	183,294
Boots and shoes, including cut stock and findings.....	10,822	56	409	1,036	1,733	3,329	2,863	1,396	.....	.....
Bread and other bakery products.....	12,221	4,638	2,561	1,171	1,171	1,036	1,092	572	.....	.....
Butter, cheese, and condensed milk.....	1,177	645	247	137	148	.....	.....	.....	.....	.....
Carpets and rugs, other than rag.....	11,510	10	247	763	1,449	1,735	2,088	1,708	3,510	.....
Carriages and wagons and materials.....	7,498	953	2,038	975	953	982	255	.....	1,342	.....
Cars and general shop construction and repairs by steam-railroad companies.....	46,645	30	188	648	1,156	4,869	4,394	11,565	23,795	.....
Cars, steam-railroad, not including operations of railroad companies.....	7,766	.....	14	57	236	521	286	.....	6,652	.....
Cement.....	8,080	.....	29	64	92	1,951	2,334	1,077	2,513	.....
Chemicals.....	3,185	28	137	374	496	374	128	2,022	.....	.....
Clothing, men's, including shirts.....	23,623	490	2,513	6,084	4,211	5,262	2,666	1,331	1,166	.....
Clothing, women's.....	15,701	192	1,631	4,066	3,233	5,113	714	752	.....	.....
Coke.....	15,331	89	556	607	1,769	3,799	3,297	.....	5,214	.....
Confectionery.....	5,408	284	635	610	750	2,516	707	.....	.....	.....
Copper, tin, and sheet-iron products.....	6,815	457	1,039	1,019	621	1,501	898	1,280	.....	.....
Cotton goods, including cotton small wares.....	16,293	61	457	1,758	1,717	5,777	3,912	1,464	1,157	.....
Dyeing and finishing textiles.....	6,086	98	630	1,019	948	1,235	1,261	894	.....	.....
Electrical machinery, apparatus, and supplies.....	11,025	59	293	444	678	1,294	637	537	7,083	.....
Flour-mill and gristmill products.....	2,432	1,709	470	168	85	.....	.....	.....	.....	.....
Foundry and machine-shop products.....	86,821	1,561	4,598	8,260	10,779	20,408	14,928	12,589	13,698	.....
Furniture and refrigerators.....	9,924	272	997	2,097	1,734	3,009	1,815	.....	.....	.....
Gas, illuminating and heating.....	3,119	124	238	455	243	310	.....	.....	1,061	.....
Glass.....	23,710	3	62	442	1,938	5,805	7,811	5,295	2,354	.....
Hats, fur-felt.....	7,220	12	145	191	81	440	1,944	.....	4,395	.....
Hosiery and knit goods.....	38,206	108	1,181	4,738	6,706	9,584	9,299	4,768	1,702	.....
Iron and steel, blast furnaces.....	14,521	5	65	251	1,137	3,988	3,705	3,903	1,527	.....
Iron and steel, steel works and rolling mills.....	126,911	4	65	438	1,804	5,772	13,847	28,855	76,036	.....
Iron and steel pipe, wrought.....	3,873	5	27	24	142	410	430	.....	2,835	.....
Leather, tanned, curried, and finished.....	14,068	57	281	849	3,555	3,119	3,574	2,563	.....	.....
Liquors, distilled.....	734	83	211	226	86	118	.....	.....	.....	.....
Liquors, malt.....	7,234	70	1,440	2,803	1,425	1,193	303	.....	.....	.....
Lumber and timber products.....	26,873	3,780	7,222	5,191	3,474	3,654	979	2,573	.....	.....
Marble and stone work.....	9,264	795	1,444	2,677	2,067	1,434	278	669	.....	.....
Paint and varnish.....	1,992	133	335	207	544	316	457	.....	.....	.....
Paper and wood pulp.....	6,656	25	201	359	580	2,374	1,892	1,315	.....	.....
Patent medicines and compounds and druggists' preparations.....	2,761	352	522	247	52	384	663	541	.....	.....
Petroleum, refining.....	2,900	12	183	678	115	559	289	.....	1,164	.....
Pottery, terra-cotta, and fire-clay products.....	9,003	53	353	1,137	2,123	4,061	1,276	.....	.....	.....
Printing and publishing.....	24,696	3,066	5,012	4,411	3,467	5,663	2,256	821	.....	.....
Silk and silk goods, including throwsters.....	36,469	37	334	1,649	3,395	9,688	10,515	6,861	3,990	.....
Slaughtering and meat packing.....	3,050	222	443	585	678	766	356	.....	.....	.....
Tin plate and terneplate.....	2,346	.....	24	50	391	662	1,210	.....	.....	.....
Tobacco manufactures.....	33,188	2,093	3,813	3,872	4,466	7,656	6,295	3,782	1,211	.....
Woolen, worsted, and felt goods, and wool hats.....	27,409	35	408	1,659	3,595	7,481	3,575	7,299	3,357	.....
All other industries.....	143,047	6,534	16,184	22,508	21,258	25,146	20,602	13,286	17,529	.....

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	3.3	6.8	9.9	11.1	18.8	15.4	13.7	20.9	
Boots and shoes, including cut stock and findings.....	100.0	0.5	3.8	9.6	16.0	30.8	26.5	12.9	.....
Bread and other bakery products.....	100.0	38.0	21.0	9.6	9.4	8.5	8.9	4.7	.....
Butter, cheese, and condensed milk.....	100.0	54.8	21.0	11.6	12.6	.....	.....	.....	.....
Carpets and rugs, other than rag.....	100.0	0.1	2.1	6.6	12.6	15.1	18.1	14.8	30.5	
Carriages and wagons and materials.....	100.0	12.7	27.2	13.0	12.7	13.1	3.4	.....	17.9
Cars and general shop construction and repairs by steam-railroad companies.....	100.0	0.1	0.4	1.4	2.5	10.4	9.4	24.8	51.0	
Cars, steam-railroad, not including operations of railroad companies.....	100.0	.....	0.2	0.7	3.0	6.7	3.7	.....	85.7
Cement.....	100.0	.....	0.4	0.8	1.1	24.1	28.9	13.6	31.1
Chemicals.....	100.0	0.9	4.3	11.7	4.0	15.6	.....	.....	.....
Clothing, men's, including shirts.....	100.0	2.1	10.6	25.8	17.8	22.3	10.9	.....	.....
Clothing, women's.....	100.0	1.2	10.4	25.9	20.6	32.6	4.5	.....	4.9
Coke.....	100.0	0.6	3.6	4.0	11.5	24.8	21.5	.....	.....
Confectionery.....	100.0	5.3	11.7	9.4	14.0	46.5	13.1	.....	34.0
Copper, tin, and sheet-iron products.....	100.0	6.7	15.2	15.0	9.1	22.0	13.2	18.8	.....
Cotton goods, including cotton small wares.....	100.0	0.3	2.8	10.8	10.5	35.5	24.0	9.0	.....
Dyeing and finishing textiles.....	100.0	1.6	10.4	16.7	15.6	20.3	20.7	14.7	7.1	
Electrical machinery, apparatus, and supplies.....	100.0	0.5	2.7	4.0	6.2	11.7	5.8	4.0	64.2	
Flour-mill and gristmill products.....	100.0	70.3	19.3	6.9	3.5	.....	.....	.....	.....
Foundry and machine-shop products.....	100.0	1.8	5.3	9.5	12.4	23.5	17.2	14.5	15.8	
Furniture and refrigerators.....	100.0	2.7	10.0	21.1	17.5	30.3	18.3	.....	.....
Gas, illuminating and heating.....	100.0	4.0	7.6	14.6	7.8	9.9	.....	22.1	34.0
Glass.....	100.0	(¹)	0.3	1.9	8.2	24.5	32.9	22.3	0.9	
Hats, fur-felt.....	100.0	0.2	2.0	2.6	1.1	6.2	26.9	.....	60.9
Hosiery and knit goods.....	100.0	0.3	3.1	12.4	17.8	25.1	24.3	12.6	4.5	
Iron and steel, blast furnaces.....	100.0	(¹)	0.4	1.7	7.8	27.1	25.5	26.9	10.5	
Iron and steel, steel works and rolling mills.....	100.0	(¹)	0.1	0.3	1.5	4.5	10.9	22.7	59.9	
Iron and steel pipe, wrought.....	100.0	0.1	0.7	0.6	3.7	10.6	11.1	.....	73.2
Leather, tanned, curried, and finished.....	100.0	0.4	2.0	6.1	25.4	22.3	25.5	18.3	.....
Liquors, distilled.....	100.0	11.5	29.1	31.2	11.9	16.3	.....	.....	.....
Liquors, malt.....	100.0	1.0	19.9	38.7	19.7	16.5	4.2	.....	.....
Lumber and timber products.....	100.0	14.1	26.9	19.3	12.9	13.6	3.6	9.6	.....
Marble and stone work.....	100.0	8.6	15.6	27.8	22.3	15.5	8.0	7.2	.....
Paint and varnish.....	100.0	6.7	16.8	10.4	27.3	15.9	22.9	.....	.....
Paper and wood pulp.....	100.0	0.4	3.0	5.4	8.7	35.7	27.1	19.8	.....
Patent medicines and compounds and druggists' preparations.....	100.0	12.7	18.9	8.9	1.9	13.9	24.0	19.6	.....
Petroleum, refining.....	100.0	0.4	6.3	19.9	4.0	19.3	10.0	.....	40.1
Pottery, terra-cotta, and fire-clay products.....	100.0	0.6	3.9	12.6	23.6	45.1	14.2	.....	.....
Printing and publishing.....	100.0	12.4	20.3	17.9	14.0	22.9	9.1	3.3	.....
Silk and silk goods, including throwsters.....	100.0	0.1	0.9	4.5	9.3	26.6	28.8	18.8	10.9	
Slaughtering and meat packing.....	100.0	7.3	14.5	19.2	22.2	25.1	11.7	.....	.....
Tin plate and terneplate.....	100.0	.....	1.0	2.1	16.7	28.2	52.0	.....	.....
Tobacco manufactures.....	100.0	6.4	11.5	11.7	13.5	23.1	19.0	11.4	8.8	
Woolen, worsted, and felt goods, and wool hats.....	100.0	0.1	1.5	6.1	18.1	27.3	13.0	26.6	12.2	
All other industries.....	100.0	4.6	11.3	15.7	14.9	17.0	14.4	9.3	12.3	

¹ Less than one-tenth of 1 per cent.

Of the 27,563 establishments reported for all industries, 12.8 per cent employed no wage earners; 47.3 per cent, from 1 to 5; 19.3 per cent, 6 to 20; and 9.5 per cent, 21 to 50. The most numerous single group consists of the 13,040 establishments employing from 1 to 5 wage earners, and the next, of the 5,313 establishments employing from 6 to 20. There were 267 establishments that employed over 500 wage earners, and of these, 89 employed over 1,000, of which 30 were steel works and rolling mills, 13 steam-railroad repair shops, and 10 foundries and machine shops.

Of the total number of wage earners, 50.1 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 over 1,000 wage earners. This group employed 183,294 wage earners, or 20.9 per cent of the total. The average per establishment in this group was 2,059. More than one-half of the total wage earners employed in the following industries were in this class of establishments: Steam-railroad repair shops; steam-railroad car construction shops; electrical machinery, apparatus, and supplies; fur-felt hats; steel works and rolling mills; and wrought iron and steel pipe.

All the individual industries listed in this table but not in the preceding one, with the exception of butter,

cheese, and condensed milk; the carriage and wagon, and the distilled-liquor industries, and marble and stone work are industries in which comparatively large establishments do most of the business, as appears from the classification according to the number of wage earners.

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 next 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 754.

The table shows that for all industries combined 67.2 per cent of the total expenses was incurred for materials, 24 per cent for services—that is, salaries and wages—and but 8.8 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 distilled and malt liquor and tobacco industries are due to the inclusion of internal-revenue taxes. The highest percentage

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shown for materials, 93.8, and the lowest percentage shown for salaries and wages, 3.8, are for flour mills and gristmills, proportions which are due to the comparative simplicity of the mill operations.

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.

The table indicates that the total primary horsepower increased 585,704, or 34.1 per cent, from 1899 to 1904, and 619,149, or 26.9 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, steam power formed the major part of the total power reported, but notwithstanding an increase during the five-year period of 452,344 horsepower, the proportion which this kind of power formed of the total primary power decreased from 90.7 per cent in 1904 to 87 per cent in 1909. The more general use of gas engines in recent years is shown, there being 4,415 such engines, with an indicated capacity of 153,508 horsepower, reported in 1909, as against 2,890 engines with 68,209 horsepower in 1904, and 1,620 engines with 26,246 horsepower in 1899. The figures also show that the practice of renting electric power is increasing rapidly, 145,621 horsepower, or 5 per cent of the total, being of this character in 1909, as compared with 35,701 horsepower, or 1.6 per cent, in 1904, and 22,362 horsepower, or 1.3 per cent, in 1899.

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 having increased from 85,384 in 1899 to 311,096 in 1904 and 719,164 in 1909.

INDUSTRY.	PER CENT OF TOTAL EXPENSES REPORTED.			
	Salaries.	Wages.	Materials.	Miscellaneous expenses.
All industries.....	4.7	19.3	67.2	8.8
Boots and shoes, including cut stock and findings.....	6.3	23.1	65.4	5.1
Bread and other bakery products.....	4.6	16.8	70.2	8.4
Butter, cheese, and condensed milk.....	1.2	4.4	92.0	2.4
Carpets and rugs, other than rag.....	3.4	22.8	64.7	9.1
Carriages and wagons and materials.....	4.6	35.5	52.4	7.5
Cars and general shop construction and repairs by steam-railroad companies.....	3.9	39.7	54.5	1.8
Cars, steam-railroad, not including operations of railroad companies.....	4.6	17.9	70.4	7.2
Cement.....	6.0	22.2	57.8	14.1
Chemicals.....	4.1	14.0	75.5	6.3
Clothing, men's, including shirts.....	4.8	25.5	56.2	13.5
Clothing, women's.....	5.8	24.9	63.3	5.9
Coke.....	2.1	19.0	75.8	3.1
Confectionery.....	6.8	14.8	69.0	9.3
Copper, tin, and sheet-iron products.....	6.2	24.1	62.0	7.6
Cotton goods, including cotton small wares.....	5.4	23.5	62.7	8.4
Dyeing and finishing textiles.....	5.0	29.0	52.9	11.5
Electrical machinery, apparatus, and supplies.....	14.0	22.4	48.7	14.3
Flour-mill and gristmill products.....	0.9	2.9	93.8	2.4
Foundry and machine-shop products.....	8.1	27.8	54.7	9.4
Furniture and refrigerators.....	7.3	28.8	53.8	10.1
Gas, illuminating and heating.....	13.5	16.3	44.6	25.6
Glass.....	5.9	43.2	40.6	10.6
Hats, fur-felt.....	4.3	37.7	50.7	7.4
Hosiery and knit goods.....	3.8	26.8	62.0	7.3
Iron and steel, blast furnaces.....	1.5	6.0	89.6	2.9
Iron and steel, steel works and rolling mills.....	3.0	18.8	72.8	5.4
Iron and steel pipe, wrought.....	2.0	12.9	82.8	2.3
Leather, tanned, curried, and finished.....	1.8	9.2	80.3	8.6
Liquors, distilled.....	2.7	3.1	23.2	71.0
Liquors, malt.....	8.6	14.4	33.4	43.5
Lumber and timber products.....	3.7	28.2	56.8	11.4
Marble and stone work.....	5.9	48.9	37.4	7.8
Paint and varnish.....	7.5	8.7	73.0	10.7
Paper and wood pulp.....	4.7	18.0	65.2	11.3
Patent medicines and compounds and druggists' preparations.....	12.5	10.6	49.3	27.5
Petroleum, refining.....	1.5	3.6	92.2	2.7
Pottery, terra-cotta, and fire-clay products.....	7.9	40.3	38.0	13.8
Printing and publishing.....	15.1	24.6	39.0	21.3
Silk and silk goods, including throwsters.....	3.8	20.6	63.2	12.4
Slaughtering and meat packing.....	1.8	4.0	91.2	3.0
Tin plate and terneplate.....	1.1	5.4	92.2	1.3
Tobacco manufactures.....	4.1	26.4	47.0	22.6
Woolen, worsted, and felt goods, and wool hats.....	2.5	15.4	76.8	5.4
All other industries.....	6.3	19.1	65.4	9.1

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.....	44,204	24,355	23,646	2,921,547	2,302,398	1,716,694	100.0	100.0	100.0
Owned.....	27,213	24,355	23,646	2,757,792	2,243,331	1,678,485	94.4	97.4	97.8
Steam.....	20,764	19,478	19,911	2,541,117	2,088,773	1,587,706	87.0	90.7	92.5
Gas.....	4,415	2,890	1,620	153,508	68,209	26,246	5.3	3.0	1.5
Water wheels.....	1,917	1,872	2,115	53,762	50,220	54,601	1.8	2.2	3.2
Water motors.....	117	115	(²)	1,432	400	(²)	(²)	(²)	(²)
Other.....				7,973	35,729	9,632	0.3	1.6	0.6
Rented.....	16,991	(²)	(²)	163,755	59,067	38,209	5.6	2.6	2.2
Electric.....	16,991	(²)	(²)	145,621	35,701	22,362	5.0	1.6	1.3
Other.....				18,134	23,366	15,847	0.6	1.0	0.9
Electric motors.....	59,089	19,800	4,547	864,785	346,797	107,746	100.0	100.0	100.0
Run by current generated by establishment.....	42,098	19,800	4,547	719,164	311,096	85,384	83.2	89.7	79.2
Run by rented power.....	16,991	(²)	(²)	145,621	35,701	22,362	16.8	10.3	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.

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.	Anthracite coal (tons).	Bituminous coal (tons).	Coke (tons).	Wood (cords).	Oil, including gasoline (barrels).	Gas (1,000 feet).
All industries	4,201,180	57,524,128	14,060,292	448,641	2,037,735	239,745,366
Boots and shoes, including cut stock and findings.....	9,675	8,428	.....	12	325	3,128
Bread and other bakery products.....	77,981	20,424	21,837	10,887	602	876,758
Butter, cheese, and condensed milk.....	15,384	31,957	.....	4,914	248	12,870
Carpets and rugs, other than rag.....	34,750	52,821	.....	4	5	1,700
Carriages and wagons and materials.....	36,240	30,824	1,291	200	1,852	107,446
Cars and general shop construction and repairs by steam-railroad companies.....	255,490	643,881	6,962	7,576	75,081	134,808
Cars, steam-railroad, not including operations of railroad companies.....	34,516	169,365	9,763	.....	47,066	468,862
Cement.....	155,886	1,660,750	168	.....	11,891	.....
Chemicals.....	57,575	208,534	6,008	126	27,378	35,723
Clothing, men's, including shirts.....	15,940	5,037	.....	13	1,505	181,776
Clothing, women's.....	3,135	1,592	.....	.....	26	18,125
Coke.....	.....	36,886,592	13,668	50	.....	348,958
Confectionery.....	10,412	11,618	312	123	6	92,300
Copper, tin, and sheet-iron products.....	11,376	19,276	2,010	212	424	606,245
Cotton goods, including cotton small wares.....	64,645	71,658	.....	.....	82	4,080
Dyeing and finishing textiles.....	69,512	166,532	228	.....	22	5,756
Electrical machinery, apparatus, and supplies.....	3,875	116,955	946	.....	10,223	131,782
Flour-mill and gristmill products.....	34,760	63,485	214	1,722	3,539	125,595
Foundry and machine-shop products.....	201,635	770,178	270,798	9,974	116,179	4,136,380
Furniture and refrigerators.....	13,168	66,582	1,295	244	101	23,952
Gas, illuminating and heating.....	99,297	348,241	79,675	4	948,629	44,298
Glass.....	6,788	453,613	4,093	2,079	34,966	22,605,773
Hats, fur-felt.....	27,520	13,608	.....	.....	85	7,624
Hosiery and knit goods.....	72,667	40,824	.....	41	493	3,521
Iron and steel, blast furnaces.....	267,478	445,710	13,248,651	2,906	14	940,558
Iron and steel, steel works and rolling mills.....	650,587	9,447,159	238,459	25,204	520,604	189,133,015
Iron and steel pipe, wrought.....	64,974	155,665	4,995	75	.....	129,900
Leather, tanned, curried, and finished.....	26,089	279,191	187	6,733	26	393,031
Liquors, distilled.....	5,281	56,430	95	453	1	176,589
Liquors, malt.....	194,562	250,475	576	5	114	1,845,487
Lumber and timber products.....	25,267	99,059	99	1,310	1,796	112,383
Marble and stone work.....	15,465	105,316	39	26	1,386	28,355
Paint and varnish.....	9,821	70,635	1,948	667	447	181,924
Paper and wood pulp.....	98,456	733,072	.....	15,855	2,188	58,259
Patent medicines and compounds and druggists' preparations.....	8,164	4,111	7	96	90	29,276
Petroleum, refining.....	316,138	453,106	.....	.....	64,017	4,827,475
Pottery, terra-cotta, and fire-clay products.....	8,643	711,840	415	701	142	1,432,335
Printing and publishing.....	36,151	11,718	17	93	1,026	408,160
Silk and silk goods, including throwsters.....	148,313	41,746	.....	43	637	5,598
Slaughtering and meat packing.....	26,795	68,697	.....	3,396	266	35,744
Tin plate and terneplate.....	.....	23,537	.....	.....	.....	516,071
Tobacco manufactures.....	14,605	6,356	6	397	112	80,234
Woolen, worsted, and felt goods, and wool hats.....	53,238	210,160	.....	25	1,448	63,802
All other industries.....	914,019	2,388,764	145,530	352,475	161,893	10,223,210

NOTE.—In addition, there were 18,250 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 for some of the important industries in Pennsylvania are here presented.

Iron and steel.—Although iron was made in several of the colonies before its manufacture was attempted in Pennsylvania, the industry had a comparatively early beginning there under the encouragement of William Penn, the founder of the colony, and as early as 1692 a small amount of iron had been made in the colony. The first successful works were established in Berks County in 1716, and in 1728-29 the colony exported 274 tons of pig iron to England. In 1756 Pennsylvania was spoken of as "the most advanced of all the American colonies in regard to its iron works," and since that time it has been preeminent among the states in the iron and steel industry.

At the present time a great variety of products are made of iron and steel and in a census of manufactures the establishments producing them have to be divided into many classes according to the nature of their products. Among the more important classes

established for purposes of the census are: Steel works and rolling mills; blast furnaces; foundries and machine shops; and establishments manufacturing locomotives; horseshoes; wrought iron and steel pipe; forgings; bolts, nuts, washers, and rivets; steel car and carriage springs; cutlery and tools; doors and shutters; nails and spikes; and tin plate and terneplate. A given establishment may manufacture products which fall into two or more of these classes, but as the establishment itself can be placed in only one, it is classified according to its principal product. This method necessarily occasions a certain lack of precision in the figures for any class. An establishment classified as manufacturing forgings, because forgings are its principal product, may also make cutlery and tools or some other product of a different class, and hence the totals for establishments classified under the heading "Iron and steel forgings" include certain amounts which would be credited to some other class if the system was ideal; on the other hand, certain forgings made in establishments engaged primarily in some other line of manufacture are omitted from the totals for the forging industry because manufactured as secondary products by establishments engaged primarily in the manufacture

of a product of another class. In none of the classes mentioned, therefore, do the statistics deal exclusively with the manufacture of the products indicated by the industry designation nor do the data relate to the entire production of such products, owing to the overlapping of the several branches of the industry in so many particulars. Some of the establishments operating blast furnaces, or steel works and rolling mills, engaged also in further processes of manufacture and produce many of the articles made by establishments otherwise classified, and no well-defined line of demarcation exists by which any branch of the industry can be separated from the others. Detailed information regarding materials, products, and equipment is here presented for three of the industries, namely, steel works and rolling mills, blast furnaces, and tin-plate and terneplate dipping establishments.

Steel works and rolling mills.—The manufacture of steel was attempted in Pennsylvania about 1750, but the development of the industry was slow. In 1805 there were only two steel plants in the state, with a combined annual output of about 150 tons. In 1809 the number of furnaces had grown to five, and they produced 531 of the 917 tons of steel manufactured in the United States during that year. Three years later the first steel plant in Pittsburgh was erected, and from that time the quantity of steel manufactured increased rapidly, but the kind made varied considerably until 1859, when crucible cast steel was made in Pittsburgh as a regular product. This really marked the beginning of a new industry. Bessemer steel was first made in Pennsylvania in 1867 at Steelton (the third furnace of the kind in the United States). In the same year the first steel rails ever made in this country were manufactured at Johnstown, Pa.

The first rolling mill in the United States for the production of bar iron was built at Plumsock, Pa., in 1817, and in the same year the first puddling in this country was done at that mill. In 1879 the number of steel works and rolling mills was 158 and the value of their products was 48.4 per cent of the total for the United States. At each census since 1879 the mills of Pennsylvania have reported more than half of the total value of products, the proportion in 1909 being 50.8 per cent. To turn out these products the 189 establishments reported in 1909 employed an average of 126,911 wage earners, which was 52.9 per cent of the total number employed by the 446 steel works and rolling mills in the country as a whole.

The next table gives, for 1909, 1904, and 1899, the quantity and cost of the various materials used by steel works and rolling mills in Pennsylvania; the quantity and value of their different products; the principal equipment of the steel works; and the total daily capacity of the plants. The total quantity of steel is classified according to the form of the products and again according to process of manufacture. The ton of 2,240 pounds is used to show quantities.

MATERIAL, PRODUCT, OR EQUIPMENT.	1909	1904	1899
Materials used, total cost.....	\$329,013,421	\$237,875,025	\$219,047,508
Iron and steel: ¹			
For furnaces and hot rolls:			
Pig iron and ferroalloys—			
Tons.....	9,317,903	6,550,417	5,015,321
Cost.....	\$147,135,383	\$94,937,864	\$87,720,430
Pig iron—			
Tons.....	9,153,260	(²)	(²)
Cost.....	\$139,208,875	(²)	(²)
Ferroalloys, spiegeleisen, ferromanganese, etc.—			
Tons.....	150,643	(²)	(²)
Cost.....	\$7,926,508	(²)	(²)
Scrap, including old rails not intended for rerolling—			
Tons.....	2,669,773	2,871,819	2,157,468
Cost.....	\$41,572,010	\$38,574,391	\$32,927,014
Ingot, blooms, billets, slabs, muck and scrap bar, re-rolling rails, and sheet and tin-plate bars—			
Tons.....	3,013,148	2,734,746	2,328,979
Cost.....	\$68,274,443	\$60,353,171	\$59,421,973
Rolled forms for further manufacture: ³			
Skelp—			
Tons.....	119,365	249,278	(²)
Cost.....	\$3,959,918	\$7,605,688	(²)
Wire rods—			
Tons.....	43,799	27,530	32,170
Cost.....	\$1,244,260	\$800,252	\$1,273,635
Iron ore:			
Tons.....	508,716	423,188	243,688
Cost.....	\$3,169,203	\$1,583,959	\$970,028
All other materials.....	\$63,658,204	\$34,250,700	\$36,734,422
Products, total value.....	\$500,343,995	\$363,773,577	\$332,869,713
Rails:			
Tons.....	848,924	812,691	1,218,289
Value.....	\$24,077,184	\$20,204,210	\$24,537,034
Structural shapes, not including plates used for making girders:			
Tons.....	1,597,946	824,727	766,935
Value.....	\$49,512,361	\$27,449,667	\$25,578,658
Bars and rods, not including wire rods, sheet and tin-plate bars, splice bars, and bars for reinforced concrete:			
Tons.....	1,749,220		1,036,759
Value.....	\$56,717,882		\$43,453,494
Bars for reinforced concrete:			
Tons.....	36,886	1,166,234	
Value.....	\$1,054,652	\$40,425,460	
Wire rods:			
Tons.....	861,261	596,892	276,305
Value.....	\$23,190,920	\$16,926,665	\$11,240,537
Plates and sheets, not including black plates or sheets for tinning, nail and tack plates, tie-plates, fish-plates, or armor plates:			
Tons.....	2,057,176		
Value.....	\$78,938,359		
Black plates, or sheets, for tinning:			
Tons.....	308,738	1,563,154	1,245,843
Value.....	\$15,400,384	\$65,988,409	\$56,984,914
Skelp five and pipe:			
Tons.....	1,087,592		
Value.....	\$34,273,085		
Hoops, bands, and cotton ties:			
Tons.....	279,172	1,259,049	828,050
Value.....	\$8,305,448	\$39,576,046	\$35,398,658
Nail and tack plates:			
Tons.....	37,802	41,931	42,217
Value.....	\$1,469,504	\$1,156,789	\$1,087,103
Axles, car, locomotive, automobile, wagon, carriage, etc., rolled or forged:			
Tons.....	97,333	73,388	81,383
Value.....	\$3,603,095	\$2,415,226	\$3,569,888
Armor plates, gun forgings, and ordnance:			
Tons.....	22,558	22,648	15,302
Value.....	\$8,833,335	\$9,402,082	\$7,520,479
Blooms, billets, and slabs, produced for sale or for transfer to other works of the same company:			
Tons.....	2,099,296		
Value.....	\$47,413,864		
Rolled forging blooms and billets produced for sale or for transfer to other works of the same company:			
Tons.....	37,977	2,582,848	2,277,133
Value.....	\$1,128,594	\$58,205,781	\$51,948,174
Sheet and tin-plate bars produced for sale or for transfer to other works of the same company:			
Tons.....	778,260		
Value.....	\$17,430,702		
Muck and scrap bar produced for sale or for transfer to other works of the same company:			
Tons.....	118,759	111,992	167,165
Value.....	\$3,505,236	\$2,791,435	\$4,901,446

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 and rolled steel valued at \$2,175,339 were produced by establishments engaged primarily in the manufacture of products other than those covered by the industry designation.

MATERIAL, PRODUCT, OR EQUIPMENT.	1909	1904	1899
Products—Continued.			
Rail fastenings, splice bars, tie-plates, fishplates, etc.:			
Tons.....	124,049		
Value.....	\$4,669,802	900,229	356,761
All other rolled steel or iron:		\$22,156,436	\$11,201,989
Tons.....	470,679		
Value.....	\$31,391,361		
Ingots for sale or for transfer to other works of the same company:			
Tons.....	32,144	94,059	84,498
Value.....	\$1,525,021	\$1,850,146	\$2,459,693
Direct steel castings:			
Tons.....	197,405	114,411	69,711
Value.....	\$14,057,422	\$8,041,419	\$5,798,302
All other products, including value added to steel or iron rolling-mill products by further manufacture...	\$73,785,784	\$47,093,806	\$47,123,444
<i>Steel production, tons.</i>			
Total production.....	¹ 12,189,953	7,733,640	6,431,297
Ingots.....	11,992,548	7,618,833	6,361,586
Castings.....	197,405	114,807	69,711
Classified according to process:			
Open-hearth.....	9,281,936	4,230,657	2,437,918
Basic.....	8,536,726	3,638,986	1,746,522
Acid.....	745,210	591,671	691,396
Bessemer.....	2,846,369	3,442,312	3,911,127
Crucible and miscellaneous.....	61,657	60,671	82,252
Equipment:			
<i>Steel plants:</i>			
Steel furnaces and converters, daily capacity, double turn, tons.....	55,278	40,672	31,131
Open-hearth furnaces—			
Number.....	428	305	199
Daily capacity, tons of steel, double turn.....	38,630	23,115	12,745
Basic—			
Number.....	332	205	106
Daily capacity, tons of steel, double turn.....	33,390	17,597	8,404
Acid—			
Number.....	96	100	93
Daily capacity, tons of steel, double turn.....	4,730	5,518	4,341
Converters, Bessemer or modified Bessemer—			
Number.....	31	28	33
Daily capacity, tons of steel, double turn.....	16,615	16,909	17,977
Crucible furnaces—			
Number.....	91	96	65
Number of pots that can be used at a heat.....	2,268	1,978	1,856
Daily capacity, tons of steel, double turn.....	561	585	469
All other steel furnaces—			
Number.....	14	18	(²)
Daily capacity, tons of steel, double turn.....	72	63	(²)
Metal mixers—			
Number.....	26	(²)	(²)
Capacity, tons.....	5,660	(²)	(²)
<i>Rolling mills:</i>			
Daily capacity of rolled steel and iron, double turn, tons.....	72,977	52,466	48,364

¹ In addition, 16,655 tons of steel castings were produced by establishments engaged primarily in the manufacture of products other than those covered by the industry designation.

² Not reported.

Under steel production is included the total product of steel works, whether cast in ingots or in direct castings. All ingots are included, whether consumed in the works where produced, transferred to other works of the producing company, or sold.

Establishments which are classified as steel works and rolling mills make four classes of products—(1) unrolled steel; (2) those which must be subjected to further rolling before they can be regarded as finished rolling-mill products; (3) those which have passed through all the contemplated rolling processes and may be termed finished rolling-mill products; and (4) those which have been subjected to processes beyond the rolling-mill stage. In the above 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 acquired through their manufacture beyond the rolling-mill product stage has been included with "All other products."

The existence of the second and third classes of products in the industry, namely, the finished rolled products and the unfinished rolled products, results in a certain amount of duplication in the figures for cost of materials and value of products. When crude iron or steel is worked up into partially rolled products in one steel-making and rolling-mill plant and the products are then sold or transferred to a second, where they are 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 one 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 total cost of materials used in this industry in 1909 was \$329,013,421, which was 38.3 per cent more than the cost of materials in 1904 and 50.2 per cent more than the cost in 1899. The cost of pig and scrap iron, ore, and the partially manufactured forms of iron combined constituted 80.6 per cent of the total cost of materials in 1909, as compared with 85.6 per cent in 1904 and 83.2 per cent in 1899.

The total value of products increased from \$332,869,713 in 1899 to \$500,343,995 in 1909, or 50.3 per cent. The general business depression beginning in 1903 affected this industry also for the greater part of 1904. Consequently, a gain of only 9.3 per cent in total value of products is shown for that year as compared with 1899. Comparing the finished rolled products of 1909 with those of 1899, rails show a decrease in both quantity and value, and nail and tack plates a decrease in quantity but an increase in value. All other finished rolled products show an increase in both quantity and value.

The decrease in the production of rails in Pennsylvania for the decade was 369,365 tons, or 30.3 per cent, while the industry in the country at large shows an increase of 607,262 tons, or 27 per cent. Bars and rods, including wire rods, with an increase of 1,334,213

tons, or 101.6 per cent, made the largest absolute gain in quantity from 1899 to 1909, while plates and sheets, with an increase of \$37,353,829, or 65.6 per cent, made the largest absolute gain in value. Muck and scrap bar produced for sale or transfer decreased 29 per cent in quantity and 28.5 per cent in value. Ingots produced for sale or transfer show a decrease of 62 per cent in quantity and 38 per cent in value, while direct steel castings show large relative increases, 183.2 per cent in quantity and 143 per cent in value.

The increase for the decade of \$26,662,340, or 56.6 per cent, in the value of all other products, which includes the value added to rolling-mill products by further manufacture, indicates an extension of the practice of carrying the processes of manufacture beyond the rolling-mill stage. Included in this item was the value added to skelp in the manufacture of 654,042 tons of pipe and tubes. The value of such pipe and tubes was \$36,929,123, and the assigned value of skelp used in their production was \$20,179,114, making approximately \$16,750,000 added by further manufacture of skelp alone.

The total production of steel in the state of Pennsylvania in 1909 was 12,189,953 tons, an increase over 1899 of 5,758,656 tons, or 89.5 per cent. Of the total production in 1909, 11,992,548 tons, or 98.4 per cent, were in the form of ingots and 197,405 tons, or 1.6 per cent, in the form of direct castings. The figures classifying the steel according to process of manufacture show that open-hearth steel formed 76.1 per cent of the total; Bessemer, 23.4 per cent; and crucible and miscellaneous, five-tenths of 1 per cent. Of the open-hearth steel 92 per cent was basic and 8 per cent acid. The proportion of open-hearth steel was 54.7 per cent in 1904 and 37.9 per cent in 1899. In 1909 the quantity of Bessemer steel was 17.3 per cent less than in 1904, in which year the production was 12 per cent less than in 1899. Crucible and miscellaneous steel, although showing a slight increase in 1909 over 1904, show a considerable decrease from 1899 to 1909. The figures thus indicate a growing use of the open-hearth process.

The daily capacity of the steel plants of Pennsylvania increased from 31,131 tons in 1899 to 40,672 tons in 1904, and to 55,278 tons in 1909, an increase of 77.6 per cent for the decade. Of the total daily capacity of the steel plants in 1909, open-hearth furnaces contributed 68.8 per cent; Bessemer and modified Bessemer converters, 30 per cent; and crucible and all other furnaces, 1.1 per cent. Corresponding figures for 1899 were: Open-hearth, 40.9 per cent; Bessemer, 57.7 per cent, and crucible, 1.3 per cent. At the census of 1909, metal mixers were first reported and the number returned was 26, with an aggregate capacity of 5,660 tons. During the decade the daily capacity of the rolling mills, on double turn, increased from 48,364 tons to 72,977 tons, or 50.9 per cent.

Blast furnaces.—In 1791 there were 16 blast furnaces in Pennsylvania. By 1849 the number had increased to 298, of which 230 were charcoal furnaces, 57 anthracite, and 11 bituminous coal or coke. Since 1849 the manufacture of charcoal iron has declined. In 1909 the active furnaces included but 4 small charcoal furnaces, 24 anthracite furnaces, and 115 coke furnaces. In 1879, 137 establishments were reported as operating blast furnaces in Pennsylvania and they produced 1,723,492 of the 3,375,912 long tons of pig iron made in the United States. The proportion which the state contributed to the total was therefore a little more than 51 per cent. A decreasing proportion has since been shown at each census period, although up to and including the last census its output has been more than double that of its nearest competitor. During this period the total annual output for the country has increased over 650 per cent.

In the next table are shown, for 1909, 1904, and 1899, the quantity and cost of the various materials used, the quantity and value of the different products, and the principal equipment of the establishments engaged in this branch of the iron and steel industry. The total quantity of pig iron manufactured is classified in four ways—(1) according to the fuel used in its production; (2) according to the disposition made of it; (3) according to grade; and (4) according to method of delivery or of casting. The ton of 2,240 pounds is used to show quantities.

In 1909 there were charged into the blast furnaces of Pennsylvania 20,822,023 tons of iron ore, mill cinder, scrap, etc., and 5,819,912 tons of flux. To convert this material, 12,095,186 tons of fuel were consumed. The principal product was 10,911,676 tons of pig iron, valued at \$167,588,407, but other products to the value of \$990,006 were reported. This work was accomplished by 143 active furnaces, with an aggregate daily capacity of 41,557 tons.

The figures for the pig iron classified according to fuel used in the production, show that coke pig iron constituted 94 per cent of the total, anthracite 6 per cent, and charcoal less than three-hundredths of 1 per cent. This is particularly striking when it is remembered that in the beginning of the industry charcoal was used exclusively. The figures concerning method of disposition show that 69.9 per cent of the iron was used in works of the company producing it, and 30.1 per cent was made for sale. Bessemer iron constituted 34.6 per cent of the total amount produced; basic, 44.1 per cent; foundry, 14.1 per cent; and all other, 7.1 per cent. Fifty-four per cent of the total was delivered in molten condition; 26 per cent was machine cast; 17.5 per cent was sand cast; 2.5 per cent was chill cast; and less than one-tenth of 1 per cent was in the form of direct castings.

MATERIAL, PRODUCT, OR EQUIPMENT.	1909	1904	1899
Materials used, total cost.....	\$142,074,028	\$86,321,875	\$64,095,277
Iron ore:			
Tons.....	19,698,996	12,919,590	11,056,833
Cost.....	\$90,171,795	\$54,381,825	\$35,042,178
Domestic—			
Tons.....	18,421,398	12,537,891	10,641,035
Cost.....	\$82,790,018	\$51,563,980	\$32,294,561
Foreign—			
Tons.....	1,277,598	381,699	415,798
Cost.....	\$7,381,777	\$2,817,839	\$2,747,617
Mill cinder, scrap, etc.:			
Tons.....	1,123,027	1,161,063	1,108,607
Cost.....	\$3,332,335	\$2,169,422	\$2,686,743
Flux:			
Tons.....	5,819,912	3,842,184	3,371,405
Cost.....	\$5,298,591	\$3,350,725	\$2,264,666
Fuel¹:			
Coke—			
Tons (2,000 pounds).....	13,245,622	8,713,116	6,254,301
Cost.....	\$33,556,780	\$22,728,319	\$15,576,340
Anthracite coal—			
Tons.....	264,481	468,731	765,707
Cost.....	\$900,607	\$1,599,655	\$1,913,385
Charcoal—			
Bushels.....	476,799	410,610	787,606
Cost.....	\$43,469	\$27,225	\$47,256
Bituminous coal—			
Tons.....		300,043	257,194
Cost.....		\$466,806	\$255,313
All other materials.....	\$3,765,245	\$1,591,898	\$6,309,396
Products, total value.....	\$168,578,413	\$107,455,267	\$101,575,487
Pig iron:			
Tons.....	10,911,676	7,729,278	6,778,584
Value.....	\$167,588,407	\$107,395,757	\$101,555,787
All other products.....	\$990,006	\$59,510	\$19,700
Pig iron, classified according to fuel used:			
Coke—			
Tons.....	10,259,155		
Value.....	\$156,834,660	7,729,278	6,778,584
All other—			
Tons.....	682,521	\$107,395,757	\$101,555,787
Value.....	\$10,753,747		
Pig iron, classified according to disposition:			
Produced for consumption in works of company producing—			
Tons.....	7,628,653	5,573,898	(²)
Value.....	\$115,422,575	\$77,087,537	(²)
Produced for sale—			
Tons.....	3,283,023	2,155,380	(²)
Value.....	\$52,155,832	\$30,368,220	(²)
Pig iron, classified by grades (tons):			
Bessemer (0.04 to 0.10 per cent in phosphorus).....	3,775,728	4,457,613	4,617,969
Low phosphorus (below 0.04 per cent in phosphorus).....	137,521	139,763	
Basic.....	4,815,840	1,827,121	666,580
Foundry.....	1,542,722	796,740	856,472
Forge or mill.....	395,808	313,301	446,328
Malleable Bessemer.....	37,642	12,497	(²)
White, mottled, and miscellaneous.....	51,916	12,121	50,077
Direct castings.....	4,563	2,041	4,350
Spiegeleisen, ferromanganese, and ferrosilicon, including Bessemer ferrosilicon (7 per cent and over in silicon).....	178,936	167,181	136,799
Pig iron, classified by method of delivery or casting (tons):			
Delivered in molten condition.....	5,887,507	3,579,501	(²)
Machine cast.....	2,837,576	2,376,870	(²)
Sand cast.....	1,907,514	1,490,312	(²)
Chill cast.....	274,510	279,654	(²)
Direct castings.....	4,563	2,941	
Equipment:			
Furnaces in active establishments:			
Completed stacks at end of year—			
Number.....	145	131	136
Daily capacity, tons.....	41,707	34,200	23,497
Active during the year—			
Number.....	143	120	127
Daily capacity, tons.....	41,557	(²)	(²)
In course of construction at end of year—			
Number.....	5	11	5
Daily capacity, tons.....	2,200	1,950	2,700
Pig casting machines, number.....	56	(²)	(²)
Granulated slag pits:			
Number.....	39	15	(²)
Annual capacity, tons.....	2,703,000	(²)	(²)
Gas engines operated with blast-furnace gas:			
Number.....	13	(²)	(²)
Horsepower.....	32,100	(²)	(²)

¹ In 1909 includes fuel for smelting only; in 1904 and 1899 includes coal for steam raising.
² Not reported.

The growth of the industry for the decade covered by the table was marked, the quantity of ore used increasing 78.2 per cent; the total quantity of iron produced, 61 per cent; and the total value of products, 66 per cent. During the decade 1899-1909 the number of furnaces in active establishments increased from 136 to 145, or 6.6 per cent, and the daily capacity of the furnaces from 23,497 tons to 41,707, or 77.5 per cent, indicating the building of furnaces of much greater capacity. An interesting point to be noted in the report of equipment for 1909 is that 13 gas engines, operated with blast-furnace gas, and developing a total of 32,100 horsepower, were in use.

Tin plate and terneplate.—Closely allied to the operation of steel works and rolling mills is the plating of iron and steel sheets with tin or alloys of tin and lead, inasmuch as practically all the concerns engaged in this industry also roll the greater portion of the iron or steel sheets used. Prior to 1889 the industry was of minor importance, but by 1899 it had assumed such proportions that in the Twelfth Census reports it was for the first time classed as a separate industry. In the manufacture of these products Pennsylvania ranks first among the states, reporting more than 50 per cent of the total product of the United States in 1909. In the following table are given for 1909, 1904, and 1899 the quantity and cost of the various materials used and the quantity and value of the different products:

MATERIAL OR PRODUCT.	1909	1904	1899
Materials used, total cost.....	\$22,898,352	\$17,590,077	\$10,364,084
Black plates or sheets:			
Pounds.....	705,748,494	566,744,792	323,985,402
Cost.....	\$15,801,297	\$12,934,377	\$7,881,339
Coating metals:			
Pounds.....	20,269,205	16,809,190	12,158,406
Cost.....	\$5,305,175	\$3,933,001	\$2,025,532
Tin, including tin contents of terne mixture purchased, lbs.....	17,348,711	13,796,940	8,154,969
Lead, including lead contents of terne mixture purchased, lbs.....	2,920,494	3,012,247	4,003,431
In condition purchased:			
Pig tin—			
Pounds.....	16,858,292		
Cost.....	\$5,032,023		
Pig lead—			
Pounds.....	1,421,219	(¹)	(¹)
Cost.....	\$62,338		
Terne mixture—			
Pounds.....	1,989,694		
Cost.....	\$210,814		
All other materials.....	\$1,791,880	\$722,609	\$457,213
Products, total value.....	\$25,234,066	\$19,341,961	\$12,530,991
Tin plate and terneplate:			
Pounds.....	695,377,287	583,599,140	334,008,936
Value.....	\$23,750,750	\$18,928,397	\$12,401,232
Tin plate—			
Pounds.....	648,502,133	524,905,922	256,879,332
Value.....	\$21,687,492	\$16,547,120	\$9,137,483
Terneplate—			
Pounds.....	46,875,154	58,693,218	77,129,604
Value.....	\$2,063,258	\$2,381,277	\$3,263,709
Other sheet iron or sheet steel, tinned or terneplated, taggers' tin, etc.:			
Pounds.....	18,067,567	6,555,855	200,473
Value.....	\$484,211	\$217,476	\$6,492
All other products.....	\$999,105	\$190,088	\$123,247

¹ Figures not available.
² Excluding the product of one establishment engaged primarily in the manufacture of products other than those of the industry designation.

The industry shows a large gain during the 10-year period covered by the table, the total cost of materials

and the total value of products practically doubling. The basic material, black plates or sheets, shows a large increase for both five-year periods, while of the coating metals, tin shows a large increase and lead a large decrease. The changes in the proportions of these two plating materials are reflected in the quantities of tin plate and of terneplate produced, the former showing a large increase and the latter a large decrease for each half of the decade. In 1899, 285 tin and terne sets were reported, with a daily capacity, on single turn, of 1,198,001 pounds, while in 1909 the number was 311 and the capacity 1,533,872 pounds. The daily capacity of the sets, as they were operated—that is, on single, double, or triple turn, as the case might be—was 3,618,308 pounds in 1909.

Textiles.—The relative importance of the different textile industries in Pennsylvania, as measured by value of products, is shown in the following table, which presents the total value of their products at the last three censuses.

INDUSTRY.	1909	1904	1899
Total	\$267,840,579	\$194,214,389	\$163,286,938
Woolen, worsted, and felt goods, and wool hats.....	77,446,906	55,934,250	48,765,445
Silk and silk goods, including throwsters.....	62,061,302	39,333,520	31,072,926
Hosiery and knit goods.....	49,657,506	30,812,211	21,929,426
Cotton goods, including cotton small wares.....	33,917,033	26,299,853	25,447,097
Carpets and rugs, other than rag.....	24,879,232	27,120,311	23,113,058
Hats, fur-felt.....	13,022,617	7,350,311	4,243,352
Cordage and twine and jute and linen goods.....	4,804,775	5,159,654	7,266,143
Shoddy.....	2,051,118	2,204,279	1,448,886

The progress of the textile industries in the state is reflected, to a large extent, by the increases or decreases in the number of spindles, looms, knitting machines, and other equipment. The following table shows the number of the principal machines used in the combined industries and in each of the five main branches for 1909, 1904, and 1899:

MACHINE.	Cen- sus.	Total.	Woolen, worsted, and felt goods, and wool hats.	Silk and silk goods, including throw- sters.	Hosiery and knit goods.	Cotton goods, includ- ing cotton small wares.	Carpets and rugs, other than rag.
Producing spindles	1909	1,971,907	642,430	1,017,992	33,648	252,671	25,166
	1904	1,707,116	590,916	785,113	25,122	266,347	39,618
	1899	1,532,521	521,726	638,851	30,624	306,037	34,683
Looms.....	1909	63,038	11,420	26,249	.....	19,404	5,965
	1904	53,165	9,848	19,336	.....	17,250	6,781
	1899	47,838	10,681	12,949	133	17,499	6,576
Knitting machines	1909	44,960	.....	.....	44,960	.....	.....
	1904	33,816	.....	.....	33,816	.....	.....
	1899	26,120	.....	.....	26,120	.....	.....
Woolen cards (sets)	1909	947	840	.....	35	.....	72
	1904	971	856	.....	39	.....	76
	1899	1,293	1,170	.....	31	.....	92
Wool-combing ma- chines.	1909	354	342	.....	.....	.....	12
	1904	377	349	.....	.....	.....	28
	1899	357	340	.....	.....	.....	17

The total number of producing spindles increased from 1,532,521 in 1899 to 1,707,116 in 1904 and 1,971,907 in 1909, an increase during the decade of 439,386 spindles, or 28.7 per cent. The largest gain, 379,141, was in the silk mills, and the next largest,

120,704, was in the woolen and worsted mills. The number of producing spindles in the knitting mills increased only slightly, while that in the cotton mills actually decreased 53,966, and that in the carpet and rug mills, 9,517. In addition to the spindles shown in the table, 16,788 were in active use during 1909 in establishments manufacturing cordage and twine and jute and linen goods, and 425 in establishments engaged primarily in the manufacture of shoddy. In this connection attention is called to the fact that the spindle capacity of the mills in Pennsylvania is small in comparison with that in some other states, and small in comparison with the magnitude of the industry there, because in that state the establishments are engaged principally in the final processes of manufacture. To such an extent is this the fact that the state furnishes the largest market in this country for the sale of cotton yarns.

The increase in the number of looms during the decade was 15,200, or 31.8 per cent, the major part of which (13,300) occurred in the silk mills. The number of looms in cotton mills increased 1,905, while that in woolen and worsted mills increased 739. This latter increase, however, was due entirely to an increase of 2,224 looms on worsted goods, as the number on woolen goods decreased 1,485. The number of looms engaged in the manufacture of carpets and rugs increased during the five-year period 1899-1904, but shows a decrease of 611 for the decade. The increase in the number of knitting machines from 26,120 in 1899 to 44,960 in 1909, or 72.1 per cent, corresponds with the increase in the production of hosiery and knit goods. The number of woolen cards decreased, owing to the decline in the manufacture of woolen goods. The number of combing machines increased during the five-year period 1899-1904, but a loss is shown for the following five-year period, making a slight decrease for the decade.

Woolen, worsted, and felt goods, and wool hats.—The woolen industry in Pennsylvania was established by the English settlers in Philadelphia soon after the founding of the colony. It was characterized for many years by the number of small independent factories and the extent of hand-loom weaving. The state, and especially that part embraced by the present limits of the city of Philadelphia, has always ranked high in this industry. The next table shows the quantity and cost of the principal materials used during 1909, 1904, and 1899.

The total cost of the materials used in this industry in 1909 was \$54,634,085, an increase over the amount reported for 1899 of \$23,270,224, or 74.2 per cent. In 1909 the cost of wool constituted 49.9 per cent of the total cost of materials used, which was practically the same as the proportion in 1899 (49.7 per cent). The total quantity of wool in condition purchased increased from 61,594,080 pounds in 1899 to 101,256,902 pounds in 1909, or 64.4 per cent, and the cost from \$15,596,216

to \$27,262,676, or 74.8 per cent. Domestic wool represented 52.9 per cent of the total quantity in 1899 and 56 per cent in 1909. The quantity of animal hair used shows a decrease of 4.7 per cent in 1909 as compared with 1899 and of 28.7 per cent in 1909 as compared with 1904. A large portion of the animal hair reported for this industry is used in the production of yarns for the carpet and rug mills, and hence the decrease may be accounted for, at least in part, by the decline in the production of ingrain carpets. The quantity of tailor's clippings and rags and of shoddy purchased decreased, owing to the decline in the woolen branch of the industry, where the main part of these materials are used. The quantities of raw cotton and of cotton yarn purchased by the woolen branch of the industry also decreased for the same reason. The consumption of cotton yarn in the worsted branch, however, increased substantially, rising from 2,685,332 pounds in 1899 to 6,973,960 pounds in 1909. Worsteds yarn purchased increased in quantity 7,191,407 pounds, or 129.9 per cent, and in value \$7,970,466, or 204.5 per cent, while tops increased in quantity about 350 per cent and in value about 420 per cent. These large increases from 1899 to 1909 in tops and in worsteds yarn purchased indicate not only a growth in the manufacture of worsteds goods, but also an extension of the practice of conducting the different processes of this branch of the industry in separate establishments.

MATERIAL.	1909	1904	1899
Total cost	\$54,634,085	\$37,246,755	\$31,363,861
Wool:			
Foreign (in condition purchased)—			
Pounds.....	44,575,257	37,637,091	28,994,095
Cost.....	\$11,627,768	\$8,180,738	\$5,779,205
Domestic (in condition purchased)—			
Pounds.....	56,681,645	52,543,138	32,599,985
Cost.....	\$15,634,908	\$12,686,241	\$9,817,011
Equivalent in scoured condition,			
pounds.....	65,555,136	55,790,525	48,302,782
Tailors' clippings, rags, etc.:			
Pounds.....	7,794,521	14,781,589	(¹)
Cost.....	\$239,012	\$613,067	\$459,586
Shoddy:			
Pounds.....	4,645,405	5,070,444	6,136,770
Cost.....	\$499,133	\$705,280	\$704,050
Waste and noils:			
Pounds.....	5,716,904	4,360,585	5,721,017
Cost.....	\$1,448,961	\$669,210	\$1,180,286
Tops:			
Pounds.....	2,445,813	1,163,036	547,353
Cost.....	\$1,530,809	\$596,501	\$293,014
Animal hair:			
Pounds.....	18,776,578	26,329,507	19,698,817
Cost.....	\$900,431	\$1,529,873	\$1,108,649
Cotton:			
Pounds.....	5,017,601	5,659,285	12,322,020
Cost.....	\$536,262	\$625,062	\$869,452
Yarns, purchased:			
Woolen—			
Pounds.....	143,884	1,303,215	2,289,016
Cost.....	\$106,540	\$587,904	\$932,498
Worsted—			
Pounds.....	12,728,111	6,605,049	5,536,704
Cost.....	\$11,868,802	\$5,012,439	\$3,898,336
Merino—			
Pounds.....	1,658,124	1,779,805	3,272,029
Cost.....	\$223,853	\$349,975	\$560,000
Cotton—			
Pounds.....	11,969,645	7,191,952	12,102,914
Cost.....	\$2,801,570	\$1,614,349	\$2,273,305
Silk and spun-silk—			
Pounds.....	50,698	50,132	49,974
Cost.....	\$278,289	\$268,495	\$215,609
All other—			
Pounds.....	998,000	335,186	1,055,824
Cost.....	\$20,729	\$6,615	\$61,100
Chemicals and dyestuffs.....	\$668,653	\$723,397	\$815,047
Fuel and rent of power.....	\$78,043	\$630,263	\$482,380
All other materials.....	\$5,970,832	\$2,547,359	\$1,924,333

¹ Not reported.

The quantity and value of the principal products returned for 1909, 1904, and 1899 are given in the following table:

PRODUCT.	1909	1904	1899
Total value	\$77,446,996	\$55,934,250	\$48,765,445
All-wool woven goods:			
Square yards.....	33,149,873	26,622,510	19,498,413
Value.....	\$22,653,317	\$16,102,706	\$10,776,645
Woolen suitings and overcoatings—			
Square yards.....	1,735,118	2,341,754	3,064,746
Value.....	\$1,266,236	\$2,058,448	\$2,363,841
Worsted suitings and overcoatings—			
Square yards.....	9,191,981	7,864,728	5,092,303
Value.....	\$7,692,570	\$5,652,400	\$3,346,842
Worsted dress goods—			
Square yards.....	18,492,858	11,602,226	5,812,516
Value.....	\$11,247,377	\$6,305,829	\$2,745,199
Flannels for underwear—			
Square yards.....	796,097	436,723	633,091
Value.....	\$430,876	\$120,696	\$238,201
Blankets—			
Square yards.....	1,424,062	1,395,707	1,463,544
Value.....	\$1,163,048	\$506,609	\$554,913
All other—			
Square yards.....	1,569,757	2,921,372	3,432,212
Value.....	\$803,210	\$1,398,814	\$1,527,649
Cotton-mixed woven goods:			
Square yards.....	5,104,428	14,026,477	17,389,245
Value.....	\$2,070,669	\$5,797,114	\$5,895,384
Unions, tweeds, cassimeres, etc.—			
Square yards.....	3,344,826	8,058,592	12,049,057
Value.....	\$1,255,914	\$2,782,678	\$3,875,522
All other—			
Square yards.....	1,759,602	5,340,885	5,340,188
Value.....	\$814,755	\$3,014,436	\$2,019,862
Cotton-warp woven goods:			
Square yards.....	30,735,963	19,452,881	31,460,590
Value.....	\$10,570,357	\$4,968,927	\$7,921,126
Wool-filling cassimeres, tweeds, suitings, etc.—			
Square yards.....	10,080,033	4,813,757	8,162,477
Value.....	\$3,562,508	\$1,457,164	\$2,285,377
Worsted-filling cassimeres, tweeds, suitings, etc.—			
Square yards.....	8,347,362	3,859,898	631,131
Value.....	\$3,996,018	\$913,490	\$331,010
Cotton-warp blankets—			
Square yards.....	3,398,778	2,993,200	6,665,804
Value.....	\$633,948	\$359,682	\$901,634
All other—			
Square yards.....	8,909,790	7,786,026	16,001,178
Value.....	\$2,377,883	\$2,228,591	\$4,313,105
Felt cloths, endless belts, hair felting, and other felts	\$611,688	\$367,198	\$160,633
Hats, wool-felt:			
Dozens.....	303,398	158,585	279,768
Value.....	\$1,431,342	\$647,064	\$1,009,565
Partly manufactured products for sale:			
Woolen yarn—			
Pounds.....	25,211,815	37,044,638	29,161,976
Value.....	\$5,965,431	\$7,102,619	\$5,270,265
Worsted yarn—			
Pounds.....	28,656,142	23,371,803	16,813,647
Value.....	\$23,978,942	\$16,228,172	\$11,811,113
Merino yarn—			
Pounds.....	11,710,956	5,663,160	12,294,674
Value.....	\$4,180,974	\$1,202,628	\$2,691,468
Worsted tops and slubbing—			
Pounds.....	2,252,927	550,525	(¹)
Value.....	\$1,401,562	\$330,708	(¹)
Noils—			
Pounds.....	6,006,239	3,888,629	2,984,381
Value.....	\$1,895,601	\$1,186,447	\$793,279
Waste—			
Pounds.....	5,236,102	4,759,554	725,532
Value.....	\$580,466	\$329,565	\$109,466
Amount received for contract work	\$748,822	\$366,808	\$465,175
All other products	\$1,347,825	\$1,224,116	\$1,797,326

¹ Included in worsteds yarn.

The total value of all products for the combined industry was \$77,446,996 in 1909, as compared with \$48,765,445 in 1899, representing a gain of \$28,681,551, or 58.8 per cent, during the decade. The value of products of the woolen branch of the industry, however, decreased about one-third, from \$25,389,344 in 1899 to \$16,033,077 in 1909, while the value of products of the worsteds branch increased from \$22,109,392 in 1899 to \$59,416,106 in 1909. These figures show very forcibly the decline in the woolen branch of the industry and the marked growth in the worsteds branch. The disparity between these two main branches of the industry would be greater were it not for the manufac-

ture of carpet yarns, the value of which forms a considerable portion of the total value of products of the woolen branch.

One of the striking features of the table is the steady increase from census to census in the production of all-wool woven goods. The output of such goods increased from 19,498,412 square yards, valued at \$10,776,645, in 1899, to 33,149,873 square yards, valued at \$22,653,317, in 1909, a gain of 70 per cent in quantity and of 110.2 per cent in value. The largest part of this gain was in worsted dress goods, although worsted suitings and overcoatings increased substantially. The production of cotton-mixed goods, which are more generally manufactured in the woolen branch of the industry, decreased from 17,389,245 square yards in 1899 to 5,104,428 square yards in 1909, a loss of 70.6 per cent for the decade. Cotton-warp woven goods show a small decrease in quantity between 1899 and 1909, but their value increased from \$7,921,126 to \$10,570,357. Worsted-filling cassimeres, tweeds, suitings, etc., show a very large increase, from 631,131 square yards in 1899 to 8,347,362 square yards in 1909. There was also a gain in wool-filling cassimeres, tweeds, suitings, etc., but a marked decrease in all other kinds of cotton-warp goods.

During the decade there was a decline in the quantity of woolen yarn and merino yarn manufactured for sale, and a large increase in the quantity of worsted yarn, the amount of this class of products being 16,813,647 pounds in 1899 and 28,656,142 pounds in 1909. Noils and waste sold as such show great increases, due almost entirely to the growth in the manufacture of worsted goods. The manufacture of wool-felt hats in the state shows some gain during the 10-year period, but the rate of increase was greater in the value than in the quantity of the output.

Silk and silk goods, including throwsters.—The silk industry was established in Pennsylvania in 1793, the products manufactured being fringes, coach laces, and tassels. For many years the products were limited to these goods and to ribbons and various trimmings. In recent years, however, the manufacture of broad silks has been taken up and the industry has developed rapidly. The state leads in the throwing of silk. It should be noted that much of the throwing is done on contract for establishments engaged in weaving and only the amount of the commission is included in the value of products of the establishments in such instances. If allowance were made for the value of the silk thrown on commission, Pennsylvania would take first place in the silk industry as a whole.

The next table shows the quantity and cost of materials used and the quantity and value of products manufactured for 1909, 1904, and 1899.

Raw silk purchased was the most important material in cost, contributing about three-fifths of the total for all materials used during each year, and shows a gain of \$7,672,585, or 56.7 per cent, during the decade.

Spun silk and organzine and tram also made gains. The total value of products practically doubled during the 10-year period. Broad silks, of which plain and fancy silks formed almost two-thirds in 1909, increased in quantity from 26,853,449 yards to 65,569,386 yards, or 144.2 per cent. The increase in ribbons is notable, as the value more than doubled. In 1899, \$1,070,133 were received for contract work, but in 1909 the amount was \$4,416,978, nearly all of which represented receipts for the throwing of silk on commission. In 1909, 7,733,016 pounds of silk were thrown on commission in the state, representing 60.6 per cent of the total quantity of silk thrown on contract in the United States. Of this amount, 4,150,688 pounds were thrown into organzine and 3,582,328 pounds into tram.

MATERIAL OR PRODUCT.	1909	1904	1899
Materials used, total cost.....	\$35,165,571	\$24,287,122	\$19,884,869
Silk:			
Raw—			
Pounds.....	5,532,973	3,970,044	3,238,285
Cost.....	\$21,206,972	\$15,419,221	\$13,534,387
Spun—			
Pounds.....	695,067	454,074	477,543
Cost.....	\$1,566,914	\$376,485	\$979,506
Artificial—			
Pounds.....	127,486	127,192	526
Cost.....	\$273,646	\$394,126	\$3,115
Organzine and tram—			
Pounds.....	1,719,952	1,202,805	871,235
Cost.....	\$7,531,045	\$5,390,466	\$3,701,840
Yarns, other than silk:			
Cotton—			
Pounds.....	2,869,000	2,591,135	1,759,759
Cost.....	\$1,077,157	\$665,915	\$403,812
Mercurized cotton—			
Pounds.....	309,063	227,944	30,070
Cost.....	\$224,029	\$168,025	\$23,121
Wool—			
Pounds.....	83,075	48,870	8,717
Cost.....	\$98,340	\$47,969	\$5,743
Other:			
Pounds.....	186,170	53,453	78,023
Cost.....	\$167,214	\$74,202	\$59,742
Chemicals and dyestuffs.....	\$53,089	\$26,363	(1)
Fuel and rent of power.....	\$495,850	\$317,231	\$174,388
All other materials.....	\$2,481,315	\$887,029	\$937,215
Products, total value.....	\$62,061,302	\$39,338,520	\$31,072,926
Organzine and tram, for sale:			
Pounds.....	1,642,004	1,396,424	1,723,791
Value.....	\$7,475,327	\$6,124,717	\$8,011,155
Machine twist, sewing, embroidery, and wash silks, and fringe and floss:			
Pounds.....	174,408	183,776	246,213
Value.....	\$824,643	\$837,466	\$1,279,218
Broad silks (all silk and silk mixed):			
Plain and fancy—			
Yards.....	43,389,969	26,465,296	18,566,855
Value.....	\$26,367,799	\$15,572,901	\$10,312,848
Jacquard—			
Yards.....	2,019,365	1,300,968	959,422
Value.....	\$1,123,523	\$821,834	\$529,545
Piece-dyed—			
Yards.....	20,160,052	15,788,680	7,337,352
Value.....	\$8,280,870	\$4,427,705	\$2,149,806
Ribbons.....	\$10,008,146	\$5,573,799	\$4,368,399
Laces, embroideries, fringes, and braids..	\$780,047	\$773,847	\$293,068
Trimnings.....	\$1,498,148	\$1,328,307	\$1,010,145
All other products.....	\$1,285,821	\$1,880,535	\$2,048,609
Amount received for contract work.....	\$4,416,978	\$1,994,319	\$1,070,133
Silk thrown on commission, total pounds.....	7,733,016	4,116,299	2,259,673
Into organzine, pounds.....	4,150,688	2,238,174	1,332,758
Into tram, pounds.....	3,582,328	1,878,125	926,915

¹ Not reported separately.

Hosiery and knit goods.—The manufacture of hosiery was introduced into the United States at Germantown, now a part of the city of Philadelphia, about 1698, and this city has always been the center of this branch of the textile industry in America. The next table shows the quantity and cost of materials used and the quantity and value of products manufactured for 1909, 1904, and 1899.

MATERIAL OR PRODUCT.	1909	1904	1899
Materials used, total cost	\$27,217,951	\$16,037,698	\$10,935,763
Cotton:			
Pounds.....	2,506,120	1,874,685	2,218,426
Cost.....	\$302,702	\$226,907	\$189,491
Wool (in condition purchased):			
Pounds.....	467,877	1,168,283	1,347,014
Cost.....	\$205,403	\$432,609	\$474,260
Equivalent in secured condition, pounds.....	435,848	1,056,052	1,069,994
Shoddy and wool waste and noils:			
Pounds.....	960,929	777,995	593,985
Cost.....	\$303,217	\$232,754	\$163,309
Yarns, purchased:			
Cotton—			
Pounds.....	59,035,958	46,895,104	38,323,301
Cost.....	\$16,283,401	\$10,305,172	\$7,183,082
Woolen—			
Pounds.....	618,809	661,645	406,163
Cost.....	\$399,134	\$360,533	\$219,025
Worsted—			
Pounds.....	1,684,786	1,584,717	1,115,863
Cost.....	\$1,616,975	\$1,350,076	\$861,068
Merino—			
Pounds.....	389,296	178,619	350,011
Cost.....	\$202,453	\$104,827	\$92,478
Silk and spun-silk—			
Pounds.....	250,467	73,006	30,397
Cost.....	\$978,071	\$204,872	\$103,169
Linen, jute, and other vegetable fiber—			
Pounds.....	15,975	6,827	500
Cost.....	\$17,507	\$6,259	\$100
Chemicals and dyestuffs	\$804,026	\$431,492	\$271,662
Fuel and rent of power	\$421,700	\$284,194	\$177,388
All other materials	\$5,633,362	\$2,097,943	\$1,200,761
Products, total value	\$49,657,506	\$30,812,211	\$21,929,426
Hose and half hose:			
Total dozen pairs.....	27,829,601	20,327,710	15,232,324
Total value.....	\$30,847,344	\$19,182,697	\$13,189,964
Cotton—			
Dozen pairs.....	27,139,582	19,707,227	14,858,506
Value.....	\$28,697,648	\$17,794,113	\$12,466,182
Hose—			
Dozen pairs.....	13,876,893	11,769,534	7,863,561
Value.....	\$16,058,169	\$11,317,802	\$7,655,360
Half hose—			
Dozen pairs.....	13,262,689	7,937,693	6,994,945
Value.....	\$12,639,379	\$6,476,311	\$4,810,822
Woolen or worsted and merino—			
Dozen pairs.....	547,522	599,448	367,818
Value.....	\$959,391	\$1,106,325	\$633,782
Hose—			
Dozen pairs.....	295,023	354,240	187,871
Value.....	\$501,105	\$648,933	\$379,075
Half hose—			
Dozen pairs.....	252,499	245,208	179,947
Value.....	\$458,286	\$457,392	\$254,707
Silk—			
Dozen pairs.....	145,497	21,035	6,000
Value.....	\$1,190,405	\$282,259	\$90,000
Shirts and drawers:			
Cotton—			
Dozens.....	6,552,364	3,852,513	2,670,341
Value.....	\$3,833,761	\$4,956,879	\$3,456,695
Merino—			
Dozens.....	161,883	150,519	114,183
Value.....	\$921,319	\$710,547	\$647,285
All other—			
Dozens.....	7,322	26,459	90,513
Value.....	\$59,074	\$279,142	\$443,201
Combination suits:			
Cotton—			
Dozens.....	412,567	271,069	374,057
Value.....	\$1,155,327	\$657,824	\$702,823
Merino—			
Dozens.....	23,268	9,858	20,366
Value.....	\$234,855	\$76,211	\$208,844
All other—			
Dozens.....	440	(1)	1,115
Value.....	\$4,100	(1)	\$15,120
Gloves and mittens:			
Dozen pairs.....	284,931	152,714	82,163
Value.....	\$1,037,894	\$442,552	\$167,545
Hoods, scarfs, nubias, etc.:			
Dozens.....	138,427	70,460	42,760
Value.....	\$581,208	\$202,450	\$127,785
Cardigan jackets, sweaters, etc.:			
Dozens.....	221,700	145,503	86,191
Value.....	\$2,986,061	\$1,858,182	\$536,707
All other products	\$2,995,663	\$2,445,727	\$2,433,757

¹ Included in "All other products."

During the decade the cost of materials increased \$16,282,188, or 148.9 per cent. Cotton yarns purchased increased in quantity from 38,323,301 pounds in 1899 to 59,035,958 pounds in 1909, a gain of 54 per cent. The quantity of wool purchased declined, while there was an increase in the quantity of raw cotton, of shoddy and wool waste and noils, and of the different kinds of yarn purchased.

The total value of products was \$21,929,426 in 1899 and \$49,657,506 in 1909, an increase of 126.4 per cent during the 10-year period. Nearly two-thirds of the total represents the value of hosiery, which increased 82.7 per cent in quantity and 133.9 per cent in value from 1899 to 1909. Almost all the hosiery produced was cotton. There was a gain of 48.9 per cent in the output of hosiery in which wool was the chief material and a large gain in silk hosiery. The production of shirts and drawers, gloves and mittens, hoods, scarfs, nubias, etc., and cardigan jackets, sweaters, etc., more than doubled during the decade, while the production of combination suits showed comparatively little increase.

Cotton goods, including cotton small wares.—As early as 1775 a spinning jenny, with 24 spindles, was operated in Philadelphia and in 1810, 611,481 yards of cotton goods were manufactured in the state. In the manufacture of certain kinds of cotton goods, such as lace and lace curtains and cotton tapestries, the state ranks first.

The following table shows the quantity and cost of the principal materials used and the quantity and value of the leading products for 1909, 1904, and 1899:

MATERIAL OR PRODUCT.	1909	1904	1899
Materials used, total cost	\$18,757,025	\$14,321,577	\$13,176,718
Cotton:			
Domestic—			
Pounds.....	23,607,952	24,810,154	35,083,214
Cost.....	\$2,540,885	\$2,743,506	\$2,621,788
Foreign—			
Pounds.....	2,080,645	1,063,564	1,466,319
Cost.....	\$336,765	\$175,670	\$168,764
Cotton yarn:			
Pounds.....	46,787,905	41,262,481	39,937,206
Cost.....	\$10,852,298	\$8,786,109	\$7,337,382
Silk and spun-silk yarn:			
Pounds.....	144,128	143,471	230,034
Cost.....	\$469,370	\$420,457	\$637,681
Other yarns:			
Pounds.....	1,709,440	1,032,762	1,715,626
Cost.....	\$965,106	\$359,136	\$694,219
Cotton waste:			
Pounds.....	1,310,239	2,140,344	2,266,614
Cost.....	\$80,421	\$122,785	\$108,942
Starch	\$52,359	\$60,072	\$43,184
Chemicals	\$480,367	\$417,171	\$455,106
Fuel and rent of power	\$647,285	\$375,112	\$368,398
All other materials	\$2,528,465	\$861,655	\$841,274
Products, total value	\$33,917,033	\$26,299,853	\$25,447,697
Fancy woven fabrics:			
Square yards.....	32,806,629	30,398,352	30,981,363
Value.....	\$5,119,822	\$3,983,365	\$3,906,347
Cottonades:			
Square yards.....	4,530,286	8,127,997	7,004,759
Value.....	\$1,150,291	\$1,471,292	\$1,134,039
Corduroy, cotton velvet, and plush:			
Square yards.....	3,038,945	2,944,944	3,945,504
Value.....	\$1,515,405	\$1,182,671	\$1,419,574
Upholstery goods:			
Tapestries (piece goods and curtains)—			
Square yards.....	8,783,867	8,691,354	9,586,806
Value.....	\$4,163,683	\$4,070,948	\$4,048,784
Lace and lace curtains—			
Square yards.....	66,867,709	41,374,259	30,925,198
Value.....	\$7,238,321	\$5,569,180	\$3,028,615
All other, including covers—			
Square yards.....	2,502,062	1,448,741	2,400,425
Value.....	\$1,072,348	\$601,133	\$827,302
Cotton towels and toweling:			
Square yards.....	10,501,557	5,408,582	(1)
Value.....	\$1,749,813	\$1,100,601	(1)
All other woven goods:			
Square yards.....	31,671,270	23,511,283	41,221,811
Value.....	\$3,347,791	\$2,344,249	\$3,323,556
Tape and webbing	\$2,141,821	\$1,742,185	\$984,516
Yarns manufactured, for sale:			
Pounds.....	11,448,343	14,303,093	18,718,490
Value.....	\$2,591,468	\$2,812,445	\$2,811,123
Cotton waste not used for further manufacture:			
Pounds.....	3,038,771	2,277,242	5,664,528
Value.....	\$96,340	\$79,970	\$115,247
All other products	\$3,729,940	\$1,341,824	\$3,848,594

¹ Not reported separately.

One of the striking changes in the industry in the state has been the decline in recent years in the spinning of cotton, which has been accompanied by an increased dependence upon yarns manufactured elsewhere. This is evidenced by the figures in the table, which show that the quantity of cotton used decreased from 36,549,533 pounds in 1899 to 25,688,597 pounds in 1909, while that of cotton yarn purchased increased from 39,937,206 pounds in 1899 to 46,787,905 pounds in 1909.

The most important single product manufactured was lace and lace curtains, which increased in value during the decade from \$3,028,615 to \$7,238,321, or 139 per cent. Of the total quantity of lace and lace curtains manufactured in the United States in 1909, 82.5 per cent was reported from Pennsylvania.

Carpets and rugs, other than rag.—In the manufacture of carpets and rugs, Pennsylvania has always held an important position among the states. As early as 1791 there was a factory in Philadelphia engaged in the manufacture of Turkey and Axminster carpets. At the census of 1849 Massachusetts led in the industry, but, at each census from 1859 to 1904, inclusive, Pennsylvania ranked first in value of products; New York took first place in 1909, but with a product only slightly greater in value than that reported for Pennsylvania. The industry in Pennsylvania is confined almost entirely to the city of Philadelphia, where the manufacture of ingrain is strongly established. With an output of 18,722,998 square yards in 1909, or 78.2 per cent of the total for the country, Philadelphia led all other cities in the production of ingrain carpets and rugs.

The next table shows the quantity and cost of the principal materials used and the quantity and value of the important products in 1909, 1904, and 1899.

The cost of materials and the value of products increased slightly during the 10-year period covered by the table, although there was a decrease in each between 1904 and 1909. The quantity of both wool and animal hair used decreased more than one-half. Tailors' clippings, rags, and shoddy increased markedly in quantity between 1899 and 1904, but from 1904 to 1909 they decreased more than one-half. Comparatively little change took place in the quantities of the other materials used.

The total output of carpet decreased from 38,373,245 square yards in 1899 to 36,953,509 square yards in 1904 and to 26,305,322 square yards in 1909, a loss for the decade of 12,067,923 square yards, or 31.4 per cent. This decrease is accounted for by the decline in the production of ingrain carpets. Axminster and Moquette, Wilton, and Brussels carpets all show marked increases in quantity, especially for the later period, 1904-1909. Velvet and tapestry Brussels, although showing a slight increase in quantity for the decade as a whole, decreased slightly between 1904 and 1909. The output of rugs woven whole more than doubled during the decade, but practically all of this increase came in the earlier five-year period.

MATERIAL OR PRODUCT.	1909	1904	1899
Materials used, total cost.....	\$14,648,298	\$16,706,431	\$13,773,788
Wool (in condition purchased):			
Pounds.....	5,787,409	9,126,230	11,568,721
Cost.....	\$1,047,177	\$1,722,097	\$1,713,164
Equivalent in scoured condition, pounds.....	4,309,413	4,818,741	8,189,811
Animal hair:			
Pounds.....	1,795,124	4,253,081	4,307,897
Cost.....	\$131,765	\$277,186	\$389,831
Tailors' clippings, rags, and shoddy:			
Pounds.....	1,267,042	2,645,628	737,580
Cost.....	\$71,050	\$213,180	\$43,145
Yarns, purchased:			
Wool—			
Pounds.....	22,320,073	20,077,069	28,029,987
Cost.....	\$4,306,006	\$5,144,231	\$4,218,005
Worsted—			
Pounds.....	5,360,220	6,292,815	6,504,583
Cost.....	\$2,592,410	\$2,945,955	\$2,481,729
Cotton—			
Pounds.....	14,395,059	17,296,402	13,215,750
Cost.....	\$2,674,819	\$2,937,387	\$1,939,047
Linen—			
Pounds.....	1,433,096	1,232,433	1,699,108
Cost.....	\$235,481	\$220,601	\$252,310
Jute, ramie, or other yarns of vegetable fiber—			
Pounds.....	16,646,563	17,990,828	15,784,309
Cost.....	\$1,213,413	\$1,331,559	\$1,101,507
All other—			
Pounds.....	779,528	1,112,138	418,114
Cost.....	\$404,521	\$339,585	\$331,525
Chemicals and dyestuffs.....	\$861,323	\$681,247	\$550,542
Fuel and rent of power.....	\$276,388	\$245,092	\$235,763
All other materials.....	\$783,945	\$648,601	\$516,620
Products, total value.....	\$24,879,232	\$27,120,311	\$23,113,058
Carpets and rugs of all kinds:			
Square yards.....	36,222,080	45,763,852	43,046,297
Value.....	\$21,570,318	\$23,650,927	\$19,179,041
Carpets, including rugs made by sewing strips of carpet—			
Square yards.....	26,305,322	36,953,509	38,373,245
Value.....	\$15,373,145	\$18,289,902	\$15,948,034
Axminster and Moquette—			
Square yards.....	1,249,311	220,500	.....
Value.....	\$1,375,832	\$231,510	.....
Wilton—			
Square yards.....	1,840,125	400,188	358,972
Value.....	\$2,710,739	\$682,825	\$509,637
Brussels—			
Square yards.....	1,121,788	564,095	567,261
Value.....	\$1,344,429	\$724,129	\$613,633
Velvet—			
Square yards.....	3,241,155	3,343,512	2,229,401
Value.....	\$2,041,704	\$2,850,000	\$1,880,137
Tapestry Brussels—			
Square yards.....	2,713,187	3,666,808	3,149,966
Value.....	\$1,927,853	\$2,650,686	\$1,340,978
Ingrain—			
Square yards.....	16,139,756	26,752,406	33,067,645
Value.....	\$5,972,588	\$11,150,812	\$11,603,649
Rugs woven whole—			
Square yards.....	9,916,758	8,810,343	4,673,052
Value.....	\$6,197,173	\$5,360,965	\$3,231,007
Wilton—			
Square yards.....	490,800	558,118	96,869
Value.....	\$762,534	\$1,052,671	\$138,842
Tapestry Brussels—			
Square yards.....	1,407,919	(1)	(1)
Value.....	\$1,104,682	(1)	(1)
Ingrain art squares—			
Square yards.....	5,439,266	5,747,587	2,380,126
Value.....	\$2,018,846	\$2,016,159	\$999,360
All other—			
Square yards.....	2,518,773	2,504,638	2,196,057
Value.....	\$2,311,111	\$2,292,135	\$2,092,805
All other products.....	\$3,308,914	\$3,469,384	\$3,934,017

¹ Included in "All other rugs."

Fur-felt hats.—Pennsylvania held first place among the states in the manufacture of fur-felt hats in 1909 and the city of Philadelphia reported about 80 per cent of the total value of these products for the state. The next table gives detailed statistics of materials and products for 1909, 1904, and 1899.

The industry shows a large increase for each of the five-year periods. During the decade the total cost of materials increased \$3,145,904, or 168.5 per cent. Hatters' fur increased in quantity from 817,311 pounds, costing \$933,748, to 1,976,118 pounds, costing \$2,420,635, thus more than doubling in both quantity and cost. During the same period the value of products more than trebled, increasing from \$4,243,352 to \$13,022,617, and the number of fur-felt hats produced

increased from 280,880 dozens to 668,696 dozens, or 138.1 per cent.

MATERIAL OR PRODUCT.	1909	1904	1899
Materials used, total cost	\$5,012,770	\$2,728,895	\$1,866,866
Hatters' fur:			
Pounds.....	1,976,118	1,227,951	817,311
Cost.....	\$2,420,435	\$1,307,816	\$933,748
Fur-felt hat bodies and hats in the rough:			
Dozens.....	26,934	23,512	5,045
Cost.....	\$175,642	\$156,420	\$42,341
Chemicals and dyesuffs.....	\$164,843	\$72,911	\$77,317
All other materials.....	\$2,251,650	\$1,191,728	\$813,360
Products, total value	\$13,022,617	\$7,350,311	\$4,243,352
Fur-felt hats:			
Dozens.....	668,696	413,506	280,880
Value.....	\$12,943,334	\$7,270,067	\$4,203,169
All other products.....	\$79,283	\$80,244	\$40,183

Leather, tanned, curried, and finished.—The following table gives for the tanning, currying, and finishing of leather the quantity and cost of the various materials and the quantity and value of the different products for 1909, 1904, and 1899:

MATERIAL OR PRODUCT.	1909	1904	1899
Materials used, total cost	\$59,113,124	\$55,411,927	\$42,403,503
Hides (all kinds):			
Number.....	5,449,926	5,447,947	4,848,759
Cost.....	\$30,118,025	\$26,416,581	\$22,955,326
Skins:			
Number.....	25,785,601	28,149,914	24,300,676
Cost.....	\$14,490,256	\$16,712,667	\$11,504,911
Calf and kip—			
Number.....	142,464	292,500	388,205
Cost.....	\$212,316	\$501,930	\$394,981
Goat—			
Number.....	23,117,712	24,220,530	21,854,197
Cost.....	\$12,909,125	\$13,646,179	\$10,566,740
Sheep—			
Number.....	2,445,024	2,402,204	1,949,730
Cost.....	\$1,160,130	\$715,166	\$492,520
All other—			
Number.....	80,401	1,234,680	108,544
Cost.....	\$208,685	\$1,849,392	\$50,661
Purchased rough leather used.....	\$2,692,729	\$1,573,089	\$991,999
Whole sides—			
Number.....	555,403	306,680	184,654
Cost.....	\$1,440,104	\$1,464,027	\$662,587
All other.....	\$1,252,625	\$109,692	\$229,412
All other materials.....	\$11,812,114	\$10,708,990	\$7,051,267
Products, total value	\$77,926,321	\$69,427,852	\$55,615,009
Leather.....	\$73,255,418	\$66,292,074	\$53,857,074
Sole.....	\$39,904,180	\$33,553,676	\$28,091,603
Hemlock—			
Sides.....	4,752,308	5,672,327	5,481,300
Value.....	\$17,194,852	\$17,829,564	\$16,779,341
Oak and chrome—			
Sides.....	779,242	331,766	335,894
Value.....	\$4,735,428	\$1,867,731	\$1,854,243
Union—			
Sides.....	3,675,802	3,472,046	2,366,322
Value.....	\$17,973,900	\$13,856,381	\$10,058,019
Upper, other than calf or kip skins.....	\$1,821,432	\$642,193	\$2,032,111
Grain, satin, pebble, etc. (side leather)—			
Sides.....	315,210	70,461	632,789
Value.....	\$1,049,815	\$158,721	\$1,400,727
Finished splits—			
Number.....	588,730	64,413	635,969
Value.....	\$303,409	\$83,472	\$626,134
Patent and enameled shoe—			
Sides.....	127,952	392,000	2,500
Value.....	\$468,208	\$400,000	\$5,250
Horsehides and coltskins.....			
Number.....	626,556	1,234,119	6,263
Value.....	\$2,413,861	\$3,450,950	\$25,677
Calf and kip skins, tanned and finished—			
Number.....	145,139	243,956	419,593
Value.....	\$334,602	\$621,863	\$641,965
Goatskins, tanned and finished—			
Number.....	23,822,008	22,909,407	21,602,961
Value.....	\$19,975,045	\$19,156,181	\$15,796,782
Black—			
Number.....	22,415,255	20,923,993	19,828,129
Value.....	\$18,691,232	\$17,133,227	\$14,182,422
Colored—			
Number.....	1,406,753	1,985,414	1,774,832
Value.....	\$1,283,813	\$2,022,954	\$1,614,360
Sheepskins, tanned and finished—			
Number.....	1,772,091	1,090,180	1,090,822
Value.....	\$1,267,974	\$567,879	\$600,423

MATERIAL OR PRODUCT.	1909	1904	1899
Products—Continued.			
Leather—Continued.			
Harness—			
Sides.....	257,044	518,178	450,352
Value.....	\$1,900,659	\$2,980,450	\$2,491,722
Carriage, automobile, and furniture—			
Hides.....	83,836	47,418	42,000
Value.....	\$591,680	\$307,278	\$479,256
Trunk, bag, and pocketbook.....	\$1,698,576	\$751,772	\$475,930
Leather, sold in the rough.....	\$1,182,142	\$2,298,589	\$1,318,801
All other.....	\$2,104,967	\$1,952,243	\$1,302,805
All other products.....	\$1,412,742	\$1,166,686	\$502,964
Work on materials for others.....	\$3,258,161	\$1,969,092	\$1,164,981

The cost of materials was \$42,403,503 in 1899, \$55,411,927 in 1904, and \$59,113,124 in 1909, representing an increase of 30.7 per cent in the earlier five-year period and of 6.7 per cent in the later. The number of hides and skins treated increased 15.3 per cent from 1899 to 1904 and decreased 7 per cent from 1904 to 1909. Included in the cost of "All other materials" is that of bark and extracts. In 1909, 310,279 tons of tan bark were reported, costing \$2,997,026, and 124,742,847 pounds of tanning extract, costing \$3,665,942.

Of the total value of leather tanned, curried, and finished in the United States, this state reported 23.8 per cent in 1909, 27.5 per cent in 1904, and 27.3 per cent in 1899. It is especially prominent in the manufacture of sole leather and goatskins, producing in 1909 nearly one-half of the total output of each for the United States. The value of "All other products" and the amount received for work on materials for others also show large increases for both census periods. Practically all the leather was finished in the establishment tanning it, as comparatively little rough leather for currying is shown under materials or products.

Printing and publishing.—The following tabular statement shows, by period of issue, the number of publications and their aggregate average circulation for 1909, 1904, and 1899:

PERIOD OF ISSUE.	NUMBER OF PUBLICATIONS.			AGGREGATE CIRCULATION PER ISSUE.		
	1909	1904	1899	1909	1904	1899
Total	1,520	1,474	1,386	19,674,336	17,867,795	11,280,367
Daily.....	223	220	196	2,924,306	2,520,587	1,917,426
Sunday.....	27	27	21	1,481,282	1,290,160	(1)
Semiweekly and tri-weekly.....	52	52	52	243,089	467,339	290,348
Weekly.....	847	887	883	5,319,021	5,282,691	3,691,654
Monthly.....	253	212	178	6,107,571	4,885,689	3,246,779
Quarterly.....	97	60	42	3,516,933	3,758,107	1,901,819
All other classes.....	21	16	14	82,134	154,225	142,041

¹ Included in circulation of dailies.

The total number of publications increased from 1,386 in 1899 to 1,520 in 1909, and the aggregate average circulation increased from 11,280,367 to 19,674,336. The largest increase in circulation, 2,860,792, is shown for monthlies, while dailies also show a large gain. The aggregate average circulation of weeklies increased 44.1 per cent and of quarterlies 76.6 per cent, while semiweeklies and triweeklies and "All other classes" show decreases.

The following statement shows for 1909 and 1904 the number and circulation of the various classes of pub-

lications, classified as printed in English or printed in a foreign language. Papers printed partly in English and partly in a foreign language are classified in the foreign group.

PERIOD OF ISSUE.	TOTAL.		IN ENGLISH.		IN FOREIGN LANGUAGES. ¹	
	Number.	Aggregate circulation per issue.	Number.	Aggregate circulation per issue.	Number.	Aggregate circulation per issue.
Total.....	1,520	19,674,330	1,424	19,265,581	96	408,755
Daily.....	223	2,924,306	215	2,848,657	8	75,649
Sunday.....	27	1,481,282	22	1,424,350	5	56,932
Weekly.....	847	5,319,021	778	5,132,782	69	186,239
Monthly.....	253	6,107,571	244	6,050,535	9	57,035
All other classes.....	170	3,842,150	165	3,809,250	5	32,900

¹ Includes those printed in English and a foreign language.

Ninety-three and seven-tenths per cent of the total number of publications, with 97.9 per cent of the total circulation, were printed in English. Of the 8 dailies printed in foreign languages, 5 were published in German and 2 in Italian, while 1 was reported as Slovak. The 69 weeklies were made up of 33 published in German, 20 in Letto-Slavic languages, 11 in Italian, 2 in Hungarian, and 1 each in French, Hebrew, and Swedish. Of the 9 monthlies, 4 each were published in German and in Letto-Slavic, and 1 in Swedish; and of the 5 publications included under the head of "All other classes," 4 were published in German and 1 in Lithuanian.

Lumber.—Although Pennsylvania is not specially prominent in the production of rough lumber, standing fourteenth among the states in this respect at the census of 1909, it ranked fourth in 1899 and was the leading state in this branch of the industry at the census of 1859. In the following tabular statement is shown the production of rough lumber, lath, and shingles in 1909 and 1899:

PRODUCT.	QUANTITY.	
	1909	1899
Lumber.....M feet b. m.	1,462,771	2,333,278
Lath.....thousands..	143,059	266,949
Shingles.....thousands..	79,336	369,858

From 1899 to 1909 there was a decrease of 37.3 per cent in the production of rough lumber, of 46.4 per cent in the production of lath, and of 78.5 per cent in the production of shingles. The decline, during recent years, in the production of lumber in this state is due, in the main, to the rapidly diminishing supply of merchantable timber. As a result of this condition the annual output was not only substantially smaller at the end than at the beginning of the decade covered, but the composition of the total was materially changed. Whereas the conifers, particularly hemlock, white pine, and spruce, were drawn upon chiefly for many decades as a source of lumber, the diminished supply of this class of timber has brought into greater relative prominence the hardwoods. In 1909 only 56.1 per cent of the total quantity of lumber

produced was softwood, whereas in 1899 the proportion was 77.2 per cent. The output of oak lumber in 1909 formed more than one-fifth of the total, and relatively large quantities were also cut from chestnut, maple, beech, birch, hickory, yellow poplar, basswood, and ash, ranking in order named. In 1909 there were 15 mills which cut from 10,000 to 25,000 M feet board measure, 4 that cut from 25,000 to 50,000 M feet, and 3 that cut over 50,000 M feet.

Petroleum refining.—The high rank of Pennsylvania in petroleum refining is due largely to the fact that petroleum was first produced on a commercial basis in this state and that the refineries were built near the source of supply. In the following table figures are presented showing the cost of materials, the quantity and value of the principal products, and details as to the main equipment reported for 1909, 1904, and 1899:

MATERIAL OR PRODUCT.	1909	1904	1899
Materials used, total cost.....	\$47,440,316	\$38,921,919	\$27,513,735
Crude petroleum:			
Barrels of 42 gallons.....	21,893,871	17,977,686	14,500,461
Cost.....	\$38,914,307	\$31,957,135	\$23,172,609
Containers.....	\$4,481,540	\$3,184,412	\$1,892,460
All other materials.....	\$4,044,469	\$3,780,372	\$2,448,666
Products, total value.....	\$53,088,199	\$47,459,502	\$34,977,706
Illuminating oil:			
Barrels of 50 gallons.....	8,659,488	8,328,883	7,276,712
Value.....	\$24,319,743	\$25,849,501	\$20,390,666
Fuel oils (including gas oils):			
Barrels of 50 gallons.....	2,712,073	1,648,535	1,161,435
Value.....	\$3,207,305	\$2,563,439	\$1,644,044
Lubricating oils:			
Barrels of 50 gallons.....	3,124,921	1,870,437	1,271,372
Value.....	\$12,965,591	\$7,177,818	\$4,497,470
Naphtha and gasoline (including gas naphtha):			
Barrels of 50 gallons.....	2,051,118	1,774,626	1,582,262
Value.....	\$8,063,575	\$6,402,492	\$4,687,500
Paraffin wax:			
Barrels of 50 gallons.....	326,809	279,511	255,327
Value.....	\$2,456,178	\$3,017,004	\$2,244,836
Residuum, tar, greases, oil asphaltum, coke, and black naphtha.....	\$534,180	\$809,252	\$433,981
All other products.....	\$1,541,624	\$1,639,906	\$1,079,149
Equipment:			
Stills, number.....	579	516	523
Heated by steam—			
Number.....	102	112	106
Capacity (barrels, 42 gallons).....	170,966	(¹)	(¹)
Heated by superheated steam—			
Number.....	6	4	8
Capacity (barrels, 42 gallons).....	1,750	(¹)	(²)
Heated by fire—			
Number.....	471	400	414
Capacity (barrels, 42 gallons).....	571,234	(¹)	(²)
Agitators, number.....	143	120	113
Chilling houses for paraffin, number.....	43	48	21
Hydraulic or other presses, number.....	124	124	208
Storage tanks:			
For crude petroleum—			
Number.....	118	131	152
Capacity, gallons.....	64,429,951	42,683,655	(¹)
For refined petroleum—			
Number.....	2,138	1,191	1,198
Capacity, gallons.....	224,531,444	110,111,758	(¹)
Cooper shops, number.....	20	30	25
Tin shops, number.....	3	3	2

¹ Not reported.

From 1899 to 1909 the cost of materials increased 72.4 per cent and the value of products 51.8 per cent. The quantity of crude petroleum used as material increased from 14,500,461 barrels of 42 gallons to 21,893,871 barrels of 42 gallons, or 51 per cent, and the quantity of oils produced, including naphtha and gasoline, increased from 11,291,781 barrels of 50 gallons to 16,547,600 barrels of 50 gallons, or 46.5 per cent. The value of illuminating oil constituted 45.8 per cent of the total value of products in 1909, as compared with

54.5 per cent in 1904 and 58.3 per cent in 1899. Lubricating oils, the product second in importance, show the largest absolute and relative increase in quantity from 1904 to 1909. Comparative figures for the quantities of the other products, except paraffin wax, are not available, but the value of all such products increased 20.6 per cent during the decade.

The development of the industry is also reflected in the figures for the equipment, such as stills, storage tanks, and agitators.

Slaughtering and meat packing.—The following table shows the quantity and cost of the principal materials used and the quantity and value of the leading products reported for 1909, 1904, and 1899:

MATERIAL OR PRODUCT.	1909	1904	1899
Materials used, total cost	\$44,845,047	\$28,339,983	\$21,805,858
Beeves slaughtered:			
Number.....	252,897	197,581	130,073
Cost.....	\$14,997,080	\$10,068,306	\$6,497,257
Calves slaughtered:			
Number.....	152,851	112,867	51,510
Cost.....	\$1,764,473	\$1,025,377	\$445,811
Sheep slaughtered:			
Number.....	445,471	363,494	231,556
Cost.....	\$2,332,533	\$1,570,071	\$971,583
Hogs slaughtered:			
Number.....	1,222,880	1,085,634	831,821
Cost.....	\$16,934,874	\$10,156,069	\$6,977,465
Dressed meat purchased	\$4,898,467	\$3,363,793	\$5,518,048
Fuel and rent of power	\$239,663	\$150,750	\$94,769
All other materials	\$3,677,957	\$2,005,617	\$1,300,925
Products, total value	\$51,850,936	\$33,100,878	\$25,537,390
Beef, fresh:			
Pounds.....	136,838,202	117,319,123	84,181,747
Value.....	\$13,072,530	\$9,436,666	\$7,089,719
Beef, salted or cured:			
Pounds.....	2,765,672	924,173	2,515,208
Value.....	\$448,471	\$88,304	\$191,168
Veal:			
Pounds.....	13,405,455	9,097,823	4,371,144
Value.....	\$1,671,022	\$987,297	\$465,886
Mutton:			
Pounds.....	17,316,377	15,085,808	9,604,293
Value.....	\$2,149,700	\$1,440,490	\$979,064
Pork, fresh:			
Pounds.....	50,210,292	37,333,042	45,806,941
Value.....	\$6,072,517	\$3,295,575	\$3,488,370
Pork, salted or cured:			
Pounds.....	78,559,883	78,070,062	93,425,184
Value.....	\$11,116,844	\$7,679,349	\$7,906,070
Sausage, fresh or cured	\$5,421,307	\$2,805,029	\$1,532,434
All other fresh meat:			
Pounds.....	3,189,364	13,498,980	1,634,720
Value.....	\$195,490	\$939,079	\$128,603
Lard:			
Pounds.....	36,121,032	34,129,473	26,811,272
Value.....	\$4,522,249	\$2,534,618	\$1,733,824
Tallow and oleo stock:			
Pounds.....	6,594,450	(¹)	(¹)
Value.....	\$379,411	(¹)	(¹)
Stearin:			
Pounds.....	2,371,256	(¹)	(¹)
Value.....	\$303,015	(¹)	(¹)
Fertilizers and fertilizer materials:			
Tons.....	9,973	8,415	3,108
Value.....	\$190,762	\$140,642	\$88,099
Hides:			
Number.....	397,443	296,259	181,533
Pounds.....	19,170,659	14,619,934	8,303,766
Value.....	\$2,426,372	\$1,469,705	\$725,637
Pelts:			
Number.....	444,480	363,494	(¹)
Value.....	\$455,030	\$330,037	(¹)
All other products, including custom or contract work	\$3,426,216	\$1,947,997	\$1,238,416

¹ Not reported separately.

The total cost of materials and the total value of products more than doubled during the period covered by the table. An increase in the number slaughtered is shown for each class of animals. The largest absolute increase was in the number of hogs, while the largest relative increase was in the number of calves.

Fresh meat sold as such increased 75,270,845 pounds, or 51.6 per cent, in quantity, and \$11,040,117, or 91.1 per cent, in value between 1899 and 1909, while cured

meats decreased 15.2 per cent in quantity and increased 42.8 per cent in value. In this connection attention is called to the fact that in 1904 a considerable quantity of fresh pork was reported under "All other fresh meats." During the decade lard increased 34.7 per cent in quantity and 160.8 per cent in value, and fertilizers and fertilizer materials, 220.9 per cent in quantity and 116.5 per cent in value.

Coke.—The manufacture of coke in the United States was begun in 1841 near Connellsville, Pa. For many years the industry was confined almost entirely to the western part of Pennsylvania, because coal suited to its manufacture was abundant there and because the iron mills of the Pittsburgh district which consumed it were near. While coke is now manufactured in a number of other states, Pennsylvania still leads in its production and supplies about two-thirds of the total for the country.

The following table presents the statistics for the principal items of materials used and of products manufactured, together with the kind and number of ovens used, for 1909, 1904, 1899:

MATERIAL, PRODUCT, OR EQUIPMENT.	1909	1904	1899
Materials used, total cost	\$33,762,453	\$14,978,581	\$11,678,079
Coal charged into ovens, tons	36,983,568	23,083,044	19,490,039
Run of mine.....			
Unwashed.....	31,712,482	20,595,557	(¹)
Washed.....	2,278,927	505,527	(¹)
Slack.....			
Unwashed.....	1,016,576	1,079,682	(¹)
Washed.....	1,975,583	902,278	(¹)
Cost.....	\$32,065,729	\$14,423,048	\$10,899,832
All other materials	\$1,696,724	\$555,533	\$778,247
Products, total value	\$51,816,449	\$28,924,229	\$22,282,358
Coke:			
Tons.....	24,905,525	16,273,046	13,245,594
Value.....	\$50,377,035	\$28,593,136	\$22,039,161
Made in beehive ovens—			
Tons.....	22,966,105	15,767,652	(¹)
Value.....	\$45,315,189	\$27,542,495	(¹)
Made in retort or by-product ovens—			
Tons.....	1,939,420	505,394	(¹)
Value.....	\$5,061,846	\$1,050,641	(¹)
By-products obtained from retort or by-product ovens:			
Gas made, cubic feet (thousands)...	22,255,825	4,772,401	(¹)
Used in process or wasted, cubic feet (thousands).....	21,526,611	4,638,367	(¹)
Sold—			
Cubic feet (thousands).....	729,214	134,034	153,201
Value.....	\$16,983	\$11,569	\$32,669
Tar—			
Gallons.....	14,248,161	3,815,240	3,504,428
Value.....	\$299,600	\$84,812	\$64,429
Ammonia sulphate—			
Pounds.....	12,483,510	1,467,317	3,046,683
Value.....	\$327,554	\$38,733	\$78,999
Ammonia liquor—			
Gallons.....	5,898,883	1,334,775	890,184
Value.....	\$504,373	\$190,164	\$61,073
All other.....	\$290,890	\$5,815	\$6,037
Equipment:			
Ovens, number at end of year.....	54,506	37,205	26,920
Beehive ovens.....	53,210	36,675	26,565
Retort or by-product ovens.....	1,296	530	355

¹ Figures not available.

During the period covered by the table the quantity of coke produced almost doubled, while its value considerably more than doubled. Although still of minor importance, coke manufactured in retort, or by-product, ovens almost quadrupled in quantity from 1904 to 1909. The value of by-products in 1909 shows a large increase over former years. The growth in the use of by-product ovens promises an important saving through the utilization of a former waste.

Flour-mill and gristmill products.—The following table gives the quantity and value of the several products of the flour mills and gristmills for 1909, 1904, and 1899:

PRODUCT.	1909	1904	1899
Total value.....	\$44,782,558	\$38,518,702	\$29,570,943
Wheat flour:			
White—			
Barrels.....	3,738,812	3,952,440	
Value.....	\$20,094,935	\$19,764,264	4,450,832
Graham—			\$15,935,768
Barrels.....	11,030	16,783	
Value.....	\$56,043	\$79,805	
Corn meal and corn flour:			
Barrels.....	767,462	1,097,993	864,007
Value.....	\$2,369,701	\$2,091,670	\$1,684,721
Rye flour:			
Barrels.....	154,679	128,506	124,878
Value.....	\$628,999	\$536,576	\$385,834
Buckwheat flour:			
Pounds.....	50,760,006	45,117,852	46,144,362
Value.....	\$1,289,949	\$1,075,989	\$968,470
Barley meal:			
Pounds.....	196,800	331,600	42,240
Value.....	\$2,776	\$4,106	\$1,018
Hominy and grits:			
Pounds.....	52,105,637	33,938,974	16,308,420
Value.....	\$796,433	\$411,579	\$187,793
Feed:			
Tons.....	458,007	413,246	426,431
Value.....	\$13,296,931	\$9,990,426	\$7,985,943
Offal:			
Tons.....	101,629	185,642	162,548
Value.....	\$4,774,378	\$3,774,327	\$2,399,662
All other products.....	\$1,472,413	\$189,960	\$41,734

The value of products of the industry increased from \$29,570,943 in 1899 to \$44,782,558 in 1909, an increase which is due, to a large extent, to the advance in the prices of these commodities. The quantity of wheat flour and of corn meal and corn flour manufactured decreased during the decade, while the quantity of rye flour, buckwheat flour, hominy and grits, feed, and offal increased. Barley meal, although showing a considerable increase for the decade, decreased markedly in quantity in the five-year period 1904-1909.

Glass.—In 1909 Pennsylvania reported 35.6 per cent of the total value of glass products manufactured in the United States, as against 34.8 per cent in 1904 and 38.9 per cent in 1899. The next table gives detailed statistics of materials and products in 1909, 1904, and 1899.

Large increases are shown for both five-year periods covered by the table in the total cost of all materials and in the quantities of practically all the principal materials used. The increase in the total cost of materials was 44.9 per cent from 1899 to 1904 and 35.5 per cent from 1904 to 1909. During the last-named five-year period the quantity of window glass increased 50.8 per cent, while the value per 50-foot box decreased 35.6 per cent. Plate glass, both rough and polished, also increased in quantity and decreased in value per square foot. The reductions in the value per unit of these products are due largely to the more extensive use of improved machinery. The total value of pressed and blown glass increased from \$8,453,550 in 1899 to \$9,847,228 in 1909, or 16.5 per cent, and that of bottles and jars from \$4,162,990 to \$7,778,787, or 86.9 per cent. Of the 112 establishments engaged in the manufacture of glass in Pennsylvania in 1909, 44 produced building glass; 32, pressed and blown glass; and 41, bottles, jars, etc.

MATERIAL OR PRODUCT.	1909	1904	1899
Materials used, total cost.....	\$12,633,913	\$9,325,184	\$6,435,463
Glass sand, tons.....	341,319	219,958	191,859
Soda ash, tons.....	85,697	56,742	46,398
Salt cake, tons.....	40,444	28,749	34,297
Nitrate of soda, tons.....	3,616	3,451	4,330
Limestone, tons.....	72,958	45,974	36,309
Lime, bushels.....	337,729	331,816	184,970
Arsenic, pounds.....	1,640,208	996,496	896,074
Carbon, tons.....	2,701	1,598	1,926
Manganese, pounds.....	705,921	648,926	457,581
Litharge and red lead, pounds.....	4,709,539	4,030,785	3,143,727
Potash and pearl ash, pounds.....	2,176,337	1,921,380	1,938,334
Grinding sand, tons.....	485,363	273,428	182,117
Rouge, pounds.....	955,525	717,071	532,524
Products, total value.....	\$32,817,936	\$27,671,893	\$22,011,130
Building glass.....	\$14,958,649	\$12,169,013	\$9,213,545
Window glass:			
50-foot boxes.....	3,035,440	2,410,400	2,068,340
Value.....	\$5,786,591	\$5,963,874	\$5,301,131
Plate glass:			
Solid rough—			
Square feet.....	151,609	8,652	579,905
Value.....	\$26,717	\$2,045	68,032
Polished—			
Square feet.....	31,841,174	17,686,694	10,877,250
Value.....	\$8,219,104	\$5,138,509	\$3,441,734
Skylight glass:			
Square feet.....	10,792,914	7,745,349	3,636,536
Value.....	\$543,019	\$357,587	\$161,203
All other.....	\$383,218	\$706,998	\$241,445
Pressed and blown glass.....	\$9,847,228	\$9,406,183	\$8,453,550
Bottles and jars.....	\$7,778,787	\$5,951,144	\$4,162,990
All other products.....	\$233,272	\$145,353	\$181,045

Boots and shoes, including cut stock and findings.—The following table shows the total number of pairs of the various kinds of footwear turned out by the boot and shoe factories of Pennsylvania in 1909, 1904, and 1899:

KIND.	NUMBER OF PAIRS.		
	1909	1904	1899
Boots and shoes.....	11,631,329	9,998,589	10,978,367
Men's, boys', and youths'.....	2,048,307	2,151,742	2,082,210
Women's, misses', and children's.....	9,583,022	7,846,847	8,896,157
Slippers, all kinds.....	1,165,117	328,741	275,066
All other kinds.....	4,792,028	3,009,090	1,224,023

The total number of pairs of footwear produced in the state in 1909 was 17,588,474, a gain of 4,252,054 pairs, or 31.9 per cent, over 1904, and of 5,110,418 pairs, or 41 per cent, over 1899. Of the 11,631,329 pairs of boots and shoes made in 1909, men's, boys', and youths' formed 17.6 per cent and women's, misses', and children's 82.4 per cent. The corresponding proportions for 1904 were 21.5 per cent and 78.5 per cent, respectively.

The following table shows the distribution of the various kinds of footwear produced in 1909 according to the methods employed in their manufacture:

KIND.	NUMBER OF PAIRS, BY METHOD OF MANUFACTURE.				
	Total.	Machine or hand welt.	Turned.	McKay.	All other methods. ¹
Boots and shoes.....	11,631,329	2,764,754	4,170,122	4,187,893	508,560
Men's, boys', and youths'.....	2,048,307	673,025	(²)	889,977	485,305
Women's, misses', and children's.....	9,583,022	2,091,729	4,170,122	3,297,916	23,255
Slippers, all kinds.....	1,165,117	91,739	583,741	489,637	(²)
All other kinds.....	4,792,028	579,602	3,861,208	222,783	128,375

¹ Includes "wooden-pegged" and "wire-screw or metal-fastened."
² Not reported.

The greater part of the footwear manufactured in Pennsylvania, in 1909, was McKay and turned sewed, over 4,500,000 pairs of the former class and over 8,500,000 of the latter class being reported, while slightly less than 3,500,000 pairs were made by the machine or hand welt method.

Paper and wood pulp.—Paper was manufactured in Pennsylvania as early as 1690 by William Rittenhouse at Roxboro, now a part of the city of Philadelphia. In the development of the industry, both in the use of new paper-making materials and in the improvement of machinery, the manufacturers of the state have taken a prominent part. Since the use of wood fiber in the manufacture of many kinds of paper has become general several of the states having an abundant supply of timber suited to the manufacture of pulp have outranked Pennsylvania in this industry. The state ranked first in 1810, second in 1840, fourth in 1849, third from 1859 to 1889, fourth in 1899, and fifth in 1904 and 1909.

The next table shows the quantity and cost of the principal materials used in the industry, the quantity and value of the principal products, and the principal equipment for the census years 1909, 1904, and 1899.

The total cost of the materials used, including fuel and rent of power, amounted to \$6,374,315 in 1899, \$8,509,546 in 1904, and \$11,398,311 in 1909, a gain of 78.8 per cent during the decade. The cost of pulp wood consumed almost trebled during this period, increasing from \$711,450 to \$2,111,025. The total quantity of wood used in the manufacture of pulp was 181,850 cords in 1899 and 243,420 cords in 1904. The schedule used in collecting the data regarding the operations of pulp mills for 1909 did not call for the quantity of pulp wood used, because this bureau, in collaboration with the Forest Service, now obtains information on this subject in connection with its annual compilation of statistics of forest products. These reports show that in 1909, 295,038 cords of pulp wood were used, representing an increase of 62.2 per cent for the decade. Of the wood pulp manufactured, 120,261 tons were for use in the establishments making it. Of this amount, 2,760 tons consisted of ground wood; 64,187 tons, of soda fiber; and 53,314 tons, of sulphite fiber. In addition, 41,062 tons of wood pulp were purchased, of which 30,712 tons, or nearly 75 per cent, were sulphite fiber. Thus the total quantity of wood pulp used during the year in the manufacture of paper was 161,323 tons, as compared with 96,022 tons in 1904 and 98,907 tons in 1899, making an increase of 63.1 per cent for the decade.

In this connection it should be explained that separate reports were secured for paper mills and pulp mills operating under the same ownership if they were located at different points; in such instances, pulp transferred from one plant to another and not actually sold was treated, for statistical purposes, as sold by the pulp mill and as purchased by the paper mill.

MATERIAL, PRODUCT, OR MACHINE.	1909	1904	1899
Materials used, total cost	\$11,398,311	\$8,509,546	\$6,374,315
Pulp wood.....	\$2,111,025	\$1,222,491	\$711,450
Wood pulp, purchased:			
Tons.....	41,062	30,945	30,303
Cost.....	\$1,773,494	\$1,181,511	\$929,066
Ground—			
Tons.....	6,942	6,747	5,340
Cost.....	\$163,187	\$125,463	\$116,933
Soda fiber—			
Tons.....	3,408	4,451	9,513
Cost.....	\$151,337	\$189,892	\$284,449
Sulphite fiber—			
Tons.....	30,712	19,747	15,460
Cost.....	\$1,458,970	\$866,156	\$527,624
Rags, including cotton and flax waste and sweepings:			
Tons.....	64,654	56,207	34,909
Cost.....	\$1,226,978	\$866,616	\$626,705
Old or waste paper:			
Tons.....	106,150	65,726	46,697
Cost.....	\$1,208,765	\$719,574	\$465,572
Manila stock, including jute bagging, rope, waste, and thread:			
Tons.....	9,544	11,971	7,851
Cost.....	\$327,212	\$299,469	\$270,486
Fuel and rent of power.....	\$1,544,116	\$1,196,885	\$627,366
All other materials.....	\$3,206,721	\$3,023,000	\$2,743,390
Products, total value	\$19,872,717	\$15,411,032	\$12,267,900
Book and cover paper:			
Tons.....	80,439	66,256	61,138
Value.....	\$6,442,043	\$4,905,068	\$4,729,921
Writing and other fine paper:			
Tons.....	39,251	22,095	19,944
Value.....	\$3,508,067	\$2,322,427	\$1,749,511
Wrapping paper:			
Tons.....	63,995	58,192	36,110
Value.....	\$3,954,578	\$3,154,038	\$2,024,496
Manila (rope, jute, tag, etc.)—			
Tons.....	5,702	5,964	6,930
Value.....	\$670,071	\$582,976	\$585,224
Heavy (mill wrappers, etc.)—			
Tons.....	36,619	31,043	5,921
Value.....	\$1,777,450	\$1,366,455	\$205,034
Bogus or wood manila—			
Tons.....	6,167	1,571	11,457
Value.....	\$278,993	\$72,898	\$557,003
All other—			
Tons.....	15,507	19,614	11,802
Value.....	\$1,228,064	\$1,131,709	\$617,225
Boards:			
Tons.....	53,963	26,398	20,486
Value.....	\$1,406,309	\$688,358	\$595,414
Building, roofing, asbestos, and sheathing paper:			
Tons.....	60,168	67,797	45,923
Value.....	\$1,937,000	\$1,847,762	\$1,313,436
All other products.....	\$2,624,720	\$2,493,879	\$1,855,132
Wood pulp produced (including that used in mills where manufactured), total tons	136,850	83,114	85,433
Ground, tons.....	2,760	19,000	4,505
Soda fiber, tons.....	80,776	53,682	61,662
Sulphite fiber, tons.....	53,314	10,432	19,266
Machinery:			
Paper machines:			
Total number.....	126	134	122
Capacity, yearly, tons.....	419,207	327,595	237,434
Fourdriner—			
Number.....	68	65	59
Capacity per 24 hours, tons.....	736	580	(¹)
Cylinder—			
Number.....	58	69	63
Capacity per 24 hours, tons.....	706	543	(¹)
Pulp equipment:			
Grinders, number.....	5	5	29
Digesters, number.....	105	89	76
Soda fiber.....	83	73	(¹)
Sulphite fiber.....	22	16	(¹)
Capacity, yearly, tons of pulp.....	169,961	130,547	94,526
Ground, tons.....	16,908	4,400	(¹)
Soda, tons.....	87,993	73,873	(¹)
Sulphite, tons.....	65,150	52,274	(¹)

¹ Not reported separately.

During 1909 the industry used 64,654 tons of rags, including cotton and flax waste and sweepings, costing \$1,226,978, and 106,150 tons of old and waste paper, costing \$1,208,765. The increases in both items for the 10-year period 1899-1909 were large, being especially true of waste paper, the increased use of which reflects the scarcity of paper-making materials.

The total value of paper manufactured and of pulp manufactured for sale increased from \$12,267,900 in 1899 to \$15,411,032 in 1904, and \$19,872,717 in 1909, an increase of 62 per cent during the 10-year

period. Book and cover paper was the principal product in value and contributed about one-third of the total for all products in 1909. The product ranking next in value was wrapping paper, which had a value somewhat greater than that of writing and other fine paper.

The total amount of wood pulp produced, including 120,261 tons used in the establishments in which it was manufactured, increased from 85,433 tons in 1899 to 136,850 tons in 1909, a gain of 51,417 tons, or 60.2 per cent. Of the total production in 1909, 80,776 tons, or 59 per cent, consisted of soda fiber and 53,314 tons, or 39 per cent, of sulphite fiber.

Chemicals.—In the following table are shown the quantity and value of the principal products or groups of products reported for this industry, which does not include sulphuric, nitric, and mixed acids, in 1909 and 1904:

PRODUCT.	1909	1904
Total value.....	\$15,978,162	\$11,773,719
Acids:		
Muriatic—		
Pounds.....	16,753,080	
Value.....	\$176,318	(¹)
Citric, oxalic, lactic, and hydrofluoric.....	\$322,503	(¹)
All other.....	\$1,427,442	\$1,986,023
Sodas:		
Tons.....	25,690	(²)
Value.....	\$614,985	\$1,066,134
Alums:		
Pounds.....	84,273,500	100,832,827
Value.....	\$1,139,000	\$1,249,856
Coal-tar distillery products.....	\$318,946	\$15,120
Cyanides:		
Pounds.....	2,806,326	3,137,776
Value.....	\$337,567	\$435,770
Bleaching materials.....	\$8,839	\$35,644
Electrochemicals.....	\$903,196	(²)
Compressed or liquefied gases.....	\$930,873	\$382,330
Fine chemicals:		
Gold salts—		
Ounces.....	3,059	6,435
Value.....	\$35,630	\$65,249
Silver salts—		
Ounces.....	863,128	521,161
Value.....	\$299,414	\$211,812
All other, including alkaloids, platinum salts, and ether.....	\$4,004,389	\$2,842,634
Copperas:		
Pounds.....	21,531,000	6,932,050
Value.....	\$48,062	\$18,200
Epsom salts, tin salts, and zinc salts.....	\$499,756	\$416,380
All other general chemicals.....	\$4,795,557	\$1,879,840
All other products.....	\$115,685	\$1,168,727

¹ Included in other acids.

² Figures not available.

In the chemical industry proper the cost of materials increased \$2,934,676, or 40.4 per cent, from 1904 to 1909. In value of products the increase was \$4,204,443, or 35.7 per cent, during the same five-year period. In addition to the products shown in the table, chemicals valued at \$1,999,718 were manufactured by establishments included under other classifications.

Paint and varnish.—The next table shows the quantity and value of the paints and varnishes reported at the censuses of 1909, 1904, and 1899.

The largest gain reported for any product was that for white lead, both dry and in oil, which increased from 32,478,546 pounds, valued at \$1,516,121, in 1899, to 50,819,314 pounds, valued at \$2,885,786, in 1909. Paints mixed ready for use, pulp color sold moist, pyroxylin varnishes, and japans, dryers, and lacquers also show conspicuous increases.

PRODUCT.	1909	1904	1899
Total value.....	\$14,019,744	\$11,637,038	\$11,299,465
Pigments:			
White lead, dry—			
Pounds.....	18,418,107	13,562,796	¹ 32,478,546
Value.....	\$890,607	\$633,620	¹ \$1,516,121
Oxides of lead—			
Pounds.....	21,496,303	19,602,384	27,893,478
Value.....	\$1,183,596	\$1,039,468	\$1,338,959
Iron oxides and other earth and dry colors—			
Pounds.....	78,874,244	54,337,906	70,266,323
Value.....	\$772,332	\$768,675	\$933,425
Pulp colors sold moist—			
Pounds.....	6,158,396	3,343,289	594,379
Value.....	\$209,205	\$47,772	\$12,842
Paints in oil:			
White lead in oil—			
Pounds.....	32,401,207	35,780,225	(²)
Value.....	\$1,995,179	\$1,898,758	(²)
Pasta—			
Pounds.....	29,741,101	22,061,202	³ 59,071,523
Value.....	\$1,609,481	\$1,398,355	³ \$3,050,976
Already mixed for use—			
Gallons.....	3,083,523	2,190,972	2,163,259
Value.....	\$2,708,202	\$1,846,999	\$1,505,049
Varnishes and japans:			
Oleo-resinous varnishes—			
Gallons.....	397,010		
Value.....	\$356,165		
Damar and similar turpentine and benzine varnishes—			
Gallons.....	502,987	1,174,352	1,408,656
Value.....	\$309,029	\$1,082,384	\$1,236,672
Spirit varnishes, not turpentine—			
Gallons.....	72,567	83,536	45,130
Value.....	\$93,945	\$136,950	\$77,653
Pyroxylin varnishes—			
Gallons.....	56,808	39,073	
Value.....	\$85,269	\$16,585	
Dryers, japans, and lacquers—			
Gallons.....	2,190,656	(⁴)	(⁴)
Value.....	\$800,082	\$257,502	\$458,936
All other.....	\$170,121	\$374,459	\$92,455
Fillers, putty, and water paints.....	\$498,517	\$360,439	(²)
All other products.....	\$2,338,073	\$1,775,012	\$1,076,377

¹ Includes "White lead in oil."
² Included in "White lead, dry."

³ Includes paste fillers.
⁴ Not reported.

Butter, cheese, and condensed milk.—In 1909 Pennsylvania ranked sixth among the states in the factory production of butter, fifth in cheese, and seventh in condensed milk. The following table shows the quantity and value of the several products for 1909, 1904, and 1899:

PRODUCT.	1909	1904	1899
Total value.....	\$13,544,065	\$11,681,115	\$10,290,006
Butter:			
Packed solid—			
Pounds.....	9,283,220	10,660,820	13,458,287
Value.....	\$2,741,957	\$2,278,130	\$2,767,190
Prints or rolls—			
Pounds.....	21,200,997	25,094,021	23,678,874
Value.....	\$6,871,342	\$6,413,222	\$5,536,722
Cheese:			
Full cream—			
Pounds.....	9,423,849		
Value.....	\$1,314,704		
Part cream—			
Pounds.....	490,685	11,453,424	10,267,443
Value.....	\$42,921	\$1,007,815	\$888,733
Other kinds—			
Pounds.....	1,310,503		
Value.....	\$57,265		
Condensed milk:			
Sweetened—			
Pounds.....	10,777,613	19,160,432	
Value.....	\$738,399	\$1,177,969	2,862,000
Unsweetened—			
Pounds.....	15,683,771	1,204,268	2,556,835
Value.....	\$743,014	\$51,633	
Cream sold:			
Pounds.....	4,754,954	1,778,703	686,316
Value.....	\$531,432	\$161,913	\$399,108
All other products.....	\$503,031	\$490,423	\$445,418

This table shows an increase in 1909, as compared with 1899, of \$3,254,059, or 31.6 per cent, in the total value of products. Butter contributed 71 per cent of the total value of products in 1909. The quantity produced decreased between 1899 and 1904 and again

between 1904 and 1909, but the value increased a little at each census. Cheese, which contributed 10.4 per cent of the total value of products of the industry in 1909, showed no very marked change in either quantity or value, while condensed milk, which contributed 10.9 per cent of the total value of products, shows enormous increases in both quantity and value. Cream sold as such also shows a very large increase during the decade.

Brick and tile, and pottery, terra-cotta, and fire-clay products.—Statistics for these two allied industries for 1909 were collected and compiled by the Bureau of the Census in cooperation with the Geological Survey. The quantities given for that year include the entire output of these products, whether manufactured by establishments covered by the industry designation or by establishments primarily engaged in some other industry, while the amounts for 1904 and 1899 include only the products of establishments engaged chiefly in manufacturing such products. The value of the table for comparative purposes is not appreciably affected, however, because the quantities reported by establishments not covered by the industry designation were relatively very small.

The following table presents statistics for this industry, as above described, for 1909, 1904, and 1899:

PRODUCT.	1909	1904	1899
Total value	\$22,297,310	\$18,039,187	\$14,081,844
Brick and tile, terra-cotta, and fire-clay products.....	\$19,463,479	\$16,516,697	\$12,917,327
Brick.....	\$17,246,388	\$13,709,969	\$11,156,544
Common—			
Thousands.....	872,658	809,154	780,387
Value.....	\$5,607,490	\$4,993,194	\$4,519,324
Fire—			
Thousands.....	147,836	356,606	558,016
Value.....	\$8,107,807	\$6,289,231	\$4,921,339
Vitrified paving, etc.—			
Thousands.....	116,735	91,646	89,017
Value.....	\$1,328,317	\$941,588	\$702,782
Front, including fancy colored—			
Thousands.....	194,695	121,798	88,784
Value.....	\$2,111,556	\$1,281,558	\$959,000
Fancy or ornamental.....	\$27,963	\$134,854	\$54,099
Sand lime—			
Thousands.....	10,691	7,792	.....
Value.....	\$62,255	\$69,544	.....
Drain tile.....	\$14,668	\$14,099	\$26,519
Other tile.....	\$441,243	\$215,688	\$61,036
Sewer pipe.....	\$445,594	\$809,374	\$204,400
Architectural terra-cotta.....	\$428,522	\$341,077	\$139,100
Fireproofing, terra-cotta lumber, and hollow building tile or blocks.....	\$324,860	\$198,437	\$110,210
Stove lining.....	\$97,270	(¹)	\$106,851
All other.....	\$464,934	\$1,228,053	\$1,112,667
Pottery	\$1,624,335	\$1,325,581	\$1,164,517
White ware, including C. C. ware, white granite, semiporcelain ware, and semivitreous porcelain ware.....	\$812,338	\$547,798	\$200,757
Sanitary ware.....	\$252,951	\$86,058	\$41,727
Stoneware and yellow and Rockingham ware.....	\$297,029	\$366,423	\$174,450
China, bone china, delft, and bell-leak ware.....	\$91,757	\$30,000	.....
Red earthenware.....	\$159,796	\$138,552	\$99,786
All other.....	\$10,464	\$138,770	\$647,797
All other products	\$1,209,496	\$196,909	.....

¹ Includes refractory block or tile, boiler and locomotive tile, and tank blocks and other refractory products (9-inch equivalent).

² Not reported separately.

Measured by value of products the industries as a whole and practically all the several branches individually show a steady increase. In 1909 products to the value of \$22,297,310 were manufactured, an increase of \$4,258,123, or 23.6 per cent, over 1904 and

of \$8,215,466, or 58.3 per cent, over 1899. Of the total value of products in 1909, brick of all kinds contributed 77.3 per cent, as compared with 76 per cent in 1904 and 79.2 per cent in 1899. Common brick increased 92,271 thousand, or 11.8 per cent, in quantity and \$1,088,166, or 24.1 per cent, in value during the decade, while fire brick shows an increase of 64.7 per cent in value. All the other kinds of brick for which quantities are given show increases in both quantity and value. Sewer pipe shows a large decrease in 1909 as compared with 1904 but an increase over 1899. Architectural terra cotta, and fire-proofing and other miscellaneous building materials, show large increases for both 1904 and 1909.

Pottery products, as a whole, which in 1909 contributed 7.3 per cent of the total value of products for the combined industries, show considerable growth. The most important single item, white ware, etc., representing, in 1909, 50 per cent of the total value of all pottery products, shows a rapid increase in the value of the output. The value of stoneware, while showing an increase for the decade, decreased considerably from 1904 to 1909. Chinaware and the other finer grades of ware combined are relatively unimportant but show a large growth, more than trebling in value. Red earthenware also shows a steady increase in value.

Carriages and wagons.—The following table shows the number and value of the several products of this industry for 1909, 1904, and 1899:

PRODUCT.	1909	1904	1899
Total value	\$12,748,383	\$11,493,128	\$10,455,018
Carriages, family and pleasure:			
Number.....	23,395	33,467	41,400
Value.....	\$1,738,125	\$2,355,043	\$2,816,780
Wagons:			
Number.....	33,634	35,395	27,138
Value.....	\$2,996,485	\$2,839,372	\$2,161,435
Business—			
Number.....	21,414	21,722	(¹)
Value.....	\$2,143,007	(¹)	(¹)
Farm—			
Number.....	11,964	13,321	(¹)
Value.....	\$766,499	(¹)	(¹)
Government, municipal, etc.—			
Number.....	256	352	(¹)
Value.....	\$86,979	(¹)	(¹)
Public conveyances:			
Number.....	482	333	141
Value.....	\$133,811	\$117,093	\$27,645
Sleighs and sleds:			
Number.....	3,210	5,551	5,509
Value.....	\$90,619	\$150,461	\$118,449
All other products, including parts and repair work.....	\$7,789,343	\$6,031,159	\$5,330,707

¹ Not reported.

The increase of \$2,293,367 shown in the total value of products for the decade is more than covered by the advance in the one item "All other products, including parts and repair work," the gain in the value of which was \$2,458,636. Wagons and public conveyances combined show an increase in value of \$941,216. A decided decrease is shown in the number and value of family and pleasure carriages and sleighs and sleds.

Laundries.—Statistics for steam laundries are not included in the general tables or in the tables for manufacturing industries. There were 385 such establishments in Pennsylvania, 92 of which were in Phila-

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delphia, 26 in Pittsburgh, 9 in Harrisburg, 8 in Reading, and 7 each in Erie, Wilkes-Barre, Williamsport, and York. No other city or borough having more than 10,000 inhabitants reported as many as 7 laundries. The following statement summarizes the statistics:

Number of establishments.....	385
Persons engaged in the industry.....	10,915
Proprietors and firm members.....	436
Salaried employees.....	840
Wage earners (average number).....	9,639
Primary horsepower.....	10,730
Capital.....	\$6,685,132
Expenses.....	6,821,427
Services.....	4,167,836
Materials.....	1,449,517
Miscellaneous.....	1,204,074
Amount received for work done.....	8,331,834

The most common form of ownership was the individual, with 218 establishments. Partnership or firm ownership was represented by 100 establishments and corporate ownership by 67. Ninety-eight establishments had receipts for the year's business of less than \$5,000; 174, receipts of \$5,000 but less than \$20,000; 98, receipts of \$20,000 but less than \$100,000; and 15, receipts of \$100,000 but less than \$1,000,000.

The number of wage earners employed each month and the percentage 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.....	9,331	94.7	July.....	9,756	99.1
February.....	9,357	95.0	August.....	9,716	98.6
March.....	9,380	95.2	September.....	9,820	99.7
April.....	9,474	96.1	October.....	9,849	100.0
May.....	9,630	97.8	November.....	9,802	99.5
June.....	9,771	99.2	December.....	9,782	99.8

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.....		10,730
Owned:		
Steam.....	345	9,124
Gas.....	52	987
Rented:		
Electric.....	136	549
Other.....		70

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

KIND.	Unit.	Quantity.
Anthracite coal.....	Tons.....	48,729
Bituminous coal.....	Tons.....	42,139
Coke.....	Tons.....	444
Wood.....	Cords.....	71
Oil.....	Barrels.....	166
Gas.....	1,000 feet.....	433,028

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.....	267	539
Persons engaged in the industry.....	675	773
Proprietors and firm members.....	342	611
Salaried employees.....	1	1
Wage earners (average number).....	332	162
Primary horsepower.....	5,541	13,893
Capital.....	\$388,261	\$1,570,025
Expenses.....	127,663	2,678,065
Services.....	103,648	47,804
Materials.....	5,025	1,578,513
Miscellaneous.....	18,990	51,748
Value of products.....	284,056	1,307,504

¹ Includes estimate of all grain ground. A similar estimate of the value of the 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 employes.	Wage earners (average number).	Capital.	Salaries.								Wages.	Cost of materials.	Value of products.	Value added by manufacture.
STATE—All industries	1909	27,563	1,002,171	29,743	94,885	877,543	2,921,547	\$2,749,006	\$110,897	\$455,627	\$1,582,560	\$3,626,742	\$1,044,182						
	1904	23,485	855,392	26,029	66,081	783,282	2,302,398	1,995,837	73,269	367,961	1,142,943	1,955,551	812,608						
	1899	23,452			43,935	663,960	1,716,694	1,449,815	46,145	296,876	958,301	1,649,882	691,581						
Agricultural implements	1909	36	2,671	37	233	2,401	3,642	6,491	257	1,223	2,082	4,805	2,723						
	1904	43	2,668	54	220	2,394	3,290	5,460	227	1,103	2,075	5,017	2,942						
	1899	50	1,825	64	107	1,564	2,240	4,102	184	688	1,232	3,193	1,906						
Artificial flowers and feathers and plumes.	1909	30	917	35	77	805	75	943	72	262	675	1,319	644						
	1904	19	627	27	47	553	52	409	38	170	367	722	355						
	1899	25	950	35	42	873	30	545	53	209	467	950	483						
Automobiles, including bodies and parts.	1909	44	3,566	29	338	3,199	2,746	6,971	384	1,808	4,051	6,532	2,451						
	1904	6	631		65	566	423	1,453	79	352	601	1,223	628						
	1899	8			16	60		297	18	43	31	99	68						
Belting and hose, leather	1909	17	243	16	71	156	363	973	74	105	1,011	1,379	368						
	1904	14	182	17	38	127	205	709	35	94	541	865	324						
	1899	9	125	13	25	87		488	15	53	470	668	196						
Boots and shoes, including cut stock findings.	1909	140	11,829	167	840	10,822	4,337	11,661	1,161	4,266	12,064	20,219	8,165						
	1904	133	9,685	195	500	8,990	3,221	7,394	485	3,263	8,907	14,884	5,977						
	1899	169	10,162	241	674	9,247		7,051	588	3,148	8,682	13,830	6,148						
Boxes, cigar	1909	77	1,970	96	73	1,801	1,818	1,020	67	580	1,252	2,328	1,076						
	1904	88	1,773	115	79	1,585	1,754	1,194	48	428	1,023	1,879	856						
	1899	101	1,334	128	36	1,170		993	22	319	910	1,553	643						
Boxes, fancy and paper	1909	118	5,050	133	313	4,604	2,121	3,422	308	1,472	2,290	5,184	2,894						
	1904	98	4,516	118	219	4,179	1,569	2,388	199	1,676	1,676	3,906	2,230						
	1899	87	3,670	101	126	3,443		1,978	110	678	1,260	2,986	1,726						
Brass and bronze products	1909	104	2,524	94	350	2,080	4,996	8,392	456	1,284	5,605	8,455	2,850						
	1904	98	2,029	100	234	1,695	5,261	5,261	273	949	3,271	5,443	2,172						
	1899	85	2,106	92	233	1,781		4,348	251	830	3,329	5,989	2,060						
Bread and other bakery products	1909	3,185	17,538	3,375	2,242	12,221	10,806	30,888	1,807	6,528	27,330	45,850	18,320						
	1904	2,817	15,011	3,009	1,038	10,964	6,044	19,100	861	5,392	19,300	33,370	14,070						
	1899	2,443	10,981	2,552	1,031	7,398		10,986	721	3,255	11,055	20,724	9,729						
Brick and tile	1909	326	8,943	349	536	8,058	38,247	20,150	540	3,881	2,453	9,225	6,772						
	1904	370	8,430	445	424	7,561	31,235	13,887	355	3,213	1,590	7,280	6,681						
	1899	385	7,509	507	269	6,733	20,921	10,507	248	2,626	1,138	5,954	4,816						
Brooms and brushes	1909	139	1,139	162	117	860	811	1,552	97	410	1,255	2,304	1,049						
	1904	152	1,109	173	88	848	467	961	83	365	813	1,708	895						
	1899	167	1,219	206	88	925		1,026	62	348	941	1,769	828						
Butter, cheese, and condensed milk	1909	536	2,093	635	281	1,177	7,613	4,291	155	556	11,674	13,544	1,870						
	1904	645	2,152	623	311	1,218	9,483	3,649	89	556	9,656	11,881	1,925						
	1899	749	1,795	692	127	976	8,858	3,033	46	46	8,712	10,280	1,578						
Buttons	1909	24	1,219	25	71	1,123	858	977	95	404	746	1,565	819						
	1904	21	1,087	20	58	1,009	706	719	59	305	360	900	540						
	1899	21	1,212	30	42	1,140		557	34	321	403	999	596						
Canning and preserving	1909	83	4,379	97	1,529	2,753	3,474	8,867	1,518	947	4,065	9,484	4,819						
	1904	89	3,405	97	1,093	2,215	2,894	6,156	1,123	762	4,033	8,065	4,032						
	1899	77			797	2,197		3,499	730	637	2,927	6,039	3,112						
Carpets and rugs, other than rag	1909	93	12,078	103	460	11,510	13,073	24,721	782	5,169	14,648	24,879	10,231						
	1904	102	14,356	136	504	13,716	11,871	22,284	652	5,829	16,706	27,120	10,414						
	1899	93	13,358	103	336	12,919	10,537	17,958	375	5,331	13,774	23,113	9,339						
Carriages and wagons and materials	1909	655	8,757	781	478	7,498	11,544	14,365	500	3,861	5,707	12,748	7,041						
	1904	656	8,689	825	403	7,461	9,197	12,368	307	3,647	4,902	11,493	6,591						
	1899	797			318	6,399		10,684	296	3,070	4,246	10,455	6,209						
Cars and general shop construction and repairs by steam-railroad companies.	1909	132	50,545		3,900	46,645	50,774	45,341	2,989	30,157	41,401	76,035	34,634						
	1904	128	44,109		2,271	41,838	32,157	30,418	1,853	25,517	32,361	61,021	28,630						
	1899	144	29,619		1,065	28,554	12,386	19,182	811	16,826	23,148	43,065	19,917						
Cars and general shop construction and repairs by street-railroad companies.	1909	65	2,568		126	2,442	4,370	2,464	110	1,477	1,094	2,747	1,653						
	1904	9	1,220		44	1,178	40	1,164	45	687	483	1,259	776						
	1899	10	1,027		22	1,005		766	13	574	596	1,245	649						
Cars, steam-railroad, not including operations of railroad companies.	1909	13	8,799		1,033	7,766	31,732	31,282	1,242	4,819	19,002	27,510	8,608						
	1904	9	6,007		546	5,461	13,842	31,524	842	3,061	13,821	19,423	5,607						
	1899	11	6,200		6	5,840	4,426	33,829	426	3,112	12,189	19,261	7,072						
Cement	1909	27	8,902		822	8,080	102,904	50,856	1,047	3,875	10,108	18,855	8,747						
	1904	23	6,891		379	6,509	39,174	28,165	484	2,988	4,300	10,234	5,874						
	1899																		
Chemicals	1909	37	3,573	19	369	3,185	9,771	23,585	559	1,892	10,200	15,978	5,778						
	1904	41	3,692	29	290	3,373	10,662	20,657	456	1,892	7,265	11,774	4,609						
	1899																		
Chocolate and cocoa products	1909	6	1,033		170	868	2,885	3,484	286	324	2,955	4,811	1,856						
	1904	4	407		53	351	865	1,124	83	121	1,390	2,134	744						
	1899	3	174		3	123		800	35	40	870	1,039	169						
Clocks and watches, including cases and materials.	1909	8	1,587	3	189	1,395	1,033	4,651	183	728	1,172	2,873	1,701						
	1904	6	906	5	103	798	596	2,774	107	373	814	1,549	785						
	1899	6			74	1,180		3,387	75	549	801	1,761	950						

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 Comparable figures not available.

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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 employees.	Wage earners (average number).							
STATE—Continued													
Clothing, men's, including shirts.....	1909	696	26,405	1,099	1,683	23,623	5,288	\$20,790	\$1,692	\$8,992	\$19,863	\$39,682	\$19,819
	1904	451	19,570	706	1,299	17,574	4,198	16,644	1,015	5,853	16,617	31,714	15,037
	1899	621	.....	.....	1,166	17,198	.....	13,443	1,097	6,083	15,405	30,055	14,650
Clothing, women's.....	1909	401	18,080	646	1,733	15,701	2,514	12,255	1,667	7,140	18,156	32,837	14,681
	1904	223	8,879	330	869	8,690	1,583	5,992	619	3,427	7,903	15,089	7,183
	1899	230	8,253	346	596	8,311	802	5,197	525	2,606	6,270	11,695	6,425
Coffins, burial cases, and undertakers' goods.	1909	36	1,309	36	170	1,103	1,447	514	188	514	1,575	2,757	1,182
	1904	24	985	23	94	868	1,137	1,733	94	427	1,005	1,989	984
	1899	22	767	27	74	666	.....	2,017	71	281	585	1,214	629
Coke.....	1909	146	16,219	83	805	15,331	26,091	68,023	943	8,426	33,762	51,816	18,054
	1904	110	10,975	72	749	10,154	44,478	56,839	734	5,173	14,979	28,924	13,945
	1899	89	9,841	40	518	9,283	24,525	20,213	481	4,517	11,678	22,282	10,604
Confectionery.....	1909	251	6,436	255	773	5,408	3,869	8,204	813	1,760	8,203	13,542	5,339
	1904	150	5,543	162	652	4,729	3,603	6,079	536	1,400	5,581	10,073	4,192
	1899	135	.....	.....	616	4,249	.....	4,367	490	1,101	4,294	7,483	3,189
Cooperage and wooden goods, not elsewhere specified.	1909	133	1,903	155	118	1,630	3,681	3,631	132	756	2,989	4,680	1,041
	1904	129	1,745	139	110	1,496	2,970	2,563	108	720	2,419	3,973	1,554
	1899	110	.....	.....	66	1,326	.....	2,091	48	565	2,030	3,213	1,183
Copper, tin, and sheet-iron products....	1909	339	7,992	382	795	6,815	8,245	17,683	889	3,444	8,851	17,197	8,346
	1904	205	5,731	260	450	5,021	2,535	9,192	475	2,523	4,949	9,687	4,738
	1899	179	.....	.....	349	3,677	.....	5,591	324	1,652	3,643	7,144	3,501
Cordage and twine and jute and linen goods.	1909	18	2,228	12	97	2,119	4,630	5,161	185	685	3,001	4,805	1,804
	1904	120	2,328	16	80	2,232	4,344	4,708	156	666	3,648	5,138	1,490
	1899	21	2,798	25	90	2,683	.....	6,163	104	762	5,448	7,257	1,809
Cork, cutting.....	1909	10	1,789	9	53	1,727	2,045	3,362	194	535	1,669	2,965	1,296
	1904	13	2,097	10	61	2,026	1,989	3,114	116	620	1,802	3,176	1,374
	1899	10	1,590	9	43	1,538	.....	1,483	73	402	1,120	2,188	1,068
Cotton goods, including cotton small wares.	1909	175	17,386	156	937	16,293	24,589	33,692	1,612	7,034	18,757	33,917	15,160
	1904	165	16,099	209	627	15,263	22,611	27,174	918	5,943	14,322	26,300	11,978
	1899	178	17,817	241	565	17,011	23,403	24,332	742	6,037	13,177	26,448	12,271
Crucibles.....	1909	5	135	4	25	106	336	910	59	60	430	728	298
	1904	5	124	1	34	89	360	959	63	53	534	784	250
	1899	5	87	11	7	69	.....	617	12	40	902	1,147	245
Cutlery and tools, not elsewhere specified.	1909	129	4,832	114	468	4,250	11,311	12,406	549	2,280	3,431	8,022	4,501
	1904	102	4,096	96	265	3,735	13,416	8,311	307	1,785	2,094	5,819	3,725
	1899	82	2,877	101	149	2,127	.....	4,201	183	1,046	1,523	3,741	2,218
Dentists' materials.....	1909	23	1,218	27	119	1,072	427	2,799	254	464	1,325	2,745	1,420
	1904	20	1,010	21	102	887	339	2,079	108	308	1,410	2,337	927
	1899	18	720	20	70	630	.....	1,288	79	327	981	1,829	848
Dyeing and finishing textiles.....	1909	135	6,688	155	447	6,086	13,560	13,242	598	2,988	5,331	12,059	6,728
	1904	123	5,070	161	324	4,585	9,712	9,923	445	2,076	2,701	6,783	4,085
	1899	105	5,087	155	216	4,716	10,100	7,680	260	2,066	3,175	7,038	3,863
Electrical machinery, apparatus, and supplies.	1909	84	14,641	42	3,574	11,025	33,829	59,974	4,058	6,237	13,535	31,351	17,816
	1904	80	12,206	56	2,746	9,404	29,238	58,393	3,090	5,300	11,365	26,258	14,893
	1899	63	8,511	48	646	7,817	8,137	20,968	837	4,003	11,373	19,113	7,740
Explosives.....	1909	27	1,225	20	172	1,033	4,594	6,313	231	630	4,088	6,388	2,300
	1904	40	1,079	19	163	897	5,699	5,320	233	527	2,516	4,013	1,497
	1899	36	748	17	102	629	3,673	2,819	130	320	1,500	2,595	1,095
Fancy articles, not elsewhere specified..	1909	52	951	55	68	828	498	990	57	322	592	1,385	793
	1904	44	783	54	54	675	358	480	46	206	366	894	528
	1899	48	823	64	47	712	.....	479	25	210	414	886	472
Fertilizers.....	1909	48	1,517	52	241	1,224	5,174	6,532	293	575	4,613	6,543	1,930
	1904	43	1,135	48	129	958	4,551	5,386	170	447	2,891	4,085	1,204
	1899	51	975	43	167	765	3,835	3,803	201	352	2,584	3,644	1,060
Files.....	1909	7	1,296	4	77	1,217	1,313	2,686	91	528	427	1,540	1,113
	1904	8	993	8	32	953	1,082	1,368	53	390	395	1,127	732
	1899	14	1,205	17	39	1,149	.....	1,650	58	445	458	1,236	778
Flour-mill and gristmill products.....	1909	1,450	4,696	1,896	368	2,432	69,212	21,277	372	1,188	38,170	44,783	6,613
	1904	1,195	4,496	1,558	306	2,632	61,538	18,766	237	1,247	33,205	38,519	5,314
	1899	1,073	.....	.....	265	1,966	.....	14,986	202	946	24,565	29,571	4,706
Foundry and machine-shop products...	1909	1,695	100,505	1,389	12,295	86,821	162,414	283,556	15,034	51,366	101,011	210,746	109,735
	1904	1,415	85,974	1,371	9,022	75,581	127,846	216,023	10,712	40,664	69,036	153,393	84,337
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fur goods.....	1909	58	349	72	50	227	14	1,086	37	160	544	1,217	673
	1904	27	255	36	29	190	5	424	20	110	373	718	345
	1899	26	.....	.....	43	219	.....	607	27	122	368	785	417
Furniture and refrigerators.....	1909	304	11,338	376	1,038	9,924	17,211	18,542	1,232	4,829	9,039	18,952	9,013
	1904	229	8,944	250	647	8,047	12,292	11,163	640	3,608	5,439	12,776	7,337
	1899	197	7,410	301	620	6,589	.....	7,961	463	2,827	4,524	10,669	5,545
Gas and electric fixtures and lamps and reflectors.	1909	75	1,876	73	321	1,462	1,249	2,803	333	765	1,239	2,962	1,723
	1904	60	1,628	56	224	1,348	783	2,130	255	703	835	2,543	1,708
	1899	48	1,562	53	157	1,352	.....	2,261	181	677	1,055	2,512	1,457

1 Excluding statistics for one establishment, to avoid disclosure of individual operations.
 2 Comparable figures not available.

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).							
STATE—Continued.													
Gas, illuminating and heating.....	1909	99	4,584	13	1,452	3,119	9,374	\$61,857	\$1,239	\$1,501	\$4,099	\$15,840	\$11,741
	1904	90	3,953	3	1,068	2,882	57,064	846	1,478	3,143	10,809	7,668	7,668
	1899	89	3,721	.....	577	3,144	3,091	47,313	457	1,506	3,161	7,871	4,720
Glass.....	1909	112	24,924	34	1,180	23,710	55,182	53,632	1,730	13,436	12,634	32,818	20,184
	1904	122	21,993	32	1,167	20,794	47,750	40,612	1,597	12,518	9,325	27,672	18,347
	1899	119	20,343	81	842	19,420	29,595	28,287	1,110	10,287	6,456	22,011	15,676
Hats and caps, other than felt, straw, and wool.	1909	53	877	71	62	744	163	652	70	273	543	1,097	554
	1904	43	773	60	29	684	149	453	43	264	520	1,063	537
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hats, fur-felt.....	1909	38	7,537	46	271	7,220	5,335	14,439	423	3,725	5,013	13,023	8,010
	1904	25	4,931	29	283	4,619	2,745	8,778	346	2,122	2,729	7,350	4,621
	1899	20	3,092	22	180	2,590	1,737	5,726	270	1,187	1,867	4,243	2,376
Hosiery and knit goods.....	1909	464	40,248	509	1,533	38,206	21,797	38,989	1,658	11,750	27,218	49,658	22,440
	1904	377	30,054	506	1,377	28,171	14,749	23,933	1,067	7,961	16,038	30,812	14,774
	1899	327	22,648	376	688	21,584	9,478	15,760	638	5,834	10,930	21,929	10,993
Ice, manufactured.....	1909	170	2,086	116	364	1,666	35,890	14,404	338	1,023	1,225	4,823	3,598
	1904	109	1,577	57	254	1,236	23,576	9,712	262	732	711	2,936	2,225
	1899	73	1,227	51	246	930	16,646	8,260	170	538	392	2,039	1,647
Ink, printing.....	1909	8	246	6	75	165	483	742	94	105	623	1,050	427
	1904	8	178	6	73	99	443	590	86	73	403	684	281
	1899	7	114	7	29	78	.....	471	61	48	204	408	204
Iron and steel, blast furnaces.....	1909	66	16,215	34	1,660	14,521	476,680	194,708	2,400	9,457	142,074	168,578	26,504
	1904	65	14,782	24	891	13,867	304,154	107,742	1,114	7,764	86,322	107,455	21,133
	1899	77	10,712	28	609	10,075	172,326	72,513	787	8,038	64,005	101,575	37,480
Iron and steel, steel works and rolling mills.	1909	189	137,433	34	10,488	126,911	896,440	522,898	13,304	85,113	329,013	500,344	171,331
	1904	186	119,082	49	8,129	110,904	820,823	355,592	10,056	65,306	237,875	363,774	125,899
	1899	214	99,350	102	4,469	94,789	575,030	237,216	5,388	53,870	219,048	332,870	113,822
Iron and steel pipe, wrought.....	1909	11	4,143	5	265	3,873	12,472	15,325	337	2,177	14,022	18,291	4,269
	1904	11	3,261	3	150	3,048	8,277	8,506	219	1,340	7,172	9,621	2,449
	1899	10	3,797	1	121	3,675	.....	11,698	151	1,679	11,583	15,384	3,798
Jewelry.....	1909	75	624	96	72	456	160	912	54	292	597	1,275	678
	1904	43	603	60	51	492	164	762	43	206	483	1,040	557
	1899	22	522	28	60	404	.....	685	39	201	253	693	440
Leather goods.....	1909	156	3,124	210	390	2,524	1,107	4,527	470	1,137	3,153	5,824	2,671
	1904	134	3,012	170	320	2,522	900	3,553	286	1,081	2,643	5,153	2,510
	1899	134	.....	.....	202	2,396	.....	2,464	182	852	1,878	3,998	2,120
Leather, tanned, curried, and finished..	1909	163	14,970	151	811	14,008	37,440	80,989	1,344	6,801	59,113	77,926	18,813
	1904	205	15,383	216	754	14,413	31,075	72,972	927	6,418	55,412	69,428	14,016
	1899	254	14,162	260	506	13,396	23,750	57,320	644	5,458	42,404	55,615	13,211
Lime.....	1909	348	3,791	393	140	3,258	8,682	6,930	137	1,259	1,038	3,342	2,304
	1904	124	2,601	143	62	2,366	4,906	3,979	96	892	764	2,515	1,751
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Liquors, distilled.....	1909	88	1,144	148	272	724	7,578	16,217	360	411	3,112	14,367	11,255
	1904	85	807	111	149	547	5,585	8,748	231	294	2,288	4,902	2,614
	1899	73	667	99	97	471	3,409	5,840	123	250	1,569	5,358	3,789
Liquors, malt.....	1909	237	9,007	131	1,642	7,234	54,360	94,135	3,261	5,453	12,610	47,713	35,103
	1904	225	7,076	153	1,059	5,864	40,519	68,884	2,253	4,072	9,277	34,864	25,587
	1899	208	5,462	171	816	4,505	29,472	63,684	1,474	2,884	6,610	29,163	22,553
Lumber and timber products.....	1909	2,667	32,073	3,473	1,727	26,873	113,412	54,638	1,758	13,558	27,314	57,454	30,140
	1904	1,866	31,262	2,527	1,595	27,140	93,228	44,336	1,507	13,520	24,286	56,713	32,427
	1899	2,273	.....	.....	1,160	31,008	109,876	45,852	979	13,017	24,964	53,886	28,922
Marble and stone work.....	1909	596	10,639	764	611	9,264	29,037	13,964	585	4,860	3,720	11,570	7,850
	1904	255	5,215	340	261	4,614	11,171	6,260	285	2,611	2,032	6,710	4,678
	1899	280	.....	.....	162	3,241	.....	4,912	144	1,793	2,153	5,373	3,220
Mattresses and spring beds.....	1909	83	961	84	132	745	1,102	1,655	118	361	1,333	2,223	890
	1904	65	906	73	83	750	1,143	1,241	94	345	1,110	2,002	892
	1899	68	.....	.....	93	782	.....	965	69	298	1,144	1,876	732
Millinery and lace goods.....	1909	105	4,697	141	321	4,235	841	3,552	288	1,327	3,754	6,770	3,016
	1904	53	2,315	63	143	2,089	1,135	1,272	100	645	1,483	2,759	1,276
	1899	41	1,071	50	75	940	.....	670	57	305	792	1,504	772
Musical instruments, pianos and organs and materials.	1909	30	1,331	21	128	1,182	1,260	3,158	165	505	1,248	2,382	1,194
	1904	28	1,110	20	82	1,008	877	2,286	104	525	646	1,757	1,111
	1899	31	807	36	64	707	737	1,389	91	415	613	1,488	876
Optical goods.....	1909	24	744	24	141	579	292	926	117	219	461	1,063	602
	1904	18	421	20	49	352	184	629	55	120	155	471	316
	1899	17	.....	.....	54	424	.....	497	35	128	195	512	317
Paint and varnish.....	1909	114	2,747	105	650	1,992	9,862	14,834	947	1,102	9,201	14,020	4,819
	1904	98	2,432	96	517	1,819	7,714	12,319	613	928	8,065	11,637	3,572
	1899	93	2,405	64	525	1,816	6,925	12,080	625	856	6,595	11,209	4,704
Paper and wood pulp.....	1909	62	7,196	32	508	6,656	66,910	27,747	820	3,303	11,398	19,873	8,475
	1904	65	6,283	53	324	5,906	54,837	21,469	518	2,839	8,510	15,411	6,901
	1899	73	5,195	74	281	4,840	41,840	16,424	385	1,969	6,374	12,268	5,594

1 Comparable figures not available.

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

3 Not reported separately.

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

STATISTICS OF MANUFACTURES.

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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.													
Paper goods, not elsewhere specified.....	1909	34	1,700	32	311	1,357	1,348	\$3,304	\$320	\$538	\$2,225	\$3,719	\$1,494
	1904	1 28	771	39	105	627	549	790	119	240	985	1,662	677
	1899	1 20	404	25	47	422	-----	749	44	154	651	1,194	543
Patent medicines and compounds and druggists' preparations.	1909	367	4,299	334	1,204	2,761	2,619	12,409	1,342	1,145	5,310	12,656	7,346
	1904	243	3,420	235	860	2,325	1,402	7,899	721	824	4,087	9,400	5,373
	1899	195	3,276	212	747	2,317	-----	7,775	677	831	3,775	8,945	5,170
Petroleum, refining.....	1909	41	3,423	36	487	2,900	35,212	38,990	768	1,861	47,440	53,088	5,648
	1904	43	4,057	22	408	4,227	11,609	32,847	557	2,371	38,922	47,400	8,538
	1899	38	3,616	40	277	3,299	13,323	26,681	403	1,682	27,514	34,978	7,464
Photo-engraving.....	1909	31	682	33	160	489	197	660	175	446	231	1,132	901
	1904	23	623	32	148	443	168	535	110	301	128	802	674
	1899	17	335	22	43	270	-----	295	35	169	59	379	320
Pottery, terra-cotta, and fire-clay products.	1909	139	9,784	99	682	9,003	23,142	27,225	856	4,357	4,109	13,072	8,963
	1904	158	9,375	87	619	8,669	23,475	25,707	738	3,979	2,909	10,759	7,850
	1899	143	9,512	172	468	8,872	16,057	11,309	451	3,007	2,452	8,127	5,675
Printing and publishing.....	1909	2,461	36,783	2,557	9,530	24,696	25,839	71,453	8,836	14,385	22,753	70,584	47,831
	1904	2,162	31,070	2,354	6,397	22,328	20,029	51,094	6,218	12,093	16,074	55,063	38,089
	1899	1,969	26,464	2,271	4,292	19,901	-----	41,772	3,969	9,785	11,196	40,354	29,158
Safes and vaults.....	1909	7	777	1	81	695	1,163	1,827	95	391	643	1,338	695
	1904	7	841	3	76	762	891	1,282	82	414	542	1,344	802
	1899	6	425	3	52	370	-----	753	55	164	230	721	491
Saws.....	1909	15	2,087	18	193	1,876	3,399	5,901	205	1,158	1,406	3,794	2,388
	1904	10	1,909	11	61	1,837	2,574	4,747	117	1,025	1,367	3,323	1,956
	1899	12	1,513	15	87	1,411	-----	4,602	93	735	996	2,500	1,504
Shipbuilding, including boat building..	1909	31	3,833	34	241	3,558	7,771	15,203	415	2,120	2,710	6,178	3,468
	1904	33	6,860	28	321	6,511	8,583	18,007	492	3,473	5,180	10,327	5,147
	1899	38	7,279	41	161	7,077	19,366	14,141	254	3,545	7,173	14,493	7,320
Shoddy.....	1909	20	518	32	36	450	2,170	1,627	47	186	1,463	2,051	588
	1904	23	429	35	34	360	1,969	1,216	43	142	1,713	2,204	491
	1899	26	421	19	34	368	1,632	972	25	148	1,070	1,449	379
Silk and silk goods, including throwsters	1909	226	38,178	143	1,566	38,409	41,962	49,679	2,132	11,443	35,166	62,061	26,895
	1904	168	28,240	133	1,192	26,915	28,890	31,312	1,300	6,973	24,267	39,334	15,067
	1899	121	21,904	131	745	21,028	23,210	20,894	719	4,630	19,885	31,073	11,188
Slaughtering and meat packing.....	1909	180	3,957	198	709	3,050	12,139	13,504	862	1,987	44,845	51,851	7,006
	1904	177	3,074	205	341	2,528	7,366	8,338	367	1,518	28,340	33,101	4,761
	1899	131	2,283	183	377	1,723	-----	6,639	318	945	21,806	25,537	3,731
Smelting and refining, not from the ore..	1909	24	278	17	55	206	566	1,605	89	143	2,978	3,577	599
	1904	18	307	17	50	240	419	1,161	77	150	2,280	2,755	476
	1899	16	303	18	72	213	-----	864	50	110	2,064	2,520	456
Soap.....	1909	59	1,746	74	475	1,197	2,598	5,428	344	556	5,947	9,124	3,177
	1904	60	1,460	71	205	1,184	2,152	4,411	253	499	4,054	6,959	2,905
	* 1899	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Steam packing.....	1909	31	2,231	18	536	1,677	5,817	7,022	471	814	2,981	4,987	2,006
	1904	24	1,883	11	175	1,197	4,794	4,689	252	533	1,580	4,059	2,379
	1899	23	822	31	136	655	-----	1,823	184	278	830	1,853	1,023
Stoves and furnaces, including gas and oil stoves.	1909	74	4,721	42	481	4,198	4,675	10,643	635	2,465	2,472	7,469	4,937
	1904	78	5,198	62	455	4,681	3,953	10,884	487	2,723	2,302	7,696	5,394
	* 1899	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Tin plate and terneplate.....	1909	17	2,548	3	199	2,346	1,565	5,520	275	1,339	22,898	25,234	2,336
	1904	19	2,613	1	191	2,421	5,805	4,692	219	1,207	17,590	19,342	1,752
	1899	25	1,778	11	189	1,578	1,426	3,027	147	814	10,364	12,531	2,167
Tobacco manufactures.....	1909	2,432	37,580	2,699	1,693	33,188	2,638	27,604	1,785	11,620	20,713	50,161	29,448
	1904	2,808	35,265	3,139	1,378	30,748	1,714	23,371	1,117	10,438	15,937	40,897	24,960
	1899	2,684	29,177	2,954	921	25,302	1,724	15,602	860	8,507	11,994	32,731	20,737
Typewriters and supplies.....	1909	8	872	5	312	555	264	1,152	329	269	189	1,017	828
	1904	5	204	2	20	182	182	430	22	84	60	202	142
	1899	4	406	4	74	328	202	416	68	179	75	443	168
Umbrellas and canes.....	1909	45	2,551	44	192	2,315	1,570	5,119	325	906	3,148	5,060	1,912
	1904	37	2,883	37	110	2,736	1,501	6,081	131	842	3,319	5,133	1,814
	1899	44	-----	184	2,830	-----	-----	1,898	199	884	3,444	5,870	2,426
Wall paper.....	1909	11	1,196	140	1,056	1,371	1,371	3,511	249	520	2,309	3,695	1,386
	1904	12	1,060	8	89	963	1,044	2,712	139	454	1,777	3,023	1,246
	1899	13	1,025	8	96	921	-----	2,194	184	432	1,848	2,894	1,046
Wood distillation, not including turpentine and rosin.	1909	50	1,093	36	124	933	1,749	5,111	133	522	1,684	2,960	1,276
	1904	63	1,426	42	135	1,249	2,297	5,009	111	598	1,709	3,093	1,384
	* 1899	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Woolen, worsted, and felt goods, and wool hats.	1909	217	28,692	245	1,038	27,409	50,405	75,170	1,740	10,947	54,634	77,447	22,813
	1904	232	25,307	301	825	24,251	39,682	45,193	1,151	8,791	37,247	55,934	18,687
	1899	260	25,496	301	564	24,631	30,013	39,739	692	8,715	31,364	48,765	17,401
All other industries.....	1909	2,893	68,062	3,129	8,500	59,433	125,775	195,692	10,259	28,745	135,749	211,025	75,276
	1904	2,313	64,665	2,674	4,900	57,691	107,376	148,717	5,691	27,709	106,067	175,101	69,034
	1899	4,374	-----	-----	10,027	124,597	-----	319,514	11,078	60,014	171,100	303,922	132,822

¹ Excluding statistics for one establishment, to avoid disclosure of individual operations.
² Not reported separately.

SUPPLEMENT FOR PENNSYLVANIA.

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 employes.	Wage earners (average number).							
			Expressed in thousands.										
ALLENTOWN—All industries..	1909	274	12,628	314	833	11,481	19,101	\$21,569	\$874	\$5,061	\$15,581	\$26,263	\$10,682
	1904	257	9,859	312	563	8,984		13,455	524	3,312	9,873	16,841	6,968
	1899	218			356	7,355		11,343	310	2,634	8,977	14,980	6,013
Boots and shoes, including cut stock and findings.	1909	9	770	10	36	724	305	669	40	297	702	1,302	540
	1904	10	778	16	46	716		569	39	251	691	1,126	425
	1899	9	715	14	38	663		649	25	210	586	901	316
Bread and other bakery products.....	1909	32	183	31	6	146	82	295	4	77	276	475	199
	1904	28	170	35	5	130		134	2	62	192	348	156
	1899	24	148	29	17	102		149	8	39	119	232	113
Brick and tile.....	1909	6	158	11	6	141	335	260	6	56	37	175	138
	1904	5	111	3	6	102		228	5	37	21	101	80
	1899	5	106	9	2	95		118	1	29	15	76	61
Brooms and brushes.....	1909	4	21	5		16	5	11		5	10	21	11
	1904	4	22	4		18		12		7	9	22	13
	1899	4	27	4	1	22		10	(*)	8	8	24	16
Carriages and wagons and materials.....	1909	4	38	8		30	33	99		18	26	61	35
	1904	5	40	9		31		75		18	14	52	38
	1899	5				24		51		12	13	42	29
Clothing, men's, including shirts.....	1909	5	183	8	6	169	14	275	6	64	130	252	122
	1904	6	242	13	2	227		168	3	95	247	429	182
	1899	6	239	12	20	207		204	10	78	270	456	186
Copper, tin, and sheet-iron products.....	1909	3	53	6	1	46	23	53	1	25	40	83	43
	1904	3	78	8	5	65		96	3	27	59	118	59
	1899	3		6	6	33		60	4	16	27	72	45
Foundry and machine-shop products...	1909	23	1,011	30	130	851	1,286	1,777	111	400	769	1,632	863
	1904	20	900	32	63	805		1,163	55	356	451	1,202	751
	1899	13	607	22	29	616		879	25	328	631	1,243	612
Furniture and refrigerators.....	1909	7	593	10	54	529	646	712	78	252	205	733	528
	1904	9	497	13	42	442		513	46	182	149	481	332
	1899	6	440	7	35	398		402	33	157	147	399	252
Hosiery and knit goods.....	1909	8	614	7	35	572	423	678	29	147	457	717	260
	1904	7	422	7	15	400		368	15	108	285	465	180
	1899	5	275	8	12	255		103	15	57	189	326	137
Leather goods.....	1909	3	23	4	1	18	1	51	1	10	18	44	26
	1904	3	29	4		25		129		13	24	63	39
	1899												
Liquors, malt.....	1909	4	129	8	18	103	501	1,632	29	63	193	657	464
	1904	4	65	7	12	46		938	12	36	110	434	324
	1899	4	62	5	10	47		633	21	33	87	311	224
Lumber and timber products.....	1909	10	171	20	14	137	629	413	8	80	157	319	162
	1904	7	133	13	6	114		258	4	59	107	211	104
	1899	7	118	12	4	102		157	2	46	92	189	97
Marble and stone work.....	1909	4	23	5	1	17	18	22	(*)	10	13	32	19
	1904	3	15	4		11		13		7	6	19	13
	1899												
Printing and publishing.....	1909	28	255	31	34	190	147	496	26	93	101	339	238
	1904	26	196	34	23	139		390	16	62	61	230	169
	1899	17	140	24	5	111		317	3	52	44	174	130
Silk and silk goods, including throwsters.	1909	15	3,037	9	150	3,778	2,808	6,405	171	1,484	4,209	7,456	3,157
	1904	9	2,806	3	62	2,711		3,142	108	826	2,230	3,901	1,671
	1899	7	2,449	4	95	2,380		2,149	68	607	2,008	3,408	1,490
Tobacco manufactures.....	1909	47	1,190	47	39	1,104	152	439	34	439	632	1,446	764
	1904	56	1,122	58	72	992		323	54	305	593	1,290	697
	1899	48	375	47	20	308		196	15	96	234	464	230
All other industries.....	1909	62	3,276	64	302	2,910	11,633	7,282	330	1,541	7,406	10,519	3,113
	1904	52	2,233	49	174	2,010		4,941	162	871	4,624	6,349	1,725
	1899	53			92	1,992		5,266	80	866	4,507	6,613	2,106
ALTOONA—All industries.....	1909	44	9,100	41	650	8,409	9,158	\$16,094	\$649	\$5,750	\$9,134	\$16,763	\$7,629
	1904	73	10,069	81	448	9,540		11,238	359	5,564	7,248	14,350	7,102
	1899	57			303	6,573		6,380	210	3,717	6,883	11,273	4,390
Bread and other bakery products.....	1909	11	64	12	7	45	55	138	3	22	68	122	54
	1904	15	60	17	4	39		30	1	17	67	115	48
	1899	11	58	12	6	40		20	2	17	49	98	49
Liquors, malt.....	1909	3	118	5	17	96	730	1,061	26	42	238	526	288
	1904	3	394	5	6	59		762	7	45	87	323	236
	1899	3	42	5	6	31		288	5	17	57	186	129
Lumber and timber products.....	1909	3	104	4	12	88	186	267	14	44	113	250	137
	1904	5	214	7	20	187		172	16	102	208	476	178
	1899	7	110	7	5	98		158	3	52	139	234	95
Printing and publishing.....	1909	10	209	7	48	154	177	406	34	87	81	260	179
	1904	9	125	7	26	92		186	20	51	40	159	113
	1899	6	155	7	12	136		133	11	58	33	144	111
All other industries.....	1909	17	8,605	13	566	8,026	8,010	14,222	572	5,555	8,634	15,005	6,971
	1904	41	9,276	45	392	9,163		10,088	315	5,349	6,750	13,277	6,527
	1899	30			274	6,268		6,781	189	3,573	6,005	10,611	4,006

* 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.

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

‡ Less than \$500.

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

¶ Figures can not be shown without disclosing individual operations.

STATISTICS OF MANUFACTURES.

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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).							
ERIE—All industries.....	1909	391	11,142	364	982	9,796	22,038	\$30,620	\$1,289	\$5,101	\$12,064	\$24,226	\$12,162
	1904	281	9,337	233	689	8,415		22,963	819	4,363	8,427	15,539	9,212
	1899	260			617	8,032		19,063	655	3,925	8,208	16,493	8,285
Brass and bronze products.....	1909	4	55	4	6	45	80	117	7	25	72	127	55
	1904	5	64	7	5	52		85	4	33	58	107	49
	1899	3	31	4		27		63		13	30	60	30
Bread and other bakery products.....	1909	48	210	48	12	150	117	264	5	91	364	561	197
	1904	28	150	27	2	121		160	3	53	190	311	121
	1899	28	143	27	13	103		188	12	43	143	288	145
Carriages and wagons and materials.....	1909	4	35	7	2	26	41	64	1	15	21	51	30
	1904	3	26	6	1	19		38	1	9	16	37	21
	1899	2 ³	29	6	1	22		36	1	12	11	32	21
Confectionery.....	1909	8	52	8	7	37	34	42	9	16	116	171	55
	1904	3	46	2	2	42		16	3	14	56	94	38
	1899	4			7	15		13	3	7	9	30	21
Cooperage and wooden goods, not elsewhere specified.	1909	5	51	4	6	41	80	90	6	23	63	105	42
	1904	2 ³	12	2		10		7		7	31	46	15
	1899	5	123	4	7	112		108	9	34	82	192	110
Copper, tin, and sheet-iron products....	1909	10	143	10	9	124	163	216	8	65	111	216	105
	1904	2 ⁶	80	9	3	68		84	2	35	55	126	71
	1899	3				17		15		8	11	31	20
Cutlery and tools, not elsewhere specified	1909	4	137	2	22	113	168	493	24	67	65	197	132
	1904	3	94	1	7	86		171	10	40	39	105	66
	1899												
Flour-mill and gristmill products.....	1909	4	54	2	20	32	540	341	24	18	704	843	79
	1904	3	61	3	16	42		316	22	13	1,359	1,444	85
	1899	5			9	37		226	12	20	596	673	78
Foundry and machine-shop products....	1909	69	4,982	40	370	4,572	8,626	13,517	516	2,499	3,516	8,715	5,199
	1904	43	4,320	15	299	4,036		10,819	346	2,180	3,085	7,319	4,234
	1899	45			282	4,118		9,662	314	2,148	3,142	7,177	4,035
Liquors, malt.....	1909	3	153		30	123	373	2,449	46	90	212	626	714
	1904	4	161		30	131		1,847	44	94	167	882	715
	1899	5	145		30	115		1,100	46	90	138	697	559
Lumber and timber products.....	1909	16	368	12	44	312	896	1,179	54	175	610	964	354
	1904	11	331	13	20	238		571	22	148	442	731	289
	1899	4 ¹¹	348	19	32	297		727	31	121	430	769	339
Marble and stone work.....	1909	6	22	9		13	24	51		12	55	99	44
	1904	4 ⁵	27	7		20		31		16	34	65	31
	1899	2 ⁶	40	7	5	28		66	2	27	56	110	51
Musical instruments, pianos and organs and materials.	1909	4	123	2	21	100	190	258	26	64	104	237	133
	1904	3	128	3	12	113		173	11	77	52	210	158
	1899	4			5	158		299	8	103	78	250	172
Patent medicines and compounds and druggists' preparations.	1909	27	56	28	6	22	2	95	5	8	57	132	75
	1904	6	28	6	6	16		60	4	7	12	46	34
	1899	7	30	6	7	17		55	4	5	21	48	27
Printing and publishing.....	1909	23	518	20	89	409	610	1,247	90	182	250	829	579
	1904	2 ²⁰	508	13	72	423		932	63	230	250	694	444
	1899	22			32	398		474	26	159	140	462	322
Slaughtering and meat packing.....	1909	6	75	10	11	54	159	207	10	31	740	957	217
	1904	3	23	5	1	17		35	1	10	359	433	94
	1899												
Stoves and furnaces, including gas and oil stoves.	1909	8	575	3	41	531	468	1,013	63	324	249	843	594
	1904	6	502	3	42	457		844	58	264	270	774	504
	1899												
Tobacco manufactures.....	1909	23	95	26	1	68		90	1	41	63	157	94
	1904	29	133	39	2	92		105	3	45	63	168	105
	1899	20	124	32	2	90		82	1	45	62	156	94
All other industries.....	1909	119	3,438	129	285	3,024	9,467	8,887	394	1,355	4,632	8,096	3,464
	1904	77	2,643	72	199	2,372		6,669	222	1,088	2,909	5,047	2,198
	1899	83			185	2,568		6,049	186	1,090	3,260	5,518	2,258
HARRISBURG—All industries.....	1909	199	11,024	190	1,091	9,743	22,355	\$22,925	\$1,068	\$4,541	\$14,083	\$22,725	\$8,642
	1904	175	8,601	169	477	7,955		15,921	500	3,673	10,327	16,571	6,244
	1899	175			377	6,439		7,997	382	2,528	9,005	14,996	5,991
Bread and other bakery products.....	1909	39	237	40	12	185	143	301	11	91	362	601	239
	1904	40	178	45	4	129		156	1	60	226	372	146
	1899	44	125	48	2	75		92	1	36	116	226	110
Carriages and wagons and materials....	1909	7	61	7	4	50	67	85	2	29	37	92	55
	1904	5	60	4	2	54		104	2	29	23	75	52
	1899	7			5	43		81	5	21	23	59	36

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 Excluding statistics for two establishments, to avoid disclosure of individual operations.
³ Figures can not be shown without disclosing individual operations.
⁴ Excluding statistics for one establishment, to avoid disclosure of individual operations.
⁵ Not reported separately.

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).							
HARRISBURG—Continued.													
Foundry and machine-shop products...	1909	8	449	10	45	394	529	\$1,757	\$70	\$205	\$209	\$610	\$401
	1904	4	621	3	53	565	.....	1,315	64	283	316	654	638
	1899	6	625	4	42	579	.....	1,271	56	261	374	841	467
Iron and steel, steel works and rolling mills.	1909	5	2,214	.....	78	2,136	15,937	7,660	147	964	6,157	7,621	1,464
	1904	4	2,122	.....	73	2,049	.....	6,777	128	871	3,562	4,529	967
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Liquors, malt.....	1909	3	67	2	8	57	347	398	18	37	105	361	256
	1904	3	51	4	6	41	.....	350	7	25	64	248	184
	1899	3	39	3	4	32	.....	261	2	21	42	186	144
Lumber and timber products.....	1909	3	132	4	13	115	325	284	13	46	214	350	136
	1904	5	160	6	20	134	.....	315	13	59	287	400	113
	1899	4	91	3	6	82	.....	129	5	42	84	151	67
Patent medicines and compounds and druggists' preparations.	1909	11	37	11	12	14	2	53	3	5	25	57	32
	1904	5	10	5	2	3	.....	19	2	(2)	15	25	10
	1899	5	11	5	1	5	.....	23	1	2	9	20	11
Printing and publishing.....	1909	30	658	28	147	453	460	1,119	124	267	264	954	690
	1904	28	582	26	119	437	.....	888	86	229	152	846	694
	1899	19	394	17	34	343	.....	610	36	160	113	446	333
Tobacco manufactures.....	1909	20	1,630	10	31	1,580	73	1,210	38	497	682	1,762	1,080
	1904	423	916	24	18	874	.....	943	29	308	494	7,864	704
	1899	25	646	28	9	609	.....	89	4	132	269	536	267
All other industries.....	1909	73	5,539	69	741	4,729	4,472	10,058	642	2,400	6,028	10,317	4,289
	1904	53	3,901	52	180	3,669	.....	6,048	168	1,809	5,188	7,864	2,676
	1899	62	.....	.....	274	4,671	.....	5,432	272	1,853	7,975	12,531	4,556
JOHNSTOWN—All industries..													
Bread and other bakery products.....	1909	97	11,671	121	976	10,574	119,508	\$47,242	\$1,003	\$6,304	\$32,348	\$48,106	\$15,758
	1904	82	7,716	99	763	6,914	.....	69,589	729	3,865	19,755	28,892	9,137
	1899	66	.....	.....	387	5,600	.....	16,437	433	2,965	13,908	21,365	7,457
Copper, tin, and sheet-iron products....	1909	11	83	10	12	61	84	156	6	35	146	210	73
	1904	9	55	9	4	42	.....	119	2	25	75	127	52
	1899	11	48	13	.....	35	.....	32	.....	17	40	79	39
Liquors, malt.....	1909	4	176	5	32	139	1,020	1,670	42	61	186	808	622
	1904	3	125	3	22	100	.....	734	30	64	110	508	398
	1899	4	64	3	12	69	.....	525	12	42	88	395	307
Lumber and timber products.....	1909	8	85	9	17	59	510	177	15	43	99	196	96
	1904	4	55	9	6	40	.....	80	6	33	83	142	69
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Printing and publishing.....	1909	11	181	12	37	132	121	379	35	87	74	281	207
	1904	8	124	10	32	82	.....	193	31	56	45	188	143
	1899	10	87	12	1	74	.....	140	1	30	17	94	77
All other industries.....	1909	58	11,069	80	870	10,119	117,683	44,727	897	6,014	31,786	46,465	14,679
	1904	54	7,332	64	638	6,630	.....	58,423	659	3,673	19,420	27,880	8,460
	1899	41	.....	.....	354	5,422	.....	15,734	420	2,876	13,763	20,797	7,034
PHILADELPHIA—All industries.													
Artificial flowers and feathers and plumes.	1909	29	915	35	76	804	70	\$691,397	\$39,446	\$126,381	\$429,092	\$746,076	\$316,984
	1904	19	627	27	47	553	.....	520,179	25,396	107,640	333,352	561,388	258,036
	1899	24	940	34	42	873	.....	445,725	18,931	94,737	295,175	519,982	224,807
Baiting and hose, leather.....	1909	13	188	13	56	119	286	637	63	81	809	1,104	295
	1904	10	135	10	29	96	.....	495	27	63	424	642	216
	1899	5	83	8	15	60	.....	340	9	35	299	428	129
Boxes and shoes, including cut stock and findings.	1909	58	3,820	74	250	3,466	872	3,068	375	1,594	3,703	6,517	2,814
	1904	53	3,282	82	166	3,034	.....	58,423	172	1,321	2,043	5,386	2,443
	1899	80	4,170	118	224	3,828	.....	2,804	224	1,595	3,760	6,395	2,635
Boxes, cigar.....	1909	7	346	9	17	320	362	364	26	125	323	543	220
	1904	7	311	12	8	291	.....	318	12	90	203	394	191
	1899	10	225	14	9	202	.....	190	6	66	195	339	144
Boxes, fancy and paper.....	1909	65	3,682	67	236	3,379	1,382	2,457	238	1,113	1,631	3,822	2,191
	1904	54	3,435	65	170	3,200	.....	1,790	165	959	1,268	3,037	1,769
	1899	50	2,674	55	110	2,709	.....	1,593	99	709	1,006	2,413	1,407
Brass and bronze products.....	1909	49	1,263	42	179	1,042	1,651	3,214	248	625	2,518	4,057	1,539
	1904	45	831	55	79	697	.....	1,504	97	394	1,306	2,428	1,032
	1899	453	1,414	63	142	1,209	.....	2,551	157	637	2,186	3,515	1,329
Bread and other bakery products.....	1909	1,208	6,936	1,225	1,113	4,568	4,159	14,890	951	2,592	11,650	19,018	7,368
	1904	1,193	6,216	1,217	372	4,627	.....	9,162	354	2,386	8,344	14,440	6,096
	1899	1,299	5,051	1,320	458	3,273	.....	4,992	350	1,569	5,709	10,465	4,766

1 Not reported separately.
 2 Less than \$500.
 3 Excluding statistics for two establishments, to avoid disclosure of individual operations.
 4 Excluding statistics for one establishment, to avoid disclosure of individual operations.
 5 Figures can not be shown without disclosing individual operations.
 6 Excluding statistics for three establishments, to avoid disclosure of individual operations.

STATISTICS OF MANUFACTURES.

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.										
PHILADELPHIA—Continued.													
Brick and tile.....	1909	31	1,468	51	48	1,369	2,715	\$3,038	\$56	\$786	\$456	\$1,885	\$1,420
	1904	31	1,443	45	39	1,359	.....	2,196	45	697	347	1,556	1,219
	1899	37	1,547	49	47	1,451	.....	2,449	54	678	283	1,497	1,214
Brooms and brushes.....	1909	59	530	70	51	409	255	662	51	223	614	1,132	518
	1904	65	501	72	40	389	.....	396	36	184	463	782	370
	1899	69	597	80	45	472	.....	466	40	200	477	988	461
Buttons.....	1909	21	740	23	49	608	393	551	67	285	556	1,159	573
	1904	15	580	18	32	479	.....	283	32	158	212	481	269
	1899	17	677	26	25	626	.....	377	27	216	331	729	398
Canning and preserving.....	1909	23	804	26	150	628	723	1,528	166	226	1,772	2,538	766
	1904	14	393	13	51	299	.....	615	50	123	553	887	334
	1899	20	.....	.....	77	330	.....	554	48	128	551	926	375
Carpets and rugs, other than rag.....	1909	84	10,863	96	404	10,363	11,435	22,803	684	4,722	13,375	22,029	9,254
	1904	91	13,202	126	458	12,618	.....	20,558	579	5,426	15,560	25,233	9,673
	1899	88	12,588	102	296	12,190	.....	16,867	330	5,092	13,223	21,986	8,763
Carriages and wagons and materials....	1909	90	1,511	96	99	1,316	1,100	2,392	125	339	901	2,458	1,557
	1904	102	1,646	131	89	1,423	.....	1,988	87	332	775	2,183	1,408
	1899	113	.....	.....	68	1,411	.....	2,301	78	754	692	2,035	1,343
Cars and general shop construction and repairs by steam-railroad companies.	1909	10	3,963	.....	294	3,669	2,256	4,471	232	2,527	2,416	5,318	2,902
	1904	8	3,652	.....	283	3,369	.....	3,452	195	2,164	2,207	4,673	2,466
	1899	10	2,861	.....	81	2,780	.....	1,434	72	1,609	1,946	3,651	1,705
Chemicals.....	1909	16	1,972	17	202	1,753	4,875	12,997	346	1,046	6,519	8,643	3,124
	1904	23	2,101	21	210	1,870	.....	14,035	329	1,109	5,484	8,452	2,968
	1899	24	2,169	4	248	1,917	.....	13,400	391	1,026	4,334	7,810	3,476
Clocks and watches, including cases and materials.	1909	5	937	3	160	774	793	2,737	162	399	978	1,965	967
	1904	3	847	2	102	743	.....	2,724	106	346	783	1,466	683
	1899	3	.....	.....	65	930	.....	2,862	62	434	699	1,455	756
Clothing, men's, including shirts.....	1909	456	14,075	716	1,144	12,215	2,472	14,871	1,256	5,962	14,488	20,001	14,513
	1904	256	9,809	394	898	8,577	.....	12,661	745	3,773	12,293	23,642	11,349
	1899	446	.....	.....	799	9,215	.....	10,242	855	4,190	11,542	22,699	11,157
Clothing, women's.....	1909	351	15,627	576	1,551	13,500	1,955	10,590	1,531	6,574	16,666	30,133	13,467
	1904	183	8,019	274	727	7,018	.....	4,715	508	2,964	6,933	12,871	5,938
	1899	191	7,026	283	510	6,233	.....	3,385	428	2,122	5,040	9,452	4,412
Confectionery.....	1909	129	3,371	128	352	2,891	1,699	4,264	446	1,008	4,340	7,315	2,975
	1904	78	3,140	88	383	2,660	.....	3,852	301	832	3,356	5,557	2,201
	1899	79	.....	.....	354	2,692	.....	2,325	307	615	2,572	4,355	1,783
Cooperage and wooden goods, not elsewhere specified.	1909	44	614	47	34	733	729	1,501	57	344	1,449	2,214	765
	1904	41	514	47	29	438	.....	888	30	242	1,038	1,673	635
	1899	41	.....	.....	22	377	.....	1,076	20	186	1,011	1,503	492
Copper, tin, and sheet-iron products....	1909	134	3,490	159	392	2,939	2,074	6,511	414	1,559	4,331	7,493	3,162
	1904	85	3,471	106	261	3,104	.....	5,591	275	1,494	2,714	5,470	2,756
	1899	84	.....	.....	144	1,912	.....	2,152	141	868	1,032	3,300	1,668
Cordage and twine and jute and linen goods.	1909	8	1,214	8	43	1,163	2,250	3,816	105	429	3,325	3,325	1,190
	1904	12	1,335	12	39	1,284	.....	3,766	114	434	3,048	4,121	1,073
	1899	13	1,871	16	68	1,787	.....	4,833	81	507	4,734	6,162	1,428
Cork, cutting.....	1909	6	75	8	7	60	49	74	8	24	40	106	57
	1904	8	106	10	11	85	.....	178	13	33	79	173	94
	1899	6	178	8	9	161	.....	161	11	35	103	196	98
Cotton goods, including cotton small wares.	1909	130	10,527	135	658	9,734	14,160	20,868	1,185	4,411	12,327	22,538	10,211
	1904	129	10,093	175	473	9,445	.....	17,076	726	3,712	9,168	17,463	8,295
	1899	143	11,301	206	400	10,695	.....	14,380	513	4,009	9,112	17,620	8,508
Cutlery and tools, not elsewhere specified.	1909	33	1,036	39	114	883	2,086	2,619	137	536	605	1,686	1,081
	1904	30	852	36	72	744	.....	1,367	78	376	495	1,301	806
	1899	25	434	29	39	366	.....	698	43	195	331	840	509
Dyeing and finishing textiles.....	1909	104	3,991	133	253	3,575	7,037	6,179	358	1,829	2,413	6,327	3,914
	1904	97	3,241	134	225	2,852	.....	5,098	261	1,366	1,671	4,371	2,700
	1899	91	3,762	143	104	3,455	.....	4,981	172	1,578	2,441	5,861	3,121
Electrical machinery, apparatus, and supplies.	1909	45	2,317	23	535	1,759	2,693	6,739	570	923	3,241	7,065	3,824
	1904	40	1,949	32	381	1,536	.....	3,745	417	773	2,878	5,066	2,188
	1899	40	1,429	33	143	1,233	.....	3,663	196	491	2,198	4,261	2,033
Fancy articles, not elsewhere specified.	1909	42	827	47	61	719	341	883	53	296	545	1,281	736
	1904	33	688	40	48	600	.....	416	40	181	324	772	448
	1899	36	672	45	38	589	.....	431	20	177	342	760	418
Fertilizers.....	1909	6	896	4	128	764	3,020	4,346	202	375	3,054	4,268	1,214
	1904	5	645	2	63	580	.....	3,535	104	279	1,972	2,597	625
	1899	6	542	3	96	443	.....	2,331	137	219	1,755	2,376	621
Files.....	1909	7	1,298	4	77	1,217	1,313	2,686	91	528	427	1,540	1,113
	1904	5	979	3	32	944	.....	1,356	53	385	392	1,114	722
	1899	8	961	10	33	918	.....	1,202	51	350	373	1,014	641
Flour-mill and gristmill products.....	1909	28	154	36	29	89	1,116	886	35	53	2,624	2,877	253
	1904	14	132	18	19	95	.....	534	19	66	1,666	1,905	239
	1899	15	.....	.....	15	70	.....	336	16	40	1,208	1,369	161

1 Excluding statistics for one establishment, to avoid disclosure of individual operations.
 2 Excluding statistics for two establishments, to avoid disclosure of 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 employes.	Wage earners (average number).							
Expressed in thousands.													
PHILADELPHIA—Continued.													
Foundry and machine-shop products...	1909	545	20,641	508	2,992	17,141	23,629	\$56,029	\$3,672	\$10,135	\$16,245	\$38,685	\$22,440
	1904	440	19,000	459	2,291	16,310	.....	50,849	2,775	9,291	12,953	32,955	20,102
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fur goods.....	1909	47	234	59	44	181	10	872	31	129	462	1,032	370
	1904	25	244	34	29	181	.....	392	20	105	360	677	317
	1899	23	.....	.....	41	104	.....	489	24	114	290	676	386
Furniture and refrigerators.....	1909	147	4,042	165	484	3,393	3,870	7,451	604	1,940	3,731	8,052	4,321
	1904	2 59	3,288	110	268	2,910	.....	4,352	271	1,577	2,137	5,452	3,265
	1899	80	2,715	106	163	2,440	.....	3,130	202	1,281	1,940	4,517	2,668
Gas and electric fixtures and lamps and reflectors.	1909	41	1,376	38	242	1,096	879	2,083	254	604	813	2,177	1,864
	1904	39	1,375	36	193	1,146	.....	1,808	221	621	623	2,135	1,512
	1899	31	1,250	34	125	1,091	.....	1,749	138	543	892	2,023	1,131
Glass.....	1909	4	1,185	1	72	1,112	419	1,252	89	559	498	1,367	869
	1904	5	1,376	1	62	1,313	.....	1,259	79	656	352	1,204	942
	1899	8	1,603	8	66	1,520	.....	1,258	85	618	388	1,847	950
Hats and caps, other than felt, straw, and wool.	1909	42	562	55	43	464	51	426	54	188	413	803	390
	1904	30	490	40	18	432	.....	249	33	173	296	637	341
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hats, fur-felt.....	1909	27	6,080	34	221	5,825	4,163	13,337	341	3,101	3,563	10,402	6,839
	1904	16	3,807	14	233	3,560	.....	7,760	305	1,754	1,855	5,848	3,963
	1899	12	2,286	11	159	2,116	.....	5,051	249	893	1,090	3,075	1,985
Hosiery and knit goods.....	1909	177	17,027	195	833	15,999	7,962	18,782	888	5,753	12,870	23,971	11,101
	1904	151	14,263	213	764	13,286	.....	12,585	615	4,291	7,817	15,525	8,008
	1899	150	12,532	180	364	11,983	.....	10,040	388	3,575	6,182	13,074	6,892
Ice, manufactured.....	1909	31	645	12	98	535	11,703	5,253	88	375	524	1,663	1,139
	1904	32	495	11	77	407	.....	3,635	66	250	353	1,188	885
	1899	20	465	3	117	345	.....	3,159	71	191	204	395	691
Ink, printing.....	1909	8	246	6	75	165	483	742	94	105	623	1,050	427
	1904	8	178	6	73	99	.....	590	86	73	403	684	281
	1899	7	114	7	29	78	.....	471	61	48	204	408	204
Iron and steel, steel works and rolling mills.	1909	8	5,248	6	421	4,821	27,009	18,016	742	2,774	5,588	11,789	6,201
	1904	6	4,060	6	308	3,746	.....	6,452	429	2,003	3,742	7,095	3,353
	1899	8	3,034	6	213	2,815	.....	6,070	299	1,867	3,565	7,209	3,644
Jewelry.....	1909	52	411	69	47	295	110	664	38	186	427	884	457
	1904	35	487	48	45	394	.....	681	38	241	308	854	456
	1899	19	485	25	58	402	.....	679	37	183	244	648	404
Leather goods.....	1909	84	2,092	108	277	1,707	490	2,696	371	781	2,141	3,994	1,853
	1904	70	2,055	88	224	1,743	.....	2,181	206	727	1,937	3,671	1,734
	1899	67	.....	137	1,648	.....	.....	1,414	134	581	1,205	2,708	1,503
Leather, tanned, curried, and finished...	1909	41	6,490	36	392	5,972	8,664	10,523	619	3,009	17,140	23,526	6,386
	1904	43	6,555	56	391	6,108	.....	13,078	411	2,800	17,732	23,903	6,171
	1899	44	6,015	65	169	5,781	.....	9,106	185	2,529	13,429	18,187	4,758
Liquors, malt.....	1909	48	2,290	31	402	1,857	13,368	28,676	1,028	1,443	3,933	14,257	10,324
	1904	51	2,008	43	313	1,652	.....	28,628	887	1,351	3,441	12,315	8,874
	1899	59	2,144	50	303	1,791	.....	27,636	652	1,229	2,877	12,607	9,730
Lumber and timber products.....	1909	98	3,609	103	258	3,248	7,872	5,972	319	1,812	4,453	7,703	3,250
	1904	75	2,694	102	176	2,416	.....	3,574	202	1,255	2,906	5,243	2,337
	1899	69	.....	157	2,286	.....	.....	3,603	165	1,106	2,953	5,155	2,202
Marble and stone work.....	1909	98	1,869	127	123	1,619	2,662	2,991	142	1,080	1,432	3,464	2,032
	1904	71	1,409	97	84	1,228	.....	2,264	110	852	880	2,476	1,696
	1899	76	.....	55	1,029	.....	.....	2,235	55	680	874	2,057	1,183
Mattresses and spring beds.....	1909	38	408	37	62	309	471	603	50	138	657	1,069	412
	1904	33	433	31	54	348	.....	507	64	170	522	982	460
	1899	35	.....	43	339	.....	.....	321	26	139	515	880	365
Millinery and lace goods.....	1909	90	3,164	124	270	2,770	370	2,205	222	956	2,773	5,052	2,279
	1904	42	1,614	66	97	1,451	.....	858	60	491	1,134	2,132	998
	1899	37	859	48	52	759	.....	607	45	275	743	1,446	703
Musical instruments, pianos and organs and materials.	1909	14	501	13	30	458	361	563	42	155	400	775	375
	1904	10	342	11	18	313	.....	384	23	160	110	459	349
	1899	13	280	16	28	236	.....	416	35	154	157	521	364
Optical goods.....	1909	14	419	12	116	291	110	455	90	123	273	621	348
	1904	10	240	11	19	210	.....	243	23	75	90	249	169
	1899	11	.....	18	255	.....	.....	148	14	79	82	269	187
Paint and varnish.....	1909	50	1,612	46	369	1,197	4,027	8,193	552	689	5,194	8,045	2,851
	1904	47	1,348	53	281	1,054	.....	7,288	351	557	4,778	6,949	2,171
	1899	46	1,583	27	356	1,200	.....	9,058	412	594	4,208	7,447	3,239
Paper and wood pulp.....	1909	7	1,395	2	02	1,301	10,645	4,923	183	629	2,352	4,122	1,770
	1904	6	1,158	3	06	1,059	.....	3,856	115	506	1,640	2,921	1,281
	1899	7	983	5	45	933	.....	2,671	61	389	1,511	2,630	1,125
Paper goods, not elsewhere specified...	1909	31	1,600	31	258	1,311	1,213	3,169	309	518	2,161	3,597	1,436
	1904	25	790	35	105	620	.....	777	119	238	976	1,651	675
	1899	10	488	24	46	418	.....	744	44	153	649	1,188	589

¹ Comparable figures not available.
² Excluding statistics for six establishments, to avoid disclosure of individual operations.
³ Excluding statistics for two establishments, to avoid disclosure of individual operations.
⁴ Excluding statistics for one establishment, to avoid disclosure of individual operations.

STATISTICS OF MANUFACTURES.

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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 employ-ees.	Wage earners (average number).							
Expressed in thousands.													
PHILADELPHIA—Continued.													
Patent medicines and compounds and druggists' preparations.	1909	174	3,175	153	882	2,140	2,012	\$9,752	\$1,074	\$897	\$4,087	\$9,423	\$5,336
	1904	108	2,760	107	730	1,923	.....	5,996	613	660	3,258	7,371	4,113
	1899	114	2,702	124	685	1,993	.....	6,927	583	711	3,228	7,445	4,217
Photo-engraving	1909	16	546	15	134	397	105	523	141	381	185	917	732
	1904	12	383	12	84	287	.....	320	66	224	85	547	432
	1899	9	263	8	37	218	.....	258	32	141	44	296	252
Pottery, terra-cotta, and fire-clay products.	1909	13	640	9	46	585	803	1,244	60	345	233	823	590
	1904	14	622	11	34	577	.....	1,079	50	394	162	781	629
	1899	16	549	18	37	494	.....	987	41	229	132	557	425
Printing and publishing.....	1909	931	20,912	885	6,346	13,651	12,267	42,591	5,905	8,249	15,387	45,807	30,420
	1904	766	17,288	738	4,167	12,333	.....	27,430	4,288	6,821	10,772	35,205	24,433
	1899	740	15,262	817	3,068	11,377	.....	25,645	2,986	5,769	7,702	26,749	19,047
Safes and vaults.....	1909	3	278	.....	33	245	418	506	33	160	288	493	205
	1904	3	335	2	23	310	.....	425	29	186	193	491	298
	1899	4	247	3	33	211	.....	479	43	111	165	565	400
Shoddy.....	1909	15	442	20	29	393	1,718	1,504	39	166	1,363	1,846	483
	1904	20	370	28	31	311	.....	1,076	40	121	1,562	2,002	440
	1899	21	368	12	32	324	.....	823	23	132	966	1,285	319
Silk and silk goods, including throwsters.	1909	32	3,348	29	263	3,056	2,156	6,091	315	1,235	3,472	6,502	3,030
	1904	31	2,924	32	211	2,681	.....	5,125	288	959	2,852	5,079	2,227
	1899	28	2,739	49	184	2,506	.....	3,814	179	826	2,292	4,532	2,240
Slaughtering and meat packing.....	1909	81	1,430	110	211	1,109	3,004	4,605	285	793	19,781	22,079	2,298
	1904	95	990	115	80	795	.....	2,634	90	510	11,295	12,922	1,627
	1899	69	879	99	142	638	.....	1,914	113	383	10,368	12,006	1,728
Smelting and refining, not from the ore..	1909	15	160	14	25	121	208	597	35	80	908	1,226	318
	1904	12	162	12	23	127	.....	479	26	80	817	1,051	234
	1899	7	163	9	56	98	.....	382	27	48	912	1,092	180
Soap.....	1909	32	1,059	40	220	799	1,520	3,651	199	388	5,071	7,319	2,248
	1904	31	997	35	149	813	.....	2,619	195	350	3,349	5,770	2,421
Steam packing.....	1909	15	351	12	146	193	413	760	132	100	566	1,136	570
	1904	11	137	9	35	93	.....	477	25	45	215	407	192
	1899	17	326	20	68	238	.....	387	79	96	380	760	383
Stoves and furnaces, including gas and oil stoves.	1909	20	984	18	120	846	891	2,393	174	550	786	2,070	1,284
	1904	17	1,022	16	88	918	.....	2,175	117	551	762	1,955	1,208
* Tobacco manufactures.....	1909	466	7,634	523	561	6,545	891	7,520	686	2,650	5,390	13,429	8,039
	1904	617	6,710	692	402	5,646	.....	7,726	366	3,279	8,655	5,376	
	1899	556	6,950	607	273	6,080	.....	4,895	329	2,593	3,424	8,991	5,567
Umbrellas and canes.....	1909	31	1,297	31	100	1,166	1,342	3,413	102	505	1,060	2,075	1,015
	1904	24	1,484	23	67	1,394	.....	4,515	80	495	1,321	2,288	967
	1899	34	.....	.....	135	1,626	.....	1,244	158	550	1,879	3,143	1,264
Wall paper.....	1909	4	504	.....	50	454	525	1,368	117	196	1,047	1,732	685
	1904	6	510	6	33	471	.....	1,057	60	219	1,415	1,415	674
	1899	11	741	8	70	663	.....	1,472	103	316	1,424	2,062	638
Woolen, worsted, and felt goods, and wool hats.	1909	131	20,073	150	746	19,177	33,428	54,914	1,311	7,996	37,869	54,922	17,053
	1904	130	17,581	173	586	16,822	.....	30,357	836	6,160	25,574	39,258	13,684
	1899	129	17,348	149	354	16,845	.....	26,954	454	6,052	22,270	34,682	12,312
All other industries.....	1909	1,331	48,909	1,420	6,497	40,992	97,447	183,308	7,706	22,203	125,313	183,906	58,593
	1904	1,089	51,669	1,268	4,070	46,331	.....	144,636	4,695	24,020	110,424	167,728	57,304
	1899	1,782	.....	.....	4,894	57,958	.....	173,664	5,408	29,060	115,220	179,875	64,635
PITTSBURGH—All industries.													
	1909	1,659	79,625	1,553	10,598	87,474	307,666	\$283,139	\$12,683	\$39,973	\$148,527	\$243,454	\$94,927
	1904	1,562	81,407	1,516	8,273	71,618	.....	280,765	8,763	39,895	124,581	211,259	86,678
	1899	1,301	.....	.....	6,850	71,794	.....	211,774	6,351	37,635	128,458	218,198	89,740
Boxes, fancy and paper.....	1909	7	237	7	16	214	165	109	16	62	86	215	129
	1904	5	181	6	6	169	.....	69	5	46	68	140	72
	1899	4	144	6	1	137	.....	49	(1)	32	48	102	58
Brass and bronze products.....	1909	12	740	14	97	629	2,756	4,026	136	379	2,373	3,188	815
	1904	15	625	7	91	527	.....	2,965	112	287	1,783	2,462	679
	1899	9	.....	.....	50	231	.....	1,122	50	138	1,286	1,701	415
Bread and other bakery products.....	1909	248	2,791	264	518	2,009	2,222	5,873	506	1,048	4,472	8,054	3,582
	1904	208	2,538	232	434	1,872	.....	4,237	371	933	8,525	6,302	2,777
	1899	125	1,701	132	254	1,315	.....	2,465	222	510	1,647	3,211	1,584
Brick and tile.....	1909	17	457	17	33	407	2,614	947	36	198	173	555	382
	1904	22	535	32	28	475	.....	989	32	221	125	546	421
	1899	21	735	33	31	671	.....	1,232	28	301	149	730	581
Brooms and brushes.....	1909	9	131	10	21	100	165	308	22	57	162	325	163
	1904	11	148	10	29	109	.....	255	30	68	143	374	231
	1899	8	199	14	29	180	.....	321	5	57	221	348	127

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.
 4 Less than \$500.

SUPPLEMENT FOR PENNSYLVANIA.

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.													
PITTSBURGH—Continued.													
Canning and preserving.....	1909	11	3,073	14	1,349	1,710	1,811	\$6,823	\$1,338	\$615	\$2,392	\$6,202	\$3,810
	1904	16	2,405	8	991	1,406	.....	4,678	1,050	496	2,832	6,217	3,335
	1899	25	2,119	6	669	1,444	.....	2,473	672	409	1,832	4,429	2,497
Carriages and wagons and materials....	1909	23	358	30	30	298	726	928	28	216	227	552	355
	1904	37	499	49	18	432	.....	735	16	321	241	763	522
	1899	37	.....	.....	18	347	.....	513	.....	207	186	573	387
Cars and general shop construction and repairs by steam-railroad companies.	1909	7	4,827	.....	514	4,813	9,898	4,370	301	3,052	4,067	8,556	3,589
	1904	8	4,880	.....	295	4,585	.....	2,378	243	2,895	2,884	6,107	3,223
	1899	8	2,234	.....	111	2,123	.....	1,384	95	1,119	625	1,887	1,282
Chemicals.....	1909	3	62	.....	14	48	280	440	25	32	392	531	139
	1904	3	87	2	27	58	.....	301	28	30	270	351	81
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Clothing, men's, including shirts.....	1909	24	1,011	43	102	866	340	1,237	88	342	1,122	1,950	828
	1904	18	925	34	104	787	.....	983	64	291	859	1,428	599
	1899	16	.....	.....	73	856	.....	968	50	277	861	1,381	520
Clothing, women's.....	1909	5	72	6	60	60	13	104	6	24	80	134	54
	1904	11	212	16	22	174	.....	322	41	97	208	430	222
	1899	19	370	17	28	325	.....	1,011	35	133	388	601	303
Confectionery.....	1909	16	713	7	93	613	549	1,127	86	210	1,282	1,853	571
	1904	10	408	6	77	325	.....	554	52	118	601	1,048	447
	1899	11	.....	.....	144	517	.....	538	72	133	507	1,021	514
Cooperage and wooden goods, not elsewhere specified.	1909	12	202	13	21	168	144	439	23	94	349	507	218
	1904	15	201	17	12	172	.....	314	15	94	300	493	193
	1899	10	288	13	3	252	.....	214	8	131	424	606	182
Copper, tin, and sheet-iron products....	1909	48	608	51	86	471	349	1,002	91	297	495	1,121	626
	1904	35	839	44	98	697	.....	1,512	100	404	896	1,618	722
	1899	30	.....	.....	74	662	.....	854	63	282	641	1,263	622
Cutlery and tools, not elsewhere specified.	1909	16	743	20	59	664	1,238	1,258	78	346	927	1,654	727
	1904	10	439	13	24	402	.....	562	35	218	301	757	396
	1899	9	.....	.....	30	346	.....	507	44	208	332	726	394
Electrical machinery, apparatus, and supplies.	1909	13	1,012	8	142	862	1,640	3,321	182	433	1,843	3,324	1,481
	1904	12	807	14	256	537	.....	3,105	235	261	1,074	1,797	723
	1899	17	.....	.....	34	379	.....	2,142	60	190	1,705	2,304	599
Foundry and machine-shop products....	1909	155	9,742	81	1,446	8,215	13,311	31,927	1,963	5,773	9,943	21,691	11,748
	1904	151	11,024	109	1,182	9,733	.....	30,076	1,569	5,728	9,382	20,757	11,376
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Furniture and refrigerators.....	1909	11	373	12	46	315	629	826	54	188	440	900	460
	1904	11	317	13	34	270	.....	511	54	176	192	587	335
	1899	29	160	21	29	110	.....	92	8	64	105	244	139
Gas and electric fixtures and lamps and reflectors.	1909	16	302	16	53	233	212	435	48	95	262	467	265
	1904	14	120	2	11	107	.....	84	17	37	143	246	103
	1899	9	.....	.....	30	232	.....	495	41	119	150	443	293
Glass.....	1909	9	1,263	6	85	1,171	915	2,483	134	608	449	1,443	994
	1904	11	2,055	6	141	1,908	.....	3,134	204	987	748	2,131	1,883
	1899	16	2,216	5	107	2,104	.....	3,588	137	1,133	742	2,430	1,668
Ice, manufactured.....	1909	15	268	2	70	166	6,384	2,965	91	131	199	958	759
	1904	10	465	3	79	383	.....	2,283	97	227	146	515	660
	1899	14	83	5	8	70	.....	547	10	44	15	111	96
Iron and steel, blast furnaces.....	1909	6	1,749	.....	366	1,383	50,768	30,134	619	1,053	16,038	20,668	4,630
	1904	4	1,593	.....	154	1,439	.....	12,960	182	836	12,581	15,500	2,919
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Iron and steel, steel works and rolling mills.	1909	25	23,341	.....	1,781	23,560	156,512	105,053	2,344	14,455	55,887	82,307	26,420
	1904	25	27,334	.....	1,589	25,745	.....	101,217	2,045	14,910	50,687	77,440	26,773
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Jewelry.....	1909	6	96	9	10	77	19	89	7	55	88	183	95
	1904	4	76	6	2	68	.....	38	2	42	63	128	65
Leather goods.....	1909	12	154	13	17	124	79	318	10	64	136	260	124
	1904	9	130	9	18	103	.....	200	15	60	120	243	133
	1899	14	.....	.....	11	116	.....	129	8	60	83	221	128
Leather, tanned, curried, and finished..	1909	6	273	2	27	244	846	1,553	46	139	914	1,182	248
	1904	6	452	3	41	408	.....	2,009	64	224	1,180	1,640	451
	1899	9	471	8	33	430	.....	2,190	52	186	1,138	1,582	444
Liquors, malt.....	1909	12	994	.....	121	873	6,591	14,628	299	686	1,267	5,420	4,153
	1904	11	851	.....	109	742	.....	11,246	288	560	1,222	4,083	2,861
	1899	11	633	.....	100	533	.....	16,832	208	404	1,014	4,840	3,826
Lumber and timber products.....	1909	40	780	46	80	645	2,836	2,019	100	433	960	1,694	734
	1904	42	943	51	104	788	.....	2,108	108	543	1,165	2,231	1,066
	1899	29	.....	.....	55	633	.....	1,556	60	331	1,051	1,868	807

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 Comparable figures not available.

⁴ Not reported separately.

STATISTICS OF MANUFACTURES.

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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).							
PITTSBURGH—Continued.													
Marble and stone work.....	1909	25	348	30	83	285	709	\$563	\$44	\$104	\$248	\$598	\$350
	1904	16	266	23	24	219		342	24	156	146	443	287
	1899	23			25	612		633	27	316	339	886	547
Mattresses and spring beds.....	1909	6	256	5	28	223	261	574	38	124	337	590	253
	1904	14	132	3	5	124		218	6	60	183	335	152
	1899	7	230	8	24	198		271	23	75	331	500	169
Paint and varnish.....	1909	16	362	12	98	252	1,760	2,361	137	138	1,740	2,419	679
	1904	15	394	10	93	291		1,042	129	143	1,514	2,127	613
	1899	12	334	9	82	243		1,412	109	101	1,210	2,029	819
Patent medicines and compounds and druggists' preparations.	1909	31	214	25	75	114	263	685	96	51	313	898	585
	1904	31	209	25	48	135		492	49	63	475	1,019	544
	1899	14			86	131		270	51	49	343	804	461
Photo-engraving.....	1909	6	109	6	26	77	71	108	34	55	41	187	146
	1904	8	91	16	16	59		79	17	52	13	127	114
	1899	6	67	11	6	50		34	4	28	14	79	65
Pottery, terra-cotta, and fire-clay products.	1909	3	337		17	320	850	1,173	28	155	195	507	312
	1904	15	398		44	354		3,454	66	132	213	568	350
	1899	17			78	662		1,550	77	262	462	1,046	584
Printing and publishing.....	1909	254	4,216	255	1,156	2,805	4,173	9,600	1,314	1,960	2,669	9,071	6,402
	1904	211	3,832	212	847	2,773		9,074	928	1,877	2,156	7,789	5,633
	1899	147			552	2,359		5,184	483	1,509	1,435	4,958	3,523
Shipbuilding, including boat building..	1909	4	169	4	21	144	580	533	42	96	107	268	161
	1904	4	133	7	13	113		474	22	63	64	220	156
	1899	4			8	58		123	4	22	32	71	39
Slaughtering and meat packing.....	1909	14	1,063	7	215	841	3,391	3,510	276	553	11,466	13,107	1,641
	1904	121	1,036	22	128	886		2,784	145	575	8,945	9,995	1,650
	1899	13	706	19	99	588		2,284	101	327	5,118	6,051	833
Soap.....	1909	7	469	12	214	243	488	1,185	106	104	458	1,207	749
	1904	6	199	9	27	163		738	35	72	347	527	180
Stoves and furnaces, including gas and oil stoves.	1909	9	285	8	44	233	256	1,220	49	133	161	416	255
	1904	9	145	5	25	116		221	28	53	103	243	140
Surgical appliances and artificial limbs..	1909	9	66	13	11	42	31	36	12	37	20	111	91
	1904	16	84	4	16	42		31	10	28	7	71	64
	1899	13	48	4	11	33		20	4	14	11	56	45
Tobacco manufactures.....	1909	215	3,456	223	168	3,065	213	1,878	144	844	1,172	3,615	2,443
	1904	243	3,520	257	119	3,144		2,324	113	944	1,084	3,986	2,902
	1899	201	2,391	213	79	2,099		1,048	59	617	539	2,448	1,909
All other industries.....	1909	271	9,903	262	1,279	8,362	25,628	34,950	1,598	4,444	21,675	34,496	12,921
	1904	269	9,899	231	890	8,778		48,767	1,107	4,487	16,088	27,175	11,037
	1899	454			2,896	50,748		157,664	3,481	27,841	103,376	166,568	63,192
READING—All industries.													
	1909	482	26,407	517	1,745	24,145	43,193	\$41,053	\$1,810	\$11,011	\$29,848	\$51,135	\$21,287
	1904	402	19,763	441	1,269	18,053		27,123	1,098	7,265	16,709	30,491	13,782
	1899	403			941	16,892		25,934	855	6,583	18,996	32,682	15,686
Automobiles, including bodies and parts.	1909	5	398	2	41	355	235	572	34	187	314	666	352
	1904	3	183		19	164		368	12	91	133	269	136
Boxes, cigars.....	1909	4	119	4	7	108	90	118	5	39	62	128	66
	1904	4	116	6	19	91		70	8	27	55	114	59
	1899	3	80	5	1	74		67	(*)	20	71	104	33
Boxes, fancy and paper.....	1909	6	164	10	9	145	115	127	7	50	79	164	85
	1904	4	154	4	11	139		88	7	35	47	105	58
	1899	5	122	9	2	111		66	2	27	39	100	61
Brass and bronze products.....	1909	8	79	9	13	57	72	116	10	30	91	149	68
	1904	5	209	3	20	186		616	12	73	138	273	135
	1899	13	24	4	5	15		32	3	9	15	35	20
Bread and other bakery products.....	1909	55	447	98	37	342	282	517	16	191	536	950	414
	1904	53	387	64	29	294		332	18	137	373	676	303
	1899	51	307	59	31	217		285	19	104	234	501	267
Brooms and brushes.....	1909	6	61	8	6	47	26	82	(*)	16	88	159	71
	1904	5	48	7		41		40		16	39	72	33
	1899	7	59	11	5	43		28		13	45	74	29
Carriages and wagons and materials.....	1909	8	314	11	13	290	224	292	11	145	163	413	250
	1904	15	276	8	18	250		600	15	105	205	394	189
	1899	18			15	190		398	8	78	94	284	190
Cars and general shop construction and repairs by steam-railroad companies.	1909	6	2,705		137	2,628	5,752	3,985	82	1,681	3,767	5,061	1,894
	1904	5	2,648		78	2,572		3,264	60	1,476	2,719	4,275	1,556
	1899	4	2,008		46	1,962		2,069	46	1,046	2,255	6,315	4,060

* Excluding statistics for one establishment, to avoid disclosure of individual operations.
 † Excluding statistics for two establishments, to avoid disclosure of individual operations.
 ‡ Not reported separately.
 § 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.
 ¶ Less than \$500.

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).							
READING—Continued.													
Clothing, men's, including shirts.....	1909	10	608	20	54	534	118	\$508	\$56	\$167	\$567	\$938	\$371
	1904	8	320	10	20	281	.....	223	18	81	377	561	184
	1899	9	283	18	19	246	.....	227	24	69	281	436	155
Clothing, women's.....	1909	7	161	9	2	150	40	63	1	36	71	130	69
	1904	4	60	6	1	43	.....	18	2	10	19	46	27
	1899	5	58	9	.....	49	.....	18	.....	12	30	55	25
Confectionery.....	1909	10	507	13	109	385	388	515	72	96	600	1,047	447
	1904	5	422	4	39	379	.....	427	45	84	427	781	354
	1899	3	.....	.....	34	293	.....	128	31	58	200	325	125
Copper, tin, and sheet-iron products.....	1909	3	15	2	.....	13	3	21	.....	9	15	33	18
	1904	4	37	3	3	31	.....	39	2	18	18	47	29
	1899	7	.....	.....	5	25	.....	89	2	12	43	79	36
Dyeing and finishing textiles.....	1909	4	298	1	25	272	625	290	21	84	134	294	160
	1904	3	150	4	11	135	.....	131	13	51	70	180	110
	1899	4	31	5	3	23	.....	37	1	9	16	33	17
Foundry and machine-shop products.....	1909	37	3,079	26	221	2,832	3,389	4,293	227	1,384	1,716	3,889	2,173
	1904	36	2,904	35	149	2,810	.....	3,135	138	969	1,200	2,991	1,791
	1899	34	.....	.....	216	3,166	.....	4,335	186	1,282	1,606	3,892	2,196
Hats, fur-felt.....	1909	5	870	6	28	836	87	589	68	367	885	1,571	686
	1904	3	641	6	18	617	.....	537	23	230	532	947	416
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hosiery and knit goods.....	1909	38	4,521	30	95	4,396	2,097	4,025	114	1,323	2,132	4,551	2,419
	1904	27	2,966	23	130	2,813	.....	2,098	81	721	1,164	2,540	1,376
	1899	21	1,741	24	50	1,667	.....	710	38	391	697	1,326	629
Iron and steel, steel works and rolling mills.....	1909	6	3,218	.....	207	3,011	11,209	6,824	268	1,670	5,350	8,190	2,840
	1904	6	2,209	.....	125	2,084	.....	3,835	129	1,081	3,437	4,818	1,381
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Leather goods.....	1909	5	89	6	9	74	84	63	5	24	63	128	65
	1904	3	29	2	4	23	.....	29	2	8	24	43	19
	1899	3	.....	.....	.....	10	.....	11	.....	4	6	16	10
Liquors, malt.....	1909	4	153	4	44	105	1,555	2,546	87	73	349	1,417	1,068
	1904	4	118	1	25	92	.....	984	64	68	267	1,168	901
	1899	5	.....	.....	18	109	.....	966	25	62	179	834	655
Lumber and timber products.....	1909	6	246	1	23	222	722	427	21	106	306	547	241
	1904	6	196	3	22	171	.....	212	15	88	253	401	148
	1899	15	159	7	6	146	.....	179	5	69	185	302	117
Marble and stone work.....	1909	9	110	16	3	91	179	131	4	53	47	156	109
	1904	15	62	5	1	56	.....	90	1	38	40	103	63
	1899	10	.....	.....	5	86	.....	159	3	44	39	117	78
Optical goods.....	1909	3	288	2	13	273	170	392	18	86	139	339	200
	1904	3	167	3	29	135	.....	374	31	41	52	191	189
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Patent medicines and compounds and druggists' preparations.....	1909	13	32	16	1	15	10	31	1	6	33	67	34
	1904	8	26	12	2	12	.....	24	1	5	9	41	32
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Printing and publishing.....	1909	37	452	42	134	276	355	571	80	199	162	743	581
	1904	34	410	42	128	240	.....	416	72	122	110	564	464
	1899	30	339	34	33	272	.....	540	22	127	92	435	343
Tobacco manufactures.....	1909	81	1,589	107	79	1,403	49	1,250	95	563	1,282	2,574	1,282
	1904	81	1,734	101	105	1,528	.....	1,078	100	595	1,056	2,484	1,428
	1899	476	1,260	91	62	1,107	.....	750	53	422	784	1,683	889
Woolen, worsted, and felt goods, and wool hats.....	1909	5	543	12	37	494	628	703	37	237	740	1,315	575
	1904	13	318	8	13	297	.....	372	13	116	302	484	182
	1899	44	304	8	1	295	.....	450	1	127	294	528	234
All other industries.....	1909	101	5,281	92	398	4,791	14,674	11,912	470	2,189	10,157	14,916	4,759
	1904	75	2,893	81	243	2,569	.....	7,773	210	979	3,643	5,203	2,280
	1899	106	.....	.....	384	6,786	.....	14,360	385	2,598	9,701	15,208	5,507
SCRANTON—All industries.....													
	1909	293	14,242	270	1,121	12,851	20,584	\$22,494	\$1,337	\$5,146	\$14,302	\$26,385	\$12,053
	1904	258	11,901	243	746	10,912	.....	19,161	840	4,428	11,253	20,453	9,290
	1899	247	.....	.....	550	11,139	.....	18,984	710	4,388	17,220	24,742	7,522
Bread and other bakery products.....	1909	38	322	36	42	244	200	412	31	118	479	759	280
	1904	25	250	26	32	192	.....	204	29	88	331	572	241
	1899	27	190	30	28	132	.....	192	18	55	208	358	150
Brick and tile.....	1909	3	74	1	8	65	525	166	6	26	15	59	44
	1904	4	128	4	7	117	.....	102	5	45	17	88	71
	1899	3	80	11	2	67	.....	60	2	23	4	42	38
Carriages and wagons and materials.....	1909	13	230	18	15	197	294	534	15	103	150	331	181
	1904	10	158	14	15	129	.....	259	10	63	74	200	126
	1899	48	.....	.....	8	127	.....	344	4	65	81	217	136

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

STATISTICS OF MANUFACTURES.

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.													
SCRANTON—Continued.													
Clothing, women's.....	1909	7	446	9	16	421	103	\$270	\$15	\$128	\$285	\$550	\$255
	1904	4	167	6	12	149		187	9	55	68	169	101
	1899	3	332	4	6	322		36	3	60	50	133	83
Copper, tin, and sheet-iron products.....	1909	8	60	8	4	48	5	40	2	22	31	75	44
	1904	3	35	4		31		18		24	21	63	42
	1899												
Flour-mill and gristmill products.....	1909	4	35	5	11	19	268	127	6	6	189	227	38
	1904	6	65	4	20	41		343	17	20	828	948	120
	1899	4	46	3	8	35		335	12	18	395	462	67
Foundry and machine-shop products.....	1909	20	1,286	16	187	1,083	2,467	5,463	228	567	853	2,218	1,365
	1904	13	1,200	7	153	1,040		5,759	180	540	704	1,902	1,198
	1899	13	1,443	10	52	1,381		3,954	91	707	820	1,756	936
Gas and electric fixtures and lamps and reflectors.	1909	3	27	2	2	23	19	50	3	10	16	33	17
	1904	3	31	2	3	26		32	3	10	13	32	19
	1899	3			2	13		6	2	7	8	23	15
Liquors, malt.....	1909	5	341		60	281	1,172	2,130	164	214	509	1,947	1,438
	1904	4	185		36	149		1,342	91	110	204	1,227	963
	1899	6	210		29	181		1,431	92	117	220	1,196	976
Lumber and timber products.....	1909	9	432	9	34	389	737	1,095	40	212	603	933	330
	1904	10	382	5	35	342		683	35	199	490	860	370
	1899	11			21	277		593	20	120	379	610	231
Patent medicines and compounds and druggists' preparations.	1909	10	96	8	28	60	1	72	18	17	37	197	160
	1904	9	24	8	1	15		20	(¹)	5	16	46	30
	1899	6	14	7	1	6		4	(¹)	2	4	11	7
Printing and publishing.....	1909	48	800	50	162	588	700	1,452	163	354	445	1,309	864
	1904	43	647	40	78	529		1,078	51	338	292	1,098	806
	1899	36			77	369		994	53	179	196	882	686
Silk and silk goods, including throwsters.	1909	15	3,908	9	85	3,814	4,738	2,957	121	976	4,040	6,631	1,991
	1904	10	3,125	8	56	3,061		2,359	70	607	3,287	4,427	1,140
	1899	6			59	2,517		1,878	85	400	2,978	3,819	841
Tobacco manufactures.....	1909	28	339	32	43	284	135	549	40	88	288	638	350
	1904	32	173	36	4	133		64	2	52	64	178	114
	1899	27	271	34	27	210		274	22	79	210	506	296
All other industries.....	1909	82	5,846	67	424	5,355	9,200	7,147	485	2,305	5,762	10,478	4,713
	1904	82	5,331	79	294	4,958		6,081	338	2,272	4,784	8,043	3,859
	1899	94			230	5,502		8,883	306	2,556	11,697	14,727	3,060
WILKES-BARRE—All industries.													
	1909	176	8,329	177	599	7,553	12,109	\$18,011	\$743	\$3,323	\$6,433	\$13,526	\$7,093
	1904	129	6,495	162	423	5,920		11,716	481	2,496	5,265	11,000	5,735
	1899	138			362	4,749		9,702	381	1,745	4,309	8,617	4,308
Bread and other bakery products.....	1909	28	254	31	27	196	126	278	27	109	418	660	242
	1904	13	161	14	18	129		197	13	67	287	446	150
	1899	15	165	18	9	138		146	6	51	123	247	124
Brick and tile.....	1909	3	85	3	7	75	190	37	4	30	11	63	52
	1904	3	63	5	2	58		21	1	22	5	36	31
	1899												
Clothing, women's.....	1909	3	322	2	21	299	46	333	33	76	213	383	170
	1904	3	473	5	32	436		298	17	92	255	508	248
	1899	3	667	7	24	636		512	44	137	317	627	310
Flour-mill and gristmill products.....	1909	4	27	3	6	18	270	147	4	10	293	332	89
	1904	4	31	3	4	24		191	4	15	273	315	42
	1899	4	29	3	11	15		122	8	7	120	148	28
Furniture and refrigerators.....	1909	4	84	5	9	70	56	100	7	26	33	80	47
	1904	3	76	5	2	69		62	3	17	16	46	30
	1899												
Printing and publishing.....	1909	31	462	36	99	327	320	597	94	206	206	796	560
	1904	22	371	24	69	278		526	56	158	137	670	433
	1899	26	335	26	50	259		370	37	118	84	411	327
Silk and silk goods, including throwsters.	1909	6	1,113		30	1,083	1,866	1,390	27	247	407	1,066	659
	1904	3	953	4	31	918		743	39	195	649	1,055	406
	1899												
Tobacco manufactures.....	1909	13	36	14		22		36		11	16	40	24
	1904	17	67	18	3	46		39	2	24	23	72	49
	1899	16	59	20	1	38		33	1	16	29	67	38
All other industries.....	1909	84	5,946	83	400	5,463	9,235	13,093	547	2,608	4,836	10,136	5,300
	1904	61	4,300	74	262	3,964		9,639	346	1,906	3,020	7,957	4,357
	1899	74			207	3,663		8,519	285	1,416	3,636	7,117	3,481

¹ Figures can not be shown without disclosing individual operations.

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

³ Excluding statistics for two establishments, to avoid disclosure of individual operations.

⁴ Less than \$500.

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.

SUPPLEMENT FOR PENNSYLVANIA.

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

CITY OR BOROUGH.	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.										
Beaver Falls.....	1909	44	2,456	34	242	2,180	5,141	\$7,503	\$287	\$1,218	\$3,015	\$6,400	\$3,386
	1904	42	2,492	26	234	2,232	.....	6,518	280	1,242	2,738	4,908	2,666
	1899	47	.....	.....	142	2,174	.....	6,521	174	971	3,859	6,229	2,370
Bethlehem.....	1909	49	1,727	54	90	1,583	3,086	3,300	105	593	2,330	3,712	1,382
	1904	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Brad dock.....	1909	41	1,218	36	142	1,040	7,332	5,369	160	785	3,347	5,094	1,747
	1904	38	1,365	34	106	1,225	.....	3,283	118	756	2,738	4,125	1,387
	1899	30	.....	.....	64	815	.....	2,472	55	526	2,566	4,091	1,526
Bradford.....	1909	82	1,650	104	228	1,318	3,856	4,226	229	655	2,442	3,887	1,445
	1904	80	1,734	91	153	1,490	.....	3,276	161	841	1,593	3,192	1,599
	1899	65	.....	.....	74	1,200	.....	2,122	80	697	1,635	3,125	1,490
Butler.....	1909	61	3,344	102	419	2,823	10,405	16,769	457	1,571	7,594	11,058	3,464
	1904	48	2,489	74	322	2,093	.....	9,910	374	1,114	4,660	6,832	2,172
	1899	41	.....	.....	33	792	.....	1,419	44	416	520	1,408	883
Carbondale.....	1909	34	1,636	20	104	1,503	1,407	2,307	123	636	1,253	2,523	1,270
	1904	32	1,631	22	134	1,475	.....	2,679	171	606	1,113	2,316	1,203
	1899	26	.....	.....	67	1,023	.....	1,452	68	340	470	1,146	676
Carlisle.....	1909	50	1,590	148	108	1,334	1,785	2,054	144	511	1,431	2,406	1,065
	1904	48	1,496	53	103	1,340	.....	1,474	101	411	1,129	1,985	887
	1899	39	.....	.....	74	1,121	.....	923	90	328	1,047	1,708	661
Carnegie.....	1909	19	509	17	70	422	1,245	2,371	94	275	2,441	3,099	658
	1904	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chambersburg.....	1909	57	1,631	56	211	1,364	3,126	3,484	177	599	1,170	2,456	1,286
	1904	47	981	52	86	843	.....	1,033	58	312	569	1,085	516
	1899	44	.....	.....	34	612	.....	722	25	222	478	815	337
Chester.....	1909	123	7,867	102	779	6,986	17,131	23,928	965	3,392	11,576	19,373	7,797
	1904	131	7,612	120	431	7,061	.....	22,070	607	3,417	10,422	16,645	6,223
	1899	121	.....	.....	307	6,972	.....	17,672	486	3,131	8,571	14,940	6,369
Columbia.....	1909	47	2,944	45	126	2,773	6,589	3,580	130	1,107	2,671	4,807	2,136
	1904	44	3,187	38	115	3,034	.....	2,904	105	943	2,453	3,887	1,434
	1899	53	.....	.....	83	2,519	.....	2,286	61	881	2,572	4,214	1,642
Connellsville.....	1909	39	1,269	28	206	1,035	4,526	3,275	194	576	817	1,971	1,154
	1904	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dubois.....	1909	37	1,210	37	158	1,015	3,199	2,304	133	507	926	1,890	964
	1904	32	1,041	32	109	900	.....	2,593	85	459	961	1,709	748
	1899	24	.....	.....	33	817	.....	1,411	32	329	1,153	1,768	615
Dunmore.....	1909	18	1,423	16	99	1,308	1,266	938	133	603	670	1,851	1,181
	1904	15	1,219	9	77	1,133	.....	1,041	114	464	550	1,400	910
	1899	18	.....	.....	50	614	.....	1,021	47	276	490	1,132	642
Easton.....	1909	126	3,769	138	243	3,388	5,965	7,687	246	1,524	3,424	6,915	3,491
	1904	97	3,047	106	221	2,720	.....	4,336	190	1,180	2,684	5,059	2,375
	1899	106	.....	.....	147	3,262	.....	4,346	129	1,200	3,193	5,425	2,232
Greensburg.....	1909	47	393	50	33	310	738	938	32	163	330	726	396
	1904	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hazleton.....	1909	77	2,998	84	232	2,682	3,112	5,209	250	940	2,702	4,707	2,065
	1904	62	1,575	65	104	1,406	.....	2,575	107	434	1,130	2,136	1,036
	1899	45	.....	.....	72	822	.....	1,320	50	234	293	999	706
Homestead.....	1909	26	248	17	60	171	890	1,273	49	111	322	659	387
	1904	27	369	27	35	307	.....	733	45	171	265	713	448
	1899	15	.....	.....	12	164	.....	173	10	93	101	266	165
Lancaster.....	1909	306	8,981	317	707	7,957	10,037	17,443	813	3,236	8,841	15,979	7,138
	1904	300	9,432	324	415	8,693	.....	12,395	415	3,089	7,598	14,048	7,050
	1899	284	.....	.....	362	7,504	.....	9,470	356	2,569	6,453	12,750	6,237
Lebanon.....	1909	109	6,077	105	381	5,591	21,717	12,276	409	2,441	6,778	11,429	4,651
	1904	103	4,841	111	343	4,387	.....	7,831	304	1,791	3,270	6,978	3,699
	1899	97	.....	.....	177	4,475	.....	5,675	175	1,779	4,745	7,658	2,913
McKees Rocks.....	1909	31	3,903	21	291	3,591	8,872	10,328	335	2,309	5,407	9,787	4,380
	1904	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
McKeesport.....	1909	68	9,093	58	789	8,246	49,935	43,433	891	6,031	27,296	42,495	15,199
	1904	75	9,618	74	696	8,848	.....	16,286	778	5,521	12,810	23,054	10,744
	1899	67	.....	.....	473	7,213	.....	15,088	445	4,147	21,835	36,053	14,222
Mahanoy City.....	1909	33	666	44	32	590	753	994	20	166	383	868	485
	1904	29	293	33	22	238	.....	467	41	93	133	431	298
	1899	29	.....	.....	23	301	.....	511	15	74	113	401	288
Meadville.....	1909	62	2,506	54	404	2,048	2,539	2,725	337	974	1,716	3,559	1,843
	1899	52	1,520	63	187	1,300	.....	1,761	115	602	864	2,075	1,111
	1904	46	.....	.....	93	1,201	.....	1,168	74	535	889	1,668	779

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.

STATISTICS OF MANUFACTURES.

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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 OR BOROUGH.	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).							
Mount Carmel.....	1909	20	651	28	23	600	322	\$435	\$19	\$144	\$416	\$785	\$369
	1904	19	238	29	12	197	.....	317	11	79	427	620	193
	1899	9	.....	.....	11	109	.....	334	7	39	260	393	133
Wantlooke.....	1909	17	378	15	15	348	447	420	24	120	180	423	243
	1904	12	263	13	21	229	.....	314	16	65	160	358	198
	1899	17	.....	.....	29	140	.....	291	6	44	182	310	128
New Castle.....	1909	82	6,063	73	651	5,339	64,697	27,028	753	3,870	30,974	38,038	7,064
	1904	71	6,050	69	548	5,433	.....	18,490	611	3,430	21,212	28,023	7,711
	1899	71	.....	.....	184	4,529	.....	12,953	239	2,988	13,146	20,016	6,870
Norristown.....	1909	111	4,223	104	301	3,818	5,713	6,984	378	1,553	3,274	7,413	4,139
	1904	84	3,781	66	198	3,517	.....	5,307	226	1,315	2,807	5,925	3,058
	1899	77	.....	.....	154	2,944	.....	3,074	126	977	2,159	4,107	1,948
Oil City.....	1909	34	1,593	44	211	1,338	2,467	3,847	227	903	2,300	4,122	1,822
	1904	36	1,755	31	167	1,557	.....	4,887	171	928	1,334	3,082	1,748
	1899	42	.....	.....	105	1,683	.....	3,804	138	878	3,688	5,164	1,476
Phoenixville.....	1909	31	2,822	37	186	2,599	15,162	8,765	235	1,180	3,717	5,876	2,159
	1904	31	3,027	43	96	2,888	.....	7,461	140	1,314	3,023	5,570	2,477
	1899	32	.....	.....	111	2,249	.....	5,820	107	910	1,847	3,322	1,476
Pittston.....	1909	40	942	30	111	792	2,133	2,337	92	316	1,067	1,969	902
	1904	40	937	44	63	830	.....	1,614	72	307	728	1,475	747
	1899	27	.....	.....	41	357	.....	902	39	158	623	998	375
Plymouth.....	1909	23	986	21	57	908	1,412	2,544	49	281	704	1,179	475
	1904	23	906	23	56	827	.....	669	34	210	447	860	413
	1899	24	.....	.....	37	750	.....	470	20	139	241	533	292
Pottstown.....	1909	78	4,123	84	359	3,650	17,415	9,961	494	1,722	8,999	12,505	3,506
	1904	77	3,825	97	271	3,457	.....	6,420	295	1,516	5,438	8,145	2,707
	1899	65	.....	.....	159	2,691	.....	4,683	135	1,166	4,845	7,357	2,512
Pottsville.....	1909	91	3,342	100	370	2,872	15,262	13,982	341	1,326	5,927	9,138	3,211
	1904	79	2,127	87	136	1,904	.....	3,304	150	759	4,025	5,806	1,781
	1899	77	.....	.....	139	1,699	.....	3,107	105	561	3,430	4,830	1,400
Shamokin.....	1909	30	1,744	34	87	1,623	1,862	3,227	121	499	2,129	3,544	1,415
	1904	48	980	61	22	897	.....	1,115	27	260	1,026	1,444	418
	1899	46	.....	.....	34	762	.....	685	29	197	700	1,147	447
Sharon.....	1909	45	3,795	51	428	3,316	27,462	14,649	455	2,000	6,683	9,881	3,198
	1904	37	2,029	34	183	1,812	.....	6,664	198	997	3,791	5,671	1,880
	1899	35	.....	.....	62	1,827	.....	4,134	77	898	2,264	3,765	1,501
Shenandoah.....	1909	29	301	24	35	242	1,382	1,051	37	134	336	887	551
	1904	30	219	30	19	170	.....	740	18	100	181	595	414
	1899	22	.....	.....	9	107	.....	313	11	47	94	302	208
South Bethlehem.....	1909	49	8,469	65	419	7,985	31,562	41,121	604	4,973	15,967	26,417	10,450
	1904	46	6,104	45	305	5,754	.....	18,059	395	2,753	7,261	15,275	8,014
	1899	38	.....	.....	254	4,645	.....	8,047	321	2,113	4,862	9,904	5,102
Sunbury.....	1909	39	2,339	42	228	2,069	2,835	4,768	297	1,118	2,228	4,450	2,222
	1904	32	1,551	38	56	1,457	.....	1,138	57	678	1,702	2,593	891
	1899	29	.....	.....	72	968	.....	1,803	51	358	1,158	1,868	710
Uniontown.....	1909	41	492	38	119	335	1,020	1,686	163	225	379	1,347	968
	1904	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Warren.....	1909	72	1,767	70	208	1,489	3,960	5,796	266	826	3,676	5,744	2,068
	1904	63	1,412	66	172	1,174	.....	4,882	186	645	2,719	4,686	1,947
	1899	43	.....	.....	69	1,050	.....	2,724	71	486	2,154	3,681	1,527
Washington.....	1909	75	2,387	68	193	2,126	4,216	3,983	264	1,119	2,447	4,837	2,390
	1904	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
West Chester.....	1909	35	1,113	35	162	916	934	2,489	182	478	667	2,146	1,479
	1904	35	993	33	111	849	.....	1,671	102	412	674	2,121	1,447
	1899	35	.....	.....	63	497	.....	1,051	48	234	316	859	543
Wilkinsburg.....	1909	24	231	21	25	185	1,016	535	21	129	262	538	276
	1904	30	230	24	22	184	.....	427	23	127	235	472	237
	1899	16	.....	.....	8	100	.....	216	4	62	126	246	120
Williamsport.....	1909	169	6,534	139	754	5,641	11,713	14,070	768	2,527	7,090	13,348	6,288
	1904	115	5,880	133	451	5,296	.....	12,004	485	2,026	6,015	11,367	5,351
	1899	142	.....	.....	358	4,717	.....	8,661	320	1,767	5,601	9,726	4,125
York.....	1909	218	11,630	221	817	10,492	15,344	22,419	1,133	4,438	8,866	18,622	9,756
	1904	228	8,838	266	620	7,952	.....	14,292	634	3,039	6,480	13,333	6,853
	1899	241	.....	.....	348	6,851	.....	8,794	416	2,346	5,400	10,500	5,100
All other cities or boroughs ³	1909	99	20,296	78	1,935	18,283	165,503	106,264	2,445	12,977	77,960	103,288	25,328

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.
³ Includes Coatesville, Duquesne, Monessen, North Braddock, Old Forge, South Sharon, and Steelton.

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.		Average number.	Wage earners.		Total.	16 and over.		Under 16.				
					Male.	Female.		Number.			Male.	Female.	Male.	Female.			
								Maximum month.	Minimum month.								
1 All industries.....	27,663	1,002,171	29,743	24,953	55,703	14,229	877,543	De 960,866	Ja 819,927	(1)	(1)	(1)	(1)	(1)	2,921,547		
2 Agricultural implements.....	36	2,671	37	51	149	33	2,401	Ap 2,445	Oc 2,337	2,374	2,355	4	15	.....	3,542	
3 Artificial flowers and leathers and plumes.....	30	917	35	17	40	20	805	Ja 985	Je 560	949	101	748	6	94	75		
4 Artificial stone.....	127	671	159	30	11	5	466	Jy 573	Fe 291	605	604	.....	1	.....	602
5 Automobiles, including bodies and parts.....	44	3,560	29	113	50	50	3,199	Ja 3,953	Ja 2,349	3,938	3,907	18	13	.....	2,746	
6 Babbitt metal and solder.....	17	275	10	24	50	10	181	Oc 230	Ja 137	223	205	16	2	.....	271	
7 Bags, paper.....	19	329	20	13	26	9	261	Ja 283	Jy 248	257	124	117	5	11	220		
8 Baking powders and yeast.....	5	27	4	1	7	1	14	Ja 15	Je 12	15	11	4	.....	9		
9 Baskets, and rattan and willow ware.....	44	246	44	3	4	7	188	Se 205	Ja 141	197	144	38	15	.....	119	
10 Belting and hose, leather.....	17	243	16	16	46	9	156	Oc 163	Fe 149	157	157	.....	.....	.....	363
11 Belting and hose, woven and rubber.....	3	393	1	14	46	11	321	Ap 419	Se 282	304	246	56	2	.....	927	
12 Bicycles, motorcycles, and parts.....	11	385	10	7	20	7	341	Je 428	Ja 186	355	352	.....	3	.....	205
13 Billiard tables and materials.....	5	41	5	2	6	1	27	Ap 29	Se 24	29	28	.....	1	.....	12
14 Blacking and cleansing and polishing preparations.....	44	304	43	27	55	21	158	Je 165	De 160	156	76	78	2	.....	388	
15 Bluing.....	12	64	12	5	1	4	42	My 47	No 38	46	20	24	1	1	34		
16 Boots and shoes, including cut stock and findings.....	140	11,829	167	232	435	173	10,822	De 11,093	Ap 10,660	11,281	6,598	3,877	451	355	4,337		
17 Boxes, cigar.....	77	1,970	96	37	21	15	1,801	De 1,908	Mh 1,750	1,911	850	927	60	74	1,818		
18 Boxes, fancy and paper.....	118	5,050	133	139	103	71	4,604	De 5,063	Jy 4,382	5,084	1,394	3,032	124	534	2,121		
19 Brass and bronze products.....	104	2,524	94	120	176	54	2,080	De 2,470	Ja 1,703	2,479	2,379	62	30	8	4,998		
20 Bread and other bakery products.....	3,185	17,838	3,375	235	1,499	508	12,221	Oc 12,465	Fe 11,920	12,643	10,314	1,851	231	247	10,806		
21 Brick and tile.....	326	8,943	349	322	165	49	8,058	Jy 9,927	Ja 4,658	9,271	9,105	21	145	.....	38,247	
22 Brooms.....	84	598	103	19	26	6	444	De 478	Au 408	510	477	21	12	.....	451	
23 Brushes.....	55	541	59	16	38	12	416	Fe 424	Jy 405	420	325	76	11	1	396		
24 Butter, cheese, and condensed milk.....	536	2,093	635	158	82	41	1,177	Jy 1,330	Fe 1,024	1,234	1,154	71	8	1	7,512		
25 Buttons.....	24	1,219	25	30	27	14	1,123	Je 1,256	Ja 804	1,265	601	518	57	89	858		
26 Canning and preserving.....	83	4,379	97	96	1,200	233	2,753	Se 4,092	Ja 1,847	3,329	1,717	1,490	60	62	3,474		
27 Carpets and rugs, other than rag.....	63	12,078	108	151	246	63	11,510	Fe 11,875	Oc 11,189	12,454	7,461	4,354	342	297	13,073		
28 Carpets, rag.....	67	469	97	17	5	7	349	De 359	Je 324	394	307	71	10	6	290		
29 Carriages and wagons and materials.....	655	8,757	781	193	226	59	7,498	Je 7,932	Ja 7,188	7,455	7,338	33	84	.....	11,544	
30 Cars and general shop construction and repairs by steam-railroad companies.....	132	50,545	.....	1,942	1,915	43	46,645	De 50,665	Ap 43,721	50,660	50,539	93	28	.....	56,774
31 Cars and general shop construction and repairs by street-railroad companies.....	65	2,568	.....	67	54	5	2,442	Se 2,520	Mh 2,357	2,499	2,476	20	3	.....	4,370
32 Cars, steam-railroad, not including operations of railroad companies.....	13	8,799	.....	238	734	61	7,766	De 12,632	Fe 4,682	12,632	12,614	9	9	.....	31,732
33 Cement.....	27	8,902	.....	103	645	74	8,080	No 9,721	Ja 6,421	9,370	9,330	4	36	.....	102,904
34 Chemicals.....	37	3,573	19	83	242	44	3,185	Je 3,311	Mh 3,072	3,286	3,174	110	.....	2	9,771	
35 Chocolate and cocoa products.....	6	1,033	.....	23	127	20	863	Jy 983	Fe 694	966	476	400	79	11	2,885	
36 Clocks and watches, including cases and materials.....	8	1,587	3	34	71	84	1,395	No 1,470	Mh 1,330	1,390	860	494	22	14	1,033		
37 Cloth, sponging and refinishing.....	8	139	9	3	2	3	119	Se 126	Ja 118	121	119	.....	2	.....	161
38 Clothing, men's, including shirts.....	696	26,405	1,099	321	1,055	307	23,623	De 24,997	Au 22,724	25,805	8,548	16,130	239	888	5,288		
39 Clothing, women's.....	401	18,080	646	271	1,028	494	15,701	De 16,727	Jy 13,971	16,995	5,112	11,590	31	262	2,514		
40 Coffins, burial cases, and undertakers' goods.....	36	1,309	36	60	92	18	1,103	De 1,128	Jy 1,083	1,129	875	246	5	3	1,447		
41 Coke.....	146	16,219	83	364	406	35	15,331	De 17,521	Ap 13,296	17,562	17,558	3	1	.....	26,091	
42 Confectionery.....	251	6,436	255	158	429	180	5,408	No 6,683	Jy 4,758	6,631	2,274	3,839	118	400	3,869		
43 Cooperage and wooden goods, not elsewhere specified.....	133	1,903	155	55	38	25	1,630	Je 1,677	Fe 1,560	1,752	1,608	52	92	.....	3,681	
44 Copper, tin, and sheet-iron products.....	339	7,992	382	240	428	127	6,815	No 7,522	Fe 6,052	7,481	6,713	535	177	56	8,245		
45 Cordage and twine and jute and linen goods.....	18	2,228	12	37	52	8	2,119	No 2,196	My 2,000	2,193	1,048	900	134	105	4,630		
46 Cork, cutting.....	10	1,789	9	14	27	12	1,727	Se 1,859	Ja 1,541	1,788	831	796	105	56	2,045		
47 Corsets.....	6	629	4	15	52	122	433	Je 486	Ja 384	416	67	347	.....	2	85	
48 Cotton goods, including cotton small wares.....	175	17,386	156	348	449	140	16,293	No 16,709	Fe 15,817	16,866	7,405	8,318	424	719	24,589		
49 Crucibles.....	5	135	4	12	11	2	106	De 119	Ap 84	119	119	.....	.....	.....	336
50 Cutlery and tools, not elsewhere specified.....	129	4,832	114	163	229	76	4,250	De 4,561	Jy 3,985	4,625	4,411	141	60	7	11,311		
51 Dairy men's, poulterers', and apiarists' supplies.....	13	789	5	20	69	45	650	Mh 730	Se 539	649	635	12	2	.....	465	
52 Dentists' materials.....	23	1,218	27	33	60	26	1,072	De 1,124	Au 1,036	1,124	686	372	4	63	427		
53 Dyeing and finishing textiles.....	135	6,688	155	156	216	75	6,086	De 6,376	Jy 5,954	6,222	5,230	753	202	37	13,560		
54 Electrical machinery, apparatus, and supplies.....	84	14,641	42	520	2,530	524	11,025	De 13,940	Fe 9,692	14,145	12,006	2,055	70	14	33,829		
55 Electroplating.....	35	211	49	7	5	4	146	De 159	Jy 136	161	146	5	10	.....	309	
56 Emery and other abrasive wheels.....	6	117	2	12	17	2	84	De 96	Ja 75	96	96	.....	.....	.....	452
57 Enameling and japanning.....	14	300	10	16	27	5	242	No 310	Ja 203	318	287	71	10	.....	492	
58 Explosives.....	27	1,225	20	59	97	10	1,033	Se 1,159	Mh 906	1,111	1,002	101	8	.....	4,594	
59 Fancy articles, not elsewhere specified.....	52	951	55	16	30	22	828	De 928	Ja 707	922	451	426	28	17	498		
60 Fertilizers.....	48	1,517	52	60	147	34	1,224	Ap 1,473	Je 1,109	1,162	1,159	.....	8	.....	5,174
61 Files.....	7	1,298	4	16	44	17	1,217	De 1,239	Oc 1,200	1,239	900	237	88	14	1,213		
62 Firearms and ammunition.....	14	406	14	15	8	4	365	Oc 436	Jy 262	470	172	270	16	12	82		

No figures given for reasons explained in the Introduction.

STATISTICS OF MANUFACTURES.

755

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 \$2,749,005,975	\$2,355,385,390	\$51,307,848	\$59,589,394	\$455,626,790	\$137,332,192	\$1,445,227,796	\$11,186,157	\$30,365,929	\$14,582,289	\$150,166,995	\$2,626,742,034	\$1,044,182,046
2 0,491,212	4,019,921	108,611	148,402	1,222,897	70,027	2,012,195	454	21,208	220	435,907	4,804,521	2,722,299
3 943,344	1,121,466	33,912	38,267	262,487	6,310	609,049	20,533	1,418	7,010	82,434	1,318,651	643,285
4 838,641	557,889	29,624	9,670	212,485	7,062	251,182	7,043	2,550	358	37,915	784,248	520,004
5 0,971,377	6,821,594	210,540	173,918	1,807,802	71,286	3,979,507	45,107	10,157	.....	523,217	6,531,733	2,450,880
6 965,830	2,006,491	47,996	44,556	107,409	18,112	1,698,852	6,003	3,114	.....	80,389	2,117,445	400,481
7 589,697	787,319	16,538	16,681	88,510	6,861	605,331	9,841	524	.....	43,033	937,101	324,909
8 72,531	66,309	1,820	6,030	10,594	220	38,243	2,581	.....	.....	6,821	70,024	40,561
9 197,369	271,505	5,453	4,087	75,845	1,463	155,007	8,134	656	.....	17,260	317,556	158,086
10 973,101	1,250,818	29,360	44,606	104,898	10,330	1,000,824	10,258	2,980	.....	47,582	1,378,720	367,566
11 919,940	1,018,741	38,107	50,019	147,793	14,288	676,486	850	1,349	.....	89,809	1,074,843	384,089
12 635,429	629,504	16,830	17,560	193,353	6,003	332,873	966	975	.....	61,014	597,071	258,195
13 106,184	72,622	3,900	1,498	16,778	678	33,397	1,518	288	.....	11,865	95,725	61,650
14 695,441	666,260	46,097	59,400	68,018	8,077	378,715	12,719	2,443	.....	86,988	764,966	388,174
15 67,170	106,110	6,604	2,514	13,641	893	64,975	2,635	208	.....	92	14,458	56,431
16 11,660,693	18,432,282	619,589	541,891	4,266,300	77,151	11,986,631	79,581	14,410	5,955	840,765	20,218,784	8,155,002
17 1,625,734	2,004,469	45,389	21,803	579,850	21,930	1,230,473	9,122	4,692	826	90,384	2,327,739	1,075,336
18 3,421,711	4,461,560	198,441	109,582	1,471,772	56,487	2,233,281	120,452	6,931	1,194	263,420	5,183,847	2,894,079
19 8,892,044	7,727,706	247,693	207,911	1,233,701	129,473	5,476,302	30,944	28,011	11,323	363,408	8,454,620	2,849,845
20 30,887,986	38,917,008	438,629	1,368,053	6,528,296	805,454	26,464,162	526,638	215,648	19,998	2,490,730	45,850,070	18,520,454
21 20,150,106	8,029,554	406,631	139,210	3,881,202	1,626,288	826,751	89,447	68,210	18,317	973,498	9,225,204	6,772,165
22 729,005	1,037,040	11,226	22,985	6,295	730,594	7,997	984	2,043	.....	41,581	1,261,302	524,413
23 523,070	893,798	30,560	32,480	195,471	6,712	611,043	28,456	586	18,000	40,481	1,042,312	524,557
24 4,290,786	12,695,937	88,896	66,578	166,098	11,608,292	19,935	15,952	3,738	.....	270,083	13,544,065	1,869,075
25 877,126	1,320,707	63,210	32,035	403,717	15,513	730,617	14,400	4,728	.....	56,547	1,565,397	819,267
26 8,866,817	8,588,518	252,268	1,265,804	947,171	59,570	4,604,963	21,501	42,785	3,626	1,390,830	9,484,026	4,819,493
27 24,720,922	22,632,265	450,043	5,169,275	276,388	14,371,910	95,528	38,627	125,712	1,792,555	24,879,232	10,230,934	
28 874,875	470,031	5,554	11,219	135,439	5,461	285,902	8,409	1,380	319	16,348	559,565	208,202
29 14,364,549	10,880,003	283,212	217,105	3,861,336	181,008	5,526,017	88,121	53,045	14,957	665,102	12,748,363	7,041,356
30 45,341,024	75,941,781	1,496,150	1,492,623	30,156,602	1,265,787	40,135,638	10,665	120,053	2,674	1,261,589	76,035,180	34,633,765
31 2,463,970	2,747,597	67,178	43,283	1,477,337	37,208	1,056,965	1,035	21,683	2,504	40,314	2,747,468	1,633,295
32 31,281,576	26,995,527	556,345	685,769	4,819,137	484,483	18,517,739	6,000	106,134	.....	1,819,927	27,509,748	8,507,523
33 50,855,609	17,495,226	359,569	687,498	3,875,262	3,900,170	6,207,815	70,869	140,611	42,615	2,210,817	18,855,237	8,747,252
34 23,534,639	13,503,136	304,829	254,228	1,892,313	509,580	9,690,341	10,990	42,142	269	798,444	16,878,162	5,778,241
35 3,483,691	3,822,728	70,370	215,992	323,901	57,757	2,897,445	12,500	9,858	.....	234,905	4,810,061	1,856,750
36 4,651,284	2,395,602	103,271	79,673	728,027	15,409	1,150,094	3,168	3,035	.....	306,325	2,873,495	1,701,332
37 76,785	116,406	8,080	2,576	78,599	4,493	9,070	7,163	225	6,131	5,129	142,054	128,551
38 20,790,249	35,319,054	501,113	1,190,904	8,991,735	232,925	19,630,209	451,661	9,022	2,501,394	1,810,091	39,681,760	19,818,626
39 12,254,847	28,606,819	437,791	1,229,567	7,140,306	142,951	18,013,282	422,110	10,403	239,467	1,030,942	32,837,424	14,681,191
40 2,876,673	2,484,156	85,248	100,876	514,407	22,915	1,561,593	19,133	7,763	.....	181,491	2,757,301	1,182,793
41 68,023,289	44,512,169	594,358	348,150	8,435,604	32,485,287	1,277,166	105,353	310,705	17,029	937,617	51,816,449	18,053,996
42 8,204,256	11,882,054	325,864	487,243	1,760,220	152,396	6,050,129	154,073	41,215	23,413	889,901	13,541,759	5,339,234
43 3,630,789	4,072,908	93,500	38,753	755,661	25,214	2,964,170	32,439	9,974	500	152,787	4,629,893	1,640,509
44 17,683,445	14,270,538	409,048	420,285	3,443,550	173,176	8,677,660	116,373	40,055	16,823	913,574	17,197,057	8,340,227
45 5,161,065	3,997,428	110,680	65,801	685,170	41,932	2,959,484	1,050	8,850	200	115,281	4,804,775	1,803,359
46 3,362,489	2,532,629	71,000	32,691	535,220	30,847	1,633,560	2,040	10,663	.....	210,708	2,965,453	1,296,046
47 351,077	646,767	31,213	95,618	135,793	1,862	275,308	3,746	53	9,400	92,764	724,173	447,003
48 33,602,380	29,927,505	937,664	674,348	7,034,407	450,989	18,306,036	243,547	71,857	220,998	1,987,749	33,917,033	15,160,008
49 910,401	611,118	45,202	14,280	59,091	11,411	419,067	.....	3,693	.....	57,774	727,593	297,115
50 12,405,897	6,888,607	301,549	247,131	2,279,780	199,817	3,231,524	30,498	27,572	1,613	569,123	8,022,402	4,591,061
51 1,994,237	1,737,503	32,709	128,769	344,736	10,580	428,970	1,620	3,022	.....	787,197	1,712,290	1,272,740
52 2,789,175	2,226,770	163,800	89,712	464,301	26,101	1,299,376	56,157	5,790	272	121,261	2,745,223	1,410,746
53 13,241,764	10,079,920	356,531	241,374	2,988,496	650,393	4,680,294	70,035	51,199	2,741	1,038,857	12,059,297	6,728,610
54 59,973,876	27,802,380	1,286,971	2,770,794	6,237,046	263,946	13,280,952	98,742	151,533	16,605	3,705,797	31,351,312	17,810,414
55 135,145	191,965	10,150	5,503	90,942	7,982	54,836	13,735	121	100	7,696	256,270	193,452
56 512,793	209,819	29,900	10,602	51,202	6,188	74,572	530	632	1,600	37,537	273,302	192,602
57 803,762	588,420	22,270	19,728	96,063	6,829	402,212	4,048	748	.....	36,522	652,089	243,048
58 6,313,397	5,479,440	119,973	111,357	629,643	84,786	4,002,780	2,485	21,008	127	507,281	6,387,869	2,300,303
59 989,683	1,106,062	26,589	30,265	322,240	17,530	674,129	22,946	1,601	15,583	95,179	1,385,052	793,893
60 6,631,845	5,950,189	140,631	152,512	575,099	128,781	4,484,089	40,523	25,051	.....	409,603	6,542,844	1,929,974
61 2,686,218	1,157,012	51,643	39,902	527,845	43,240	383,605	8,937	4,022	.....	97,918	1,539,566	1,112,721
62 530,013	423,167	31,230	11,585	127,091	7,054	202,633	1,158	1,367	50	41,099	515,204	305,617

* 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.		Average number.	Wage earners.		Total.	16 and over.		Under 16.			
					Male.	Female.		Number.			Male.	Female.	Male.	Female.		
								Maximum month.	Minimum month.							
1 Fire extinguishers, chemical.....	4	25	2	2	5	1	15	Ja ¹ 16	Mh ¹ 13	15	15	5	5	20		
2 Fireworks.....	4	32	3	3	1	1	24	Je 33	Jy ¹ 4	33	8	15	5	7		
3 Flags, banners, regalia, society badges, and emblems.....	33	286	41	5	13	0	221	Ja 257	Ja 184	227	84	133	9	55		
4 Flour-mill and gristmill products.....	1,450	4,696	1,896	133	159	76	2,432	No 2,544	Jy 2,305	2,544	2,532	3	9	69,212		
5 Foundry and machine-shop products.....	1,695	100,505	1,389	3,176	7,748	1,371	86,821	De 100,444	Ja 79,132	101,530	99,412	1,086	894	138		
6 Fur goods.....	58	340	72	7	15	25	227	De 341	Ap 125	339	156	180	3	14		
7 Furnishing goods, men's.....	72	1,923	91	41	219	85	1,487	No 1,621	Ja 1,417	1,577	325	1,199	10	37		
8 Furniture and refrigerators.....	304	11,338	376	364	539	135	9,924	De 10,558	Ja 9,220	10,644	10,224	222	195	3		
9 Gas and electric fixtures and lamps and reflectors.....	75	1,876	73	117	160	44	1,482	No 1,780	Jy 1,337	1,788	1,492	233	58	5		
10 Gas, illuminating and heating.....	99	4,584	13	208	1,146	98	3,119	Jy 3,406	Fe 2,784	3,136	3,125	11		9,374		
11 Glass.....	112	24,924	34	424	543	213	23,710	De 26,711	Jy 16,242	27,857	24,571	1,485	1,516	285		
12 Gloves and mittens, leather.....	3	50	3		4	1	42	Ja ¹ 44	No 37	307	134	169	6	8		
13 Gold and silver, leaf and foil.....	6	318	7	3	5	6	297	No 308	Ja 289	307	134	169	6	8		
14 Gold and silver, reducing and refining, not from the ore.....	5	18	5	4	2		7	Ja ¹ 8	My 2	8	7		1	25		
15 Graphite and graphite refining.....	4	71	2	6	6		57	No 70	Ja 35	59	59			420		
16 Halcloth.....	9	406	10	11	31	14	340	Au 358	Ja 302	344	138	198	4	4		
17 Hand stamps and stencils and brands.....	35	256	33	15	32	13	163	De 182	Je 145	183	148	27	8	74		
18 Hats and caps, other than felt, straw, and wool.....	53	877	71	18	31	13	744	No 785	Je 700	774	424	342	7	1		
19 Hats, fur-felt.....	38	7,537	46	67	183	21	7,220	De 7,599	Fe 0,936	7,643	5,313	1,934	203	193		
20 Hats, straw.....	9	531	7	20	30	14	460	Ap 605	Au 286	533	137	392	1	3		
21 Hosiery and knit goods.....	464	40,248	599	651	583	299	39,205	No 39,911	Fe 30,957	40,326	7,766	28,045	1,124	3,391		
22 Ice, manufactured.....	170	2,086	116	199	120	45	1,606	Jy 2,197	Ja 1,044	1,492	1,489	1		21,797		
23 Ink, printing.....	8	240	6	18	50	7	165	Au 175	Mh ¹ 160	162	162			483		
24 Ink, writing.....	6	28	7	1	2	1	17	Se ¹ 19	No 15	19	8	5	6	21		
25 Iron and steel, blast furnaces.....	66	16,215	34	359	1,182	119	14,821	De 17,407	Mh 12,559	17,556	17,532		24	470,680		
26 Iron and steel, steel works and rolling mills.....	189	137,433	34	1,969	7,546	973	126,911	De 148,591	Mh 111,954	148,550	146,985	372	1,120	73		
27 Iron and steel pipe, wrought.....	11	4,143	5	87	164	14	3,873	Oc 4,651	Mh 3,209	4,601	4,591	10	22	12,472		
28 Jewelry.....	75	624	96	16	26	30	458	De 473	Je 441	604	385	52		180		
29 Kaolin and ground earths.....	16	670	7	27	17	7	612	Jy 651	Mh ¹ 543	641	641			2,310		
30 Lapidary work.....	3	10	3		1		6	Ja ² 6	Jy ² 6	6	5		1	1		
31 Lasts.....	4	82	6	2	1		73	De 76	Ja ¹ 71	76	75		1	91		
32 Lead, bar, pipe, and sheet.....	4	72	4	7	11	4	46	No 58	Mh 39	49	49			326		
33 Leather goods.....	156	3,124	210	85	239	66	2,624	Oc 2,655	Ja 2,292	2,571	1,763	585	72	151		
34 Leather, tanned, curried, and finished.....	163	14,970	151	343	388	80	14,008	De 14,890	My 13,587	14,973	14,079	682	151	61		
35 Lime.....	345	3,791	393	72	56	12	3,258	No 3,489	Fe 2,844	3,565	3,502		3	8,682		
36 Liquors, distilled.....	88	1,144	148	104	139	29	724	De 890	Se 535	968	743	225		7,578		
37 Liquors, malt.....	237	9,007	131	511	1,079	52	7,234	Jy 7,581	Fe 6,988	7,239	7,215	18	6	54,360		
38 Liquors, vinous.....	3	7	4		1		2	Je ¹ 6	Ja ¹ 0	6	6			15		
39 Lumber and timber products.....	2,667	32,073	3,473	777	722	228	26,873	De 28,690	Ja 24,194	32,915	32,429	123	356	7		
40 Marble and stone work.....	596	10,639	704	318	234	59	9,264	Jy 10,060	Ja 7,652	9,917	9,839		67	113,412		
41 Matches.....	4	180	5	6	11	3	155	De 209	Se 120	209	134	73		2		
42 Mattresses and spring beds.....	83	961	84	30	66	30	745	No 810	Ja 661	808	605	183	20	1,102		
43 Millinery and lace goods.....	105	4,697	141	63	158	100	4,235	Mh 4,744	Jy 3,825	4,294	3,369	53	265	841		
44 Mirrors.....	13	272	14	6	11	9	232	Oc 250	Fe 214	253	214	15	9	302		
45 Models and patterns, not including paper patterns.....	88	797	112	33	10	7	635	De 815	Jy 519	821	816	2	3	1,114		
46 Musical instruments and materials, not specified.....	19	87	18	6	4	5	54	Oc 61	Ja 34	57	55		2	43		
47 Musical instruments, pianos and organs and materials.....	30	1,331	21	53	59	16	1,182	De 1,264	Jy 1,080	1,262	1,206	16	40	1,260		
48 Oil, essential.....	5	97	3	2	2	1	89	Oc 164	Jy ¹ 20	40	40			102		
49 Optical goods.....	24	744	24	20	79	42	579	Jy 587	Au 570	580	293	227	20	40		
50 Paint and varnish.....	114	2,747	105	176	362	112	1,992	De 2,072	Ja 1,888	2,089	2,012	65	10	9,882		
51 Paper and wood pulp.....	62	7,196	32	167	250	91	6,056	No 6,916	Fe 6,481	6,842	6,064	744	17	17		
52 Paper goods, not elsewhere specified.....	34	1,700	32	51	184	76	1,357	Oc ¹ 1,438	Jo 1,287	1,416	673	670	30	43		
53 Patent medicines and compounds and druggists' preparations.....	367	4,299	334	209	075	320	2,761	No 2,983	Jy 2,527	2,902	1,275	1,560	31	36		
54 Petroleum, refining.....	41	3,423	30	123	323	41	2,900	Oc 3,381	Mh 2,535	3,310	3,278	13	19	35,212		
55 Phonographs and graphophones.....	3	96	1	4	3	7	81	Fe ¹ 203	Jy 7	113	113			72		
56 Photographic apparatus and materials.....	7	192	6	5	17	17	147	De 103	Ja 120	163	116	39	8	114		
57 Photo-engraving.....	31	682	33	40	88	32	489	Fe 498	Mh 479	493	471	17	5	197		
58 Pottery, terra-cotta, and fire-clay products.....	139	9,784	99	301	304	77	9,003	De 9,638	Ja 8,090	10,290	9,387	599	267	37		
59 Printing and publishing.....	2,461	36,783	2,557	1,781	5,132	2,617	24,696	De 25,938	Au 23,855	26,236	19,323	5,972	747	194		
60 Pumps, not including steam pumps.....	5	269	3	3	35	5	221	De 328	Ap 127	328	327			1,190		
61 Rubber goods, not elsewhere specified.....	13	1,407	3	68	106	25	1,205	My 1,314	Au 1,103	1,310	1,052	213	33	12		
62 Safes and vaults.....	7	777	1	41	38	2	695	Ap 721	Ja 673	723	721		2	1,163		
63 Sand and emery paper and cloth.....	3	305	3	6	12	2	282	Ja ¹ 370	Se 223	316	308	3	2	2,210		
64 Saws.....	15	2,087	18	19	161	13	1,876	No 1,882	Au 1,869	1,875	1,669	69	122	15		
65 Scales and balances.....	5	308	4	16	42	8	238	No 250	Ja ¹ 231	251	251			3,399		
66 Screws, machine.....	5	73	7	5	3		58	No 66	Ja ¹ 51	65	62		3	74		
67 Shipbuilding, including boat building.....	31	3,833	34	59	178	4	3,558	No 4,148	Fe 3,144	4,097	4,036	7	54	7,771		
68 Shoddy.....	20	518	32	14	15	7	450	De 462	Ja 432	466	353	113		2,170		
69 Show cases.....	5	55	4	4	3	1	43	Ap ¹ 44	Ja ¹ 42	43	43			76		
70 Signs and advertising novelties.....	26	621	28	22	63	21	487	De 643	Ja 418	647	435	196	14	608		

¹ Same number reported for one or more other months.

* Same number reported throughout the year.

STATISTICS OF MANUFACTURES.

757

STATE, BY INDUSTRIES: 1900—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 \$71,200	\$32,555	\$3,700	\$3,324	\$3,252	\$342	\$0,700	\$1,120	\$72		\$5,955	\$38,800	\$28,698	
2 37,185	31,237	3,160	300	5,217	390	17,829	720	22		3,599	39,684	21,465	
3 375,613	384,258	4,716	10,760	90,064	3,544	247,092	7,941	1,033	\$1,401	17,717	489,623	238,987	
4 21,276,534	40,696,279	209,187	162,873	1,187,505	278,706	37,891,422	119,408	85,734	21,913	739,531	44,782,558	6,012,420	
5 283,556,032	184,759,599	7,068,012	7,065,981	51,366,002	3,750,892	97,259,848	787,821	761,788	210,902	15,588,263	210,746,257	109,735,517	
6 1,086,035	854,254	11,616	25,438	159,569	4,748	539,006	52,187	3,082	1,141	57,377	1,217,221	673,377	
7 1,717,253	4,059,048	93,388	300,952	555,972	13,902	2,800,445	45,773	609	705	187,302	4,565,314	1,690,967	
8 18,542,143	16,789,969	681,194	550,463	4,829,154	190,309	8,848,398	149,636	45,840	19,838	1,475,237	18,951,784	9,013,077	
9 2,863,064	2,702,592	189,630	143,287	784,623	34,418	1,204,155	65,047	5,975	1,676	353,731	2,961,770	1,723,197	
10 61,856,506	9,188,766	204,796	974,689	1,500,860	2,997,543	1,101,051	1,287,642	62,836	3,276	996,083	15,839,612	11,741,018	
11 58,632,212	31,102,894	1,029,465	700,491	13,436,405	2,898,532	9,735,381	19,833	144,455	11,287	3,127,065	32,817,936	20,184,023	
12 28,964	48,004	2,536	11,744	104,551	210	32,700	330	58		1,320	54,041	21,131	
13 332,741	387,854	2,700	9,020	125,594	2,163	241,491	756	1,994		4,136	418,421	174,767	
14 39,558	215,609	8,392	1,560	6,274	657	189,647	3,696	118		5,265	224,391	34,587	
15 239,914	208,428	4,791	4,500	31,602	2,243	153,318	325	341		6,308	221,854	61,293	
16 1,385,689	1,354,740	20,318	31,618	172,111	11,285	1,031,830	26,797	604	3,500	50,677	1,444,695	401,580	
17 298,896	271,727	26,654	21,966	90,686	3,847	101,401	372	372	515	13,459	329,805	224,617	
18 652,304	953,890	37,481	32,690	273,201	8,115	535,276	21,860	833	10	44,524	1,090,823	553,432	
19 14,438,611	9,877,906	204,902	217,814	3,724,099	150,530	4,861,840	18,233	30,492	15,753	653,333	13,022,617	8,009,847	
20 498,430	782,199	73,675	42,893	42,893	5,705	397,295	21,003	495		27,154	872,135	469,135	
21 38,989,088	43,892,123	992,064	665,889	11,760,386	421,700	26,796,251	276,882	72,816	687,872	2,228,263	49,657,506	22,439,555	
22 14,404,140	3,362,417	223,032	115,075	1,022,959	743,951	481,309	41,117	87,930		647,044	4,822,884	3,597,624	
23 742,447	993,366	49,812	44,550	104,551	14,925	607,657	6,752	968	18,023	146,098	1,050,113	427,531	
24 403,047	43,860	1,300	2,336	6,882	443	28,042	1,170	390		3,287	55,980	27,495	
25 194,708,463	159,531,392	990,977	1,408,840	9,456,714	40,480,664	101,593,964	271,970	568,769	9,445	3,750,649	168,878,413	26,504,385	
26 522,897,623	451,828,919	5,355,442	8,038,306	85,113,237	23,615,586	305,397,835	243,740	1,566,867	19,558	22,478,342	500,343,995	171,330,574	
27 15,325,007	16,924,921	199,686	137,475	2,176,686	460,544	13,561,322	1,200	44,156		343,852	18,291,167	4,269,301	
28 911,591	1,039,767	20,740	32,931	291,769	11,012	585,819	34,295	800	6,880	55,461	1,274,875	678,044	
29 2,512,897	633,081	43,066	79	208,494	55,478	231,779	4,105	5,043	350	65,740	759,113	471,856	
30 5,900	10,513		120	5,700	176	2,480	875	7		555	14,000	11,344	
31 104,228	99,215	3,120	650	42,310	3,063	24,754	1,200	641			114,254	86,437	
32 682,546	787,563	14,939	11,955	30,859	6,130	700,050	290	3,873		19,820	845,168	138,970	
33 4,527,481	5,075,239	183,723	316,221	1,136,737	33,888	3,119,349	86,017	8,052	7,823	212,529	5,829,548	2,670,311	
34 80,988,561	78,594,120	927,927	415,640	6,801,370	726,432	58,386,692	157,324	193,283	23,630	5,960,422	77,928,321	18,813,197	
35 6,930,395	2,598,048	91,641	45,348	1,259,171	609,250	428,490	24,887	18,653	19,879	95,729	3,342,048	2,304,308	
36 16,216,804	13,395,847	176,532	182,906	410,569	134,129	2,978,114	57,668	9,007,973	12,538	435,328	14,366,527	11,254,284	
37 94,134,562	37,734,004	1,949,657	1,311,355	5,452,794	1,016,793	11,569,304	203,172	8,097,683	63,754	8,045,492	47,712,570	35,102,473	
38 86,204	18,365		935	733	14,672					1,324	23,055	8,010	
39 54,638,401	48,102,628	1,085,846	671,864	13,557,761	329,610	26,984,626	146,313	257,572	2,422,055	2,046,981	57,453,583	30,139,347	
40 13,963,755	9,943,502	392,568	192,771	4,859,671	296,201	3,423,553	75,443	44,090	67,507	591,098	11,569,603	7,849,849	
41 343,255	303,624	4,010	38,837	39,966	3,122	179,463		743		37,483	323,337	140,752	
42 1,655,480	1,994,583	58,465	69,754	360,639	17,205	1,316,042	40,758	7,260		134,460	2,223,197	889,950	
43 3,562,020	5,812,097	103,611	184,072	1,327,299	30,668	3,723,447	110,621	2,528	34,083	296,378	6,769,523	3,015,118	
44 501,422	550,374	13,840	15,891	104,309	5,535	366,632	5,015	2,173	2,000	35,479	636,094	208,927	
45 1,679,535	1,929,481	55,348	10,183	410,937	27,728	1,329,054	22,766	3,130	3,075	67,210	2,085,220	728,448	
46 201,057	92,861	8,616	3,689	32,404	1,922	24,086	5,742	394	2,790	13,158	115,118	89,110	
47 3,187,965	2,117,165	104,161	61,249	505,343	21,104	1,227,241	17,827	3,293	1,151	175,796	2,381,849	1,133,504	
48 46,006	85,919	2,356	1,220	28,002	674	45,579	15	821		7,252	111,065	64,812	
49 926,029	908,323	47,184	69,876	218,898	8,578	452,791	23,307	3,212	250	84,232	1,062,905	601,536	
50 14,833,702	12,598,754	416,053	531,026	1,101,960	252,923	8,948,071	59,740	43,359	2,060	1,243,554	14,019,744	4,818,750	
51 27,746,888	17,494,422	538,035	282,227	3,303,034	1,544,116	9,854,195	2,485	59,591	130	1,910,609	19,872,717	8,474,406	
52 3,304,119	3,476,025	145,406	174,449	538,365	25,817	2,199,120	57,513	6,627	8,434	320,294	3,718,956	1,494,019	
53 12,409,187	10,759,254	486,022	855,222	1,144,982	66,050	5,243,530	113,168	25,407	2,783	2,821,150	12,656,086	7,346,506	
54 38,989,633	51,476,170	418,130	350,226	1,861,405	1,803,713	45,636,603	12,323	55,520	5,767	1,332,489	53,098,199	5,647,883	
55 180,005	133,873	7,560	4,051	46,003	2,610	3,693	3,395	5		36,699	134,659	99,358	
56 456,259	624,143	21,622	24,969	104,137	7,878	408,245	14,390	498		42,404	672,908	256,785	
57 660,496	1,003,032	98,475	76,329	446,387	13,211	271,415	30,036	498		13,668	1,132,189	601,563	
58 27,225,268	10,811,423	535,732	320,614	4,357,336	1,149,492	2,960,326	39,406	84,916	15,897	1,348,164	13,072,106	8,902,738	
59 71,452,879	58,379,844	3,658,525	5,177,830	14,335,047	657,657	22,095,092	1,161,580	172,017	2,280,491	8,841,596	70,584,179	47,831,430	
60 861,789	365,817	10,650	26,265	136,078	17,960	155,399	192	719		18,584	398,021	224,692	
61 5,426,636	4,223,380	141,266	157,459	565,995	71,800	3,169,932	2,230	8,203		506,495	4,686,330	1,444,598	
62 1,836,023	1,244,208	53,640	42,780	391,292	23,907	618,682	840	5,594	7,329	100,234	1,338,305	695,716	
63 2,022,890	1,736,361	20,500	21,687	175,862	27,466	1,261,512	3,500	2,944		225,890	2,136,505	847,827	
64 5,961,421	3,025,015	66,060	138,844	1,153,201	70,735	1,934,010	3,318	4,761		248,126	3,793,806	2,388,161	
65 1,081,125	678,504	35,200	59,344	136,596	3,942	371,122	288	2,764		66,308	732,135	357,071	
66 141,100	73,570	8,615	3,400	30,264	2,120	22,477	3,579	166		2,955	84,788	60,191	
67 15,203,209	6,001,185	231,688	183,114	2,120,424	108,622	2,600,832	50,520	32,594	24,150	648,141	6,178,145	3,468,591	
68 1,627,098	1,770,653	26,620	20,413	185,740	30,633	1,432,585	6,868	6,086		2,912	2,051,118	587,900	
69 80,100	90,960	5,120	3,768	27,794	3,219	44,159	2,869	151		3,880	90,555	42,977	

SUPPLEMENT FOR PENNSYLVANIA.

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, superis. 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 Silk and silk goods, including throwsters.	226	38,178	143	498	817	251	36,469	Ap	37,031	Ja	35,775	37,290	9,772	22,378	1,578	3,562	41,962
2 Silverware and plated ware.	9	321	6	16	32	7	260	No	290	Jy	215	332	287	32	10	3	187
3 Slaughtering and meat packing.	180	3,957	198	141	484	84	3,050	De	3,184	Au	2,940	3,183	3,154	22	7	.....	12,139
4 Smelting and refining, not from the ore.	24	278	17	22	26	7	206	De	236	Fe	171	239	238	1	.....	.....	566
5 Soap.	59	1,746	74	27	252	190	1,197	Se	1,226	Ja	1,172	1,174	821	312	27	14	2,568
6 Steam packing.	31	2,231	18	88	325	123	1,677	De	2,018	Je	1,544	2,025	1,854	122	39	10	5,817
7 Stereotyping and electrotyping.	21	414	18	28	25	4	339	My	349	Ja	330	339	320	6	13	.....	339
8 Stoves and furnaces, including gas and oil stoves.	74	4,721	42	155	260	66	4,198	No	4,488	Ja	3,385	4,535	4,463	29	42	1	4,675
9 Sulphuric, nitric, and mixed acids.	6	172	.....	11	22	7	132	Mh	149	Au	121	155	151	1	3	.....	286
10 Tin plate and terneplate.	17	2,548	3	43	109	47	2,346	No	2,795	Mh	1,963	2,751	2,448	278	25	.....	1,565
11 Tobacco manufactures.	2,432	37,580	2,099	471	1,025	197	33,188	De	35,099	Ap	32,097	35,552	16,006	18,615	174	757	2,638
12 Type founding and printing materials.	8	402	6	17	61	25	293	Ja	310	Au	275	298	214	59	16	9	273
13 Typewriters and supplies.	8	872	5	15	252	45	555	De	610	Ja	491	610	596	14	.....	.....	264
14 Umbrellas and canes.	45	2,551	44	45	115	32	2,315	No	2,570	Jy	2,078	2,413	1,070	1,190	88	65	1,570
15 Wall paper.	11	1,196	.....	35	94	11	1,056	De	1,239	Au	777	1,324	1,016	169	99	40	1,371
16 Wall plaster.	23	306	15	28	22	9	232	Ap	303	Ja	194	232	230	2	.....	.....	1,413
17 Whips.	4	135	44	7	22	4	58	De	69	Ja	43	69	51	18	.....	.....	105
18 Wood distillation, not including turpentine and resin.	50	1,093	36	85	28	11	933	Ja	1,058	Au	837	1,052	1,052	.....	.....	.....	1,749
19 Woolen, worsted, and felt goods, and wool hats.	217	28,692	245	422	475	141	27,409	No	28,383	Ja	25,796	28,226	12,494	13,053	1,187	1,492	50,405
20 All other industries ¹ .	1,953	50,979	2,100	1,730	3,198	1,015	42,936	.....	.....	.....	.....	.....	.....	.....	.....	.....	101,898

¹ All other industries embrace—

Artists' materials.	7	Cordials and sirups.	6	Hair work.	11
Awnings, tents, and sails.	36	Drug grinding.	2	Hammocks.	3
Axie grease.	3	Dyestuffs and extracts.	14	Hat and cap materials.	6
Bags, other than paper.	4	Engravers' materials.	1	Hones and whetstones.	1
Bone, carbon, and lamp black.	5	Engraving and diesinking.	27	Horseshoes, not made in steel works or rolling mills.	3
Boots and shoes, rubber.	1	Engraving, wood.	9	House-furnishing goods, not elsewhere specified.	24
Calcium lights.	1	Flavoring extracts.	37	Instruments, professional and scientific.	39
Card cutting and designing.	17	Food preparations.	128	Iron and steel, bolts, nuts, washers, and rivets, not made in steel works or rolling mills.	22
Carriages and sleds, children's.	5	Foundry supplies.	10	Iron and steel, doors and shutters.	2
Cars, street-railroad, not including operations of railroad companies.	1	Fuel, manufactured.	1	Iron and steel forgings.	38
Cash registers and calculating machines.	3	Furs, dressed.	8	Iron and steel, nails and spikes, cut and wrought, including wire nails, not made in steel works or rolling mills.	7
Charcoal.	2	Galvanizing.	6	Jewelry and instrument cases.	11
China decorating.	3	Glass, cutting, staining, and ornamenting.	100	Labels and tags.	16
Clothing, horse.	12	Glucose and starch.	2	Locomotives, not made by railroad companies.	7
Clothing, men's, buttonholes.	10	Glue.	51		
Coffee and spice, roasting and grinding.	84	Grease and tallow.	1		
		Grindstones.	1		

STATISTICS OF MANUFACTURES.

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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 \$49,679,001	\$55,614,244	\$1,173,305	\$958,637	\$11,442,878	\$495,850	\$34,669,721	\$178,854	\$94,043	\$3,851,881	\$2,749,075	\$62,061,302	\$26,895,731
2 781,251	485,130	34,700	20,575	190,330	4,242	198,200	8,430	525	.....	22,128	601,831	399,389
3 13,504,379	49,153,605	348,881	513,279	1,986,965	239,663	44,605,384	112,072	63,602	29,005	1,254,154	51,850,936	7,005,889
4 1,005,387	3,325,573	64,732	24,576	143,182	37,534	2,940,698	3,497	3,363	5,000	102,991	3,577,433	599,201
5 5,427,998	8,397,048	55,988	287,566	555,829	64,977	5,881,826	13,858	14,260	.....	1,522,738	9,124,350	3,177,553
6 7,021,710	5,006,308	218,044	253,025	814,272	149,465	2,831,102	20,899	12,087	10,069	697,375	4,987,171	2,006,604
7 411,367	503,618	48,720	19,715	231,666	14,378	131,450	21,175	156	934	35,424	644,686	498,858
8 10,043,111	6,348,431	310,277	324,325	2,464,775	115,758	2,355,890	63,333	32,007	37,361	644,735	7,408,933	4,937,315
9 1,142,636	506,459	17,000	27,848	87,240	29,190	298,797	.....	5,353	.....	40,065	624,473	296,480
10 5,520,060	24,844,283	110,660	164,838	1,338,637	113,270	22,785,082	1,900	24,366	.....	305,630	25,234,066	2,335,714
11 27,603,854	44,054,733	730,522	1,054,946	11,619,512	119,516	20,593,907	364,344	6,079,825	140,089	3,351,171	50,161,387	29,447,954
12 1,021,826	573,696	33,840	58,210	159,308	10,887	194,460	19,006	1,677	.....	96,202	606,351	400,998
13 1,151,930	1,076,162	42,060	280,782	269,087	4,107	185,067	3,655	3,063	.....	282,431	1,016,543	827,369
14 5,119,023	4,678,745	93,680	231,028	906,020	28,439	3,119,614	39,180	5,903	38,731	222,150	5,059,840	1,911,793
15 3,511,107	3,402,482	114,921	133,816	519,670	45,388	2,263,305	38,502	4,784	.....	282,101	3,695,211	1,386,523
16 1,004,114	660,766	46,935	23,247	111,054	31,964	370,118	3,050	2,685	1,620	70,693	725,494	323,412
17 267,394	123,604	7,900	21,202	14,929	1,641	66,832	612	206	.....	10,282	161,647	93,174
18 5,111,070	2,490,091	112,517	20,515	521,043	1,463,326	220,623	790	22,948	2,200	125,529	2,960,162	1,276,213
19 75,170,431	71,177,842	1,091,736	654,062	10,947,225	789,043	53,845,042	255,773	99,864	802,120	2,692,977	77,446,996	22,812,911
20 158,033,658	154,832,334	3,696,503	3,078,170	22,317,217	3,033,791	110,508,867	650,590	373,469	233,581	10,340,146	171,703,451	58,160,793

1 All other industries embrace—Continued.

Looking-glass and picture frames.....	55	Pens, steel.....	1	Tin-foil.....	2
Malt.....	3	Pipes, tobacco.....	4	Toys and games.....	23
Mats and matting.....	1	Pulp, from fiber other than wood.....	2	Upholstering materials.....	23
Mineral and soda waters.....	495	Roofing materials.....	17	Vault lights and ventilators.....	7
Moving pictures.....	2	Salt.....	1	Vinegar and cider.....	102
Mudclags and paste.....	17	Screws, wood.....	1	Washing machines and clothes wringers.....	10
Needles, pins, and hooks and eyes.....	9	Sewing machines, cases, and attachments.....	2	Waste.....	23
Oil, castor.....	1	Smelting and refining, lead.....	1	Wheelbarrows.....	4
Oil, linseed.....	1	Smelting and refining, zinc.....	2	Window shades and fixtures.....	15
Oil, not elsewhere specified.....	37	Soda-water apparatus.....	4	Wire.....	8
Oilcloth and linoleum.....	3	Sporting and athletic goods.....	15	Wirework, including wire rope and cable.....	64
Ordnance and accessories.....	1	Springs, steel, car and carriage.....	13	Wood carpet.....	2
Paving materials.....	5	Stationery goods, not elsewhere specified.....	12	Wood preserving.....	1
Peanuts, grading, roasting, cleaning, and shelling..	5	Statuary and art goods.....	18	Wood, turned and carved.....	94
Pencils, lead.....	2	Sugar, refining, not including beet sugar.....	2	Wool pulling.....	9
Pens, fountain, stylographic, and gold.....	2	Surgical appliances and artificial limbs.....	46	Wool scouring.....	2

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

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.....	274	12,628	314	240	500	93	11,481	6,520	4,386	575	11,837	6,731	4,520	287	299	19,101	
2 Boots and shoes, including cut stock and findings.....	9	770	10	19	14	3	724	449	219	56	765	474	231	39	21	365	
3 Bread and other bakery products.....	32	183	31	3	1	2	146	132	11	3	151	137	11	2	1	82	
4 Brick and tile.....	6	158	11	6			141	140		1	145	144		1		335	
5 Brushes.....	4	21	5				16	15		1	15	14		1		5	
6 Carriages and wagons and materials.....	4	38	8				30	30			28	28				33	
7 Clothing, men's, including shirts.....	5	183	8		5	1	169	67	92	10	173	69	94	2	8	14	
8 Copper, tin, and sheet-iron products.....	3	53	6		1		46	46			51	51				23	
9 Foundry and machine-shop products.....	23	1,011	30	28	74	28	851	810	15	17	895	861	16	18		1,286	
10 Furniture and refrigerators.....	7	593	10	25	28	1	529	506	3	20	564	540	3	21		646	
11 Hosiery and knit goods.....	8	614	7	14	12	9	572	67	479	26	668	78	559	2	29	422	
12 Leather goods.....	3	23	4		1		18	18			18	18				1	
13 Liquors, malt.....	4	129	8	6	11	1	103	102	1		102	101	1			501	
14 Lumber and timber products.....	10	171	20	5	7	2	137	137			145	145				622	
15 Marble and stone work.....	4	23	5				17	17			15	15				18	
16 Printing and publishing.....	28	255	31	14	18	2	190	161	18	11	192	163	18	9	2	147	
17 Silk and silk goods, including throwsters.....	15	3,937	9	38	102	10	3,778	1,330	2,169	279	3,665	1,289	2,103	114	150	2,808	
18 Tobacco manufactures.....	47	1,190	47	12	18	9	1,104	130	972	2	1,202	142	1,068		2	152	
19 All other industries ²	62	3,276	64	70	209	23	2,910	2,354	407	149	3,043	2,402	426	78	77	11,633	

¹ Includes 1 establishment engaged in the manufacture of brooms.
² All other industries embrace: Artificial stone, 1; automobiles, including bodies and parts, 1; baskets, and rattan and willow ware, 1; blacking and cleansing and polishing preparations, 1; boxes, cigar, 2; boxes, fancy and paper, 1; brass and bronze products, 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; cement, 1; chemicals, 2; clothing, women's, 1; coffins, burial cases, and undertakers' goods, 1; confectionery, 3; cooperage and wooden goods, not elsewhere specified, 2; cordage and twine and jute and linen goods, 1; dyeing and finishing textiles, 4;

ALTOONA.

1 All industries.....	44	9,100	41	255	345	50	8,409	7,797	478	134	9,281	8,605	532	69	75	9,168
2 Bread and other bakery products.....	11	64	12	2		5	45	41	3	1	48	44	3	1		55
3 Liquors, malt.....	3	118	5	6	9	2	96	96			94	94				730
4 Lumber and timber products.....	3	104	4	8	1	3	88	88			94	94				186
5 Printing and publishing.....	10	209	7	12	24	12	154	124	25	5	154	124	25	5		177
6 All other industries ¹	17	8,605	13	227	311	28	8,026	7,448	450	128	8,931	8,289	504	63	75	8,010

¹ All other industries embrace: Artificial stone, 1; cars and general shop construction and repairs by steam-railroad companies, 2; clothing, men's, including shirts, 1; coke, 1; foundry and machine-shop products, 1; gas, illuminating and heating, 2; ice, manufactured, 2; leather goods, 1; mattresses and spring beds, 1; mineral and soda waters, 2; patent medicines and compounds and druggists' preparations, 1; silk and silk goods, including throwsters, 1; tobacco manufactures, 1.

ERIE.

1 All industries.....	391	11,142	364	338	471	173	9,796	8,592	933	271	10,594	9,288	1,012	193	101	22,938
2 Brass and bronze products.....	4	55	4	4		2	45	45			50	50				80
3 Bread and other bakery products.....	48	210	48	2	2	8	160	128	18	4	157	134	10	2	2	117
4 Carriages and wagons and materials.....	4	25	7		1	1	26	26			26	26				41
5 Confectionery.....	5	52	8	4	2	1	37	20	17		37	20	17			34
6 Cooperage and wooden goods, not elsewhere specified.....	5	51	4	3	1	2	41	39	2		39	37	2			80
7 Copper, tin, and sheet-iron products.....	10	143	10	5	1	3	124	124			129	129				163
8 Cutlery and tools, not elsewhere specified.....	4	137	2	7	10	5	113	110		3	142	138		3	1	108
9 Flour-mill and gristmill products.....	4	54	2	9	10	1	32	32			35	35				640
10 Foundry and machine-shop products.....	69	4,982	40	136	188	40	4,572	4,380	101	91	5,002	4,797	107	73	25	8,626
11 Liquors, malt.....	3	153		11	19		123	123			120	120				373
12 Lumber and timber products.....	16	368	12	18	20	6	312	310	2		299	297	2			896
13 Marble and stone work.....	6	22	9				13	13			13	13				24
14 Musical instruments, pianos and organs and materials.....	4	123	2	14	3	4	100	95	3	2	103	98	3	2		100
15 Patent medicines and compounds and druggists' preparations.....	27	56	28	3	2	1	22	7	14	1	23	7	15	1		2
16 Printing and publishing.....	23	518	20	24	35	30	409	268	139	2	437	286	149	2		610
17 Slaughtering and meat packing.....	6	75	10	3	6	2	54	54			53	53				150
18 Stoves and furnaces, including gas and oil stoves.....	8	575	3	11	21	9	531	517	1	13	550	536	1	13		468
19 Tobacco manufactures.....	23	95	26		1		68	66	1	1	70	68	1	1		152
20 All other industries ¹	119	3,438	129	84	149	52	3,024	2,235	685	154	3,309	2,444	696	96	73	9,467

¹ All other industries embrace: Agricultural implements, 1; artificial stone, 9; automobiles, including bodies and parts, 1; awnings, tents, and sails, 2; babbit metal and solder, 3; bicycles, motorcycles, and parts, 2; boxes, cigar, 2; boxes, fancy and paper, 1; brooms, 2; brushes, 1; buttons, 2; canning and preserving, 5; carpets, rag, 2; carriages and sleds, children's, 1; cars and general shop construction and repairs by steam-railroad companies, 1; cars and general shop construction and repairs by street-railroad companies, 1; cars, steam-railroad, not including operations of railroad companies, 1; clothing, men's, including shirts, 2; coffee and spice, roasting and grinding, 2; coffins, burial cases, and undertakers' goods, 1; cork, cutting, 1; dairymen's, poulterers', and apiarists' supplies, 1; dentists' materials, 1; dyeing and finishing textiles, 2; fancy articles, not elsewhere specified, 1; flags, banners, regalia, society badges, and emblems, 1; food preparations, 5; fur goods, 2; furnishing goods, men's, 2; furniture and refrigerators, 2; gas and electric fixtures and lamps and reflectors, 1; gas, illuminating and heating, 1; glass, cutting, staining, and ornamenting, 1; grease and tallow, 1;

STATISTICS OF MANUFACTURES.

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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.

ALLENTOWN.

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 \$21,568,972	\$23,850,797	\$414,413	\$450,978	\$5,061,470	\$420,651	\$15,160,505	\$108,694	\$319,503	\$595,025	\$1,312,558	\$26,263,327	\$10,682,171
2 669,352	1,146,658	33,186	6,740	297,275	4,027	758,449	4,985	1,361	-----	40,659	1,302,072	539,596
3 294,957	376,491	3,000	1,240	76,953	8,338	267,163	5,812	1,596	-----	12,389	475,086	199,585
4 260,428	123,777	6,030	-----	55,748	29,397	7,441	6,673	622	-----	17,866	174,977	138,139
5 10,562	15,190	-----	-----	4,987	113	9,387	267	51	-----	385	20,925	11,425
6 99,347	45,226	-----	-----	17,917	941	25,553	-----	461	-----	354	61,495	35,001
7 275,419	207,000	-----	6,104	64,464	1,883	128,252	930	747	-----	4,530	251,661	121,526
8 53,403	67,497	-----	598	25,257	512	39,007	1,134	198	20	771	83,472	43,953
9 1,770,674	1,460,525	45,106	65,810	899,898	22,882	746,529	13,746	4,194	-----	168,360	1,631,805	862,394
10 712,184	650,891	45,118	32,501	252,039	7,374	198,112	5,900	2,537	-----	107,280	732,615	527,129
11 677,665	677,305	10,022	13,306	147,054	6,426	450,917	3,274	1,174	12,858	26,274	716,796	250,453
12 51,040	30,434	-----	572	10,011	269	17,769	413	490	-----	910	44,157	26,119
13 1,631,611	493,920	10,556	12,748	63,271	15,962	177,465	-----	103,124	-----	104,794	657,416	463,989
14 412,920	261,532	4,383	4,112	80,026	5,892	151,174	728	1,376	160	13,681	318,881	161,815
15 22,480	23,672	-----	466	9,587	614	12,485	202	44	-----	274	32,200	19,101
16 495,873	249,721	14,368	11,769	92,889	5,081	96,156	3,466	2,111	4,677	19,174	338,519	237,282
17 6,494,761	6,900,886	76,562	94,193	1,483,500	34,732	4,263,798	36,871	8,336	576,418	326,476	7,455,528	3,156,998
18 439,259	1,350,920	21,914	12,442	438,876	3,797	677,961	12,230	173,318	-----	19,382	1,445,652	763,894
19 7,280,977	9,764,182	132,168	197,281	1,541,718	272,411	7,132,887	10,063	17,763	892	448,999	10,520,070	3,114,772

flags, banners, regalia, society badges, and emblems, 1; cutlery and tools, not elsewhere specified, 1; food preparations, 2; fur goods, 2; gas and electric fixtures and lamps and reflectors, 2; gas, illuminating and heating, 1; glass, 1; glass, cutting, staining, and ornamenting, 1; hand stamps and stencils and brands, 1; hats and caps, other than felt, straw, and wool, 1; ice, manufactured, 1; instruments, professional and scientific, 1; iron and steel, blast furnaces, 1; iron and steel, steel works and rolling mills, 1; leather, tanned, curried, and finished, 2; mattresses and spring beds, 2; mineral and soda waters, 1; patent medicines and compounds and druggists' preparations, 8; photo-engraving, 2; pottery, terra-cotta, and fire-clay products, 1; slaughtering and meat packing, 1; umbrellas and canes, 1; wood, turned and carved, 1.

ALTOONA.

1 \$16,094,094	\$16,238,833	\$333,096	\$316,255	\$5,750,228	\$209,922	\$8,924,259	\$7,227.	\$121,053	\$1,840	\$574,953	\$15,762,738	\$7,628,557
2 137,566	99,518	1,560	982	21,713	2,555	65,022	1,761	504	1,230	4,191	122,174	54,597
3 1,061,002	428,645	13,200	12,594	41,550	12,538	225,229	-----	75,328	410	47,796	526,456	285,689
4 267,251	177,924	11,580	2,170	44,231	1,111	111,631	-----	1,833	-----	5,368	249,502	136,820
5 405,765	217,132	10,000	23,710	87,213	5,413	75,430	2,874	938	200	11,349	259,855	178,837
6 14,222,510	15,315,614	296,750	276,799	5,555,521	188,300	8,446,947	2,592	42,450	-----	506,249	15,604,861	6,969,614

ERIE.

1 \$30,619,869	\$20,436,226	\$767,201	\$521,448	\$5,101,041	\$796,457	\$11,267,070	\$60,634	\$228,108	\$29,091	\$1,665,176	\$24,225,633	\$12,162,106
2 116,736	108,753	5,780	940	25,295	2,914	68,832	400	392	-----	4,200	127,246	55,500
3 264,161	490,491	2,236	3,116	91,440	9,279	354,622	4,936	1,397	-----	23,465	561,229	197,328
4 64,228	39,373	-----	1,400	14,553	518	20,220	-----	294	-----	2,388	51,062	30,264
5 41,848	153,762	6,120	3,016	16,373	2,354	114,138	6,940	170	-----	4,651	170,620	54,123
6 90,175	100,285	4,360	1,028	22,897	1,083	62,116	1,320	101	-----	6,480	105,265	42,060
7 216,262	196,051	0,336	2,080	64,878	2,568	108,133	1,496	387	-----	10,173	216,362	105,661
8 493,415	184,741	13,240	11,201	67,229	1,789	63,266	2,968	468	-----	24,580	197,211	132,156
9 341,411	817,405	17,176	7,143	17,953	3,902	759,958	150	1,428	-----	9,695	842,745	73,885
10 13,517,209	7,233,078	321,140	194,923	2,493,494	203,713	3,312,167	6,984	40,065	-----	654,592	8,714,772	5,198,892
11 2,448,727	678,604	24,657	21,443	89,523	15,946	190,081	-----	141,556	-----	189,398	925,931	713,904
12 1,179,383	886,156	33,940	20,521	175,452	5,968	603,885	4,370	3,298	2,560	36,162	963,582	353,729
13 51,050	69,085	-----	11,565	185	185	55,163	278	94	-----	1,795	98,660	43,307
14 257,908	208,864	22,788	3,232	64,436	2,027	101,489	600	314	493	13,485	237,329	133,813
15 94,611	85,951	4,480	860	7,901	720	55,934	3,671	87	502	11,796	131,714	75,060
16 1,247,473	618,027	54,566	35,049	181,741	9,563	240,742	5,644	1,756	-----	89,026	829,470	579,165
17 207,385	793,740	6,000	4,280	31,311	31,311	736,737	800	1,855	-----	9,986	957,115	217,607
18 1,012,932	695,577	26,360	36,863	324,022	7,237	241,358	1,615	3,728	-----	54,344	843,453	594,808
19 89,919	128,717	-----	1,202	41,394	467	62,618	1,370	13,778	-----	7,888	156,966	93,821
20 8,885,036	6,947,566	218,082	172,251	1,853,584	523,403	4,109,606	17,092	16,940	25,536	511,072	8,095,021	3,462,012

hand stamps and stencils and brands, 2; hats, fur-felt, 1; house-furnishing goods, not elsewhere specified, 1; ice, manufactured, 2; iron and steel, blast furnaces, 1; iron and steel forgings, 1; jewelry, 1; leather goods, 2; leather, tanned, curried, and finished, 1; locomotives, not made by railroad companies, 1; looking-glass and picture frames, 2; mineral and soda waters, 4; models and patterns, not including paper patterns; 5; oil, not elsewhere specified, 6; optical goods, 4; paint and varnish, 1; paper and wood pulp, 1; photo-engraving, 1; roofing materials, 1; rubber goods, not elsewhere specified, 2; shipbuilding, including boat building, 3; show cases, 1; signs and advertising novelties, 2; silk and silk goods, including throwsters, 1; sporting and athletic goods, 1; stereotyping and electrotyping, 1; wall plaster, 3; washing machines and clothes wringers, 1; wirework, including wire rope and cable, 3.

SUPPLEMENT FOR PENNSYLVANIA.

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.

HARRISBURG.

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 (average number).			Total.	16 and over.		Under 16.				
					Male.	Female.	Total.	Male.	Female.		Under 16.	Male.	Female.	Male.	Female.		
																Male.		Female.	Male.	Female.
1 All industries.....	199	11,024	190	242	584	265	9,743	7,088	2,531	124	10,601	7,884	2,567	57	73	22,355	
2 Bread and other bakery products.....	39	237	40	5	2	5	185	175	9	1	193	183	9	1	.....	143
3 Carriages and wagons and materials.....	7	61	7	1	1	2	50	50	.....	.....	53	53	.....	.....	.....	57
4 Foundry and machine-shop products.....	8	449	10	17	17	11	394	382	9	3	426	413	10	3	.....	629
5 Iron and steel, steel works and rolling mills.	5	2,214	.....	39	.....	42	2,136	2,127	.....	9	2,584	2,573	.....	11	.....	15,937
6 Liquors, malt.....	3	67	2	5	3	.....	57	57	.....	.....	57	57	.....	.....	.....	347
7 Lumber and timber products.....	3	132	4	8	2	3	115	115	.....	.....	115	115	.....	.....	.....	325
8 Patent medicines and compounds and druggists' preparations.....	11	37	11	2	9	1	14	8	6	.....	15	9	6	.....	.....	2
9 Printing and publishing.....	30	658	28	34	76	37	483	379	98	6	568	446	115	5	2	480	
10 Tobacco manufactures.....	20	1,630	19	4	23	4	1,580	210	1,326	44	1,584	204	1,287	6	37	73	
11 All other industries ¹	73	5,539	69	130	451	160	4,729	3,585	1,083	61	5,056	3,831	1,160	31	34	4,472	

¹ All other industries embrace: Artificial stone, 1; awnings, tents, and sails, 2; bags, paper, 1; boots and shoes, including cut stock and findings, 4; boxes, cigar, 1; boxes, fancy and paper, 1; brick and tile, 1; brooms, 1; butter, cheese, and condensed milk, 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, 1; clothing, women's, 4; coffee and spice, roasting and grinding, 1; coffins, burial cases, and undertakers' goods, 1; confectionery, 1; copper, tin, and sheet-iron products, 3; electroplating, 1; fancy articles, not elsewhere specified, 1; fertilizers, 1; flour-mill and gristmill products, 1; food preparations, 5; furnishing goods, men's, 1; furniture and refrigerators, 1; gas, illuminating and heating, 2; glass, cutting, staining,

JOHNSTOWN.

1 All industries.....	97	11,671	121	279	594	103	10,574	10,284	92	198	11,335	11,019	102	214	.....	119,598
2 Bread and other bakery products.....	11	83	10	5	.....	7	61	53	6	2	64	56	6	2	.....	84
3 Copper, tin, and sheet-iron products.....	5	77	5	3	3	2	64	59	4	1	64	59	4	1	.....	90
4 Liquors, malt.....	4	176	5	10	18	4	139	135	4	.....	143	139	4	.....	1,020	
5 Lumber and timber products.....	8	85	9	10	7	.....	59	59	.....	.....	59	59	.....	.....	.....	510
6 Printing and publishing.....	11	181	12	9	20	8	132	102	27	3	139	107	29	3	.....	121
7 All other industries ¹	53	11,069	80	242	546	82	10,119	9,876	51	192	10,866	10,599	59	208	.....	117,683

¹ All other industries embrace: Artificial stone, 1; awnings, tents, and sails, 1; brass and bronze products, 1; brick and tile, 2; brooms, 1; carriages and wagons and materials, 1; cars and general shop construction and repairs by street-railroad companies, 1; chemicals, 1; clothing, men's, including shirts, 1; coke, 1; confectionery, 4; flour-mill and gristmill products, 3; food preparations, 1; foundry and machine-shop products, 8; furniture and refrigerators, 1; gas, illuminating and heating, 1; glass, cutting, staining, and ornamenting, 2; ice, manufactured, 3; iron and steel, blast furnaces, 1; iron and steel, steel works and rolling mills, 1; iron and steel forgings, 1; liquors,

PHILADELPHIA.

1 All industries.....	8,379	284,498	9,162	7,418	19,609	6,427	251,884	166,854	74,660	10,370	272,446	181,130	80,142	5,206	5,968	365,950
2 Artificial flowers and feathers and plumes.....	29	915	35	16	40	20	804	85	634	85	948	100	748	6	04	70
3 Belting and hose, leather.....	13	188	13	13	36	7	119	119	.....	.....	120	120	.....	.....	.....	286
4 Boots and shoes, including cut stock and findings.....	58	3,820	74	81	134	65	3,466	2,090	1,161	215	3,535	2,131	1,183	116	105	872
5 Boxes, cigar.....	7	346	9	8	6	3	320	219	83	18	320	219	83	11	7	362
6 Boxes, fancy and paper.....	65	3,682	67	91	93	52	3,379	862	2,102	415	3,732	951	2,321	56	404	1,382
7 Brass and bronze products.....	49	1,263	42	56	99	24	1,042	1,010	17	15	1,212	1,174	20	16	2	1,651
8 Bread and other bakery products.....	1,208	6,936	1,225	86	804	223	4,598	3,738	690	170	4,761	3,871	716	64	110	4,159
9 Brick and tile.....	31	1,468	51	25	23	.....	1,369	1,361	.....	8	1,388	1,380	.....	8	.....	2,715
10 Brooms.....	22	190	29	10	1	150	148	.....	2	.....	162	160	.....	2	.....	68
11 Brushes.....	37	340	41	9	25	6	259	196	53	10	265	201	54	7	3	187
12 Buttons.....	21	740	23	19	21	9	668	306	215	57	758	449	244	25	40	393
13 Canning and preserving.....	23	804	26	15	105	30	628	387	206	35	656	405	215	21	15	723
14 Carpets and rugs, other than rag.....	84	10,863	96	134	219	51	10,363	6,114	3,731	518	11,282	6,552	4,061	305	264	11,435
15 Carriages and wagons and materials.....	90	1,511	96	42	44	13	1,316	1,313	.....	3	1,345	1,342	.....	3	.....	1,100
16 Cars and general shop construction and repairs by steam-railroad companies.....	10	3,963	.....	180	114	.....	3,069	3,640	29	.....	3,072	3,039	.....	.....	.....	2,266
17 Chemicals.....	16	1,972	17	40	128	34	1,753	1,641	110	2	1,748	1,636	110	.....	2	4,875
18 Clocks and watches, including cases and materials.....	5	937	3	27	66	67	774	495	265	24	764	488	262	13	11	793
19 Clothing, men's, including shirts.....	450	14,075	716	167	759	218	12,215	6,474	5,521	220	12,952	6,870	5,846	95	141	2,472
20 Clothing, women's.....	351	15,627	576	240	958	353	13,500	4,631	8,707	162	14,483	4,965	9,340	28	150	1,955
21 Confectionery.....	129	3,371	128	64	186	102	2,891	1,012	1,654	225	3,651	1,279	2,088	54	230	1,099
22 Cooperage and wooden goods, not elsewhere specified.....	44	814	47	16	13	5	733	671	1	61	745	682	1	62	.....	729
23 Copper, tin, and sheet-iron products.....	134	3,490	159	102	234	56	2,939	2,695	176	68	3,369	3,090	201	69	9	2,074
24 Cordage and twine and jute and linen goods.....	8	1,214	8	17	23	3	1,163	649	462	61	1,179	648	468	26	37	2,250
25 Cork, cutting.....	6	75	8	4	2	1	60	34	21	5	62	35	22	3	2	49
26 Cotton goods, including cotton small wares.....	136	10,527	135	236	321	101	9,734	4,351	4,877	506	10,116	4,516	5,071	166	363	14,160
27 Cutlery and tools, not elsewhere specified.....	33	1,036	39	37	65	12	883	860	10	13	971	946	11	10	4	2,066
28 Dyeing and finishing textiles.....	104	3,991	133	116	129	38	3,575	3,003	425	147	3,801	3,101	452	131	27	7,037
29 Electrical machinery, apparatus, and supplies.....	45	2,317	23	116	317	102	1,759	1,458	260	41	2,053	1,701	304	44	4	2,663
30 Fancy articles, not elsewhere specified.....	42	827	47	13	27	21	719	354	338	27	802	395	377	19	11	341
31 Fertilizers.....	6	896	4	31	80	17	764	762	.....	2	753	751	.....	2	.....	3,020
32 Files.....	7	1,298	4	16	44	17	1,217	885	232	100	1,239	900	237	88	14	1,313
33 Flour-mill and gristmill products.....	28	154	36	8	17	4	89	89	.....	.....	95	95	.....	.....	.....	1,116
34 Foundry and machine-shop products.....	545	20,641	508	744	1,886	362	17,141	16,610	308	223	19,158	18,562	349	226	21	23,629
35 Fur goods.....	47	284	59	5	15	24	181	87	.....	.....	87	87	.....	.....	.....	10
36 Furniture and refrigerators.....	147	4,042	165	156	276	52	3,393	3,291	68	34	3,787	3,674	75	38	3,870

STATISTICS OF MANUFACTURES.

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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.

HARRISBURG.

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	\$22,925,122	\$21,314,436	\$391,294	\$677,051	\$4,541,259	\$906,141	\$13,177,003	\$45,963	\$285,069	\$177,694	\$1,112,962	\$22,725,328	\$8,642,184
2	301,283	497,113	7,244	4,108	90,946	13,044	348,053	4,163	2,301	.....	26,354	601,025	239,028
3	85,101	73,912	936	1,272	29,496	1,473	35,294	573	599	.....	4,269	92,370	55,603
4	1,756,882	590,372	45,786	23,902	204,904	20,076	188,054	320	5,026	.....	71,314	609,895	400,865
5	7,659,571	7,434,536	98,679	48,419	963,501	333,201	5,823,431	6,000	13,132	.....	148,173	7,620,923	1,494,291
6	398,363	231,946	10,400	8,000	36,719	9,515	95,909	.....	58,838	.....	12,565	360,540	255,116
7	283,533	296,942	9,612	3,100	46,028	1,290	212,614	1,356	825	.....	22,117	349,869	135,965
8	53,316	37,195	1,500	1,108	4,718	306	24,603	568	200	.....	4,202	57,100	32,191
9	1,119,437	780,607	41,306	82,654	266,605	12,912	250,956	11,584	3,346	32,856	78,388	953,978	690,110
10	1,266,879	1,583,949	13,866	24,259	497,498	3,518	678,489	7,211	183,682	160	175,366	1,761,606	1,079,599
11	10,057,667	9,817,864	161,965	480,139	2,400,844	509,006	5,519,000	14,198	17,220	144,678	570,214	10,318,022	4,289,416

and ornamenting, 1; hand stamps and stencils and brands, 1; hosiery and knit goods, 4; iron and steel, blast furnaces, 1; jewelry, 1; leather goods, 1; marble and stone work, 3; mattresses and spring beds, 1; mineral and soda waters, 4; models and patterns, not including paper patterns, 1; mucilage and paste, 1; oils, not elsewhere specified, 1; paint and varnish, 1; pottery, terra-cotta, and fire-clay products, 1; rubber goods, not elsewhere specified, 1; silk and silk goods, including throwsters, 1; slaughtering and meat packing, 1; soap, 1; surgical appliances and artificial limbs, 2; tin-plate and terneplate, 1; toys and games, 1; typewriters and supplies, 1; wheelbarrows, 1; window shades and fixtures, 1.

JOHNSTOWN.

1	\$47,242,096	\$44,448,096	\$463,798	\$538,947	\$6,304,103	\$5,216,754	\$27,131,728	\$16,739	\$343,447	\$22,838	\$4,409,742	\$48,105,775	\$15,757,293
2	155,802	202,165	4,108	1,055	35,222	3,545	142,641	1,840	1,660	.....	11,134	210,196	73,010
3	133,245	109,486	5,426	2,870	34,340	1,740	55,440	324	499	.....	8,838	138,455	81,275
4	1,669,530	627,343	22,340	19,704	91,378	14,890	171,214	.....	138,010	.....	169,807	808,351	622,247
5	177,005	174,537	7,300	8,100	43,436	6,016	92,530	240	720	11,333	4,912	195,104	96,563
6	379,064	219,680	12,554	22,662	86,575	4,830	69,093	4,789	668	1,530	16,989	280,875	206,952
7	44,727,390	43,114,825	412,010	483,656	6,013,143	5,185,733	26,600,810	9,546	201,890	9,975	4,198,062	46,463,794	14,677,251

distilled, 1; marble and stone work, 2; mattresses and spring beds, 2; mineral and soda waters, 4; models and patterns, not including paper patterns, 1; paint and varnish, 1; photo-engraving, 1; pottery, terra-cotta, and fire-clay products, 2; slaughtering and meat packing, 1; springs, steel, car and carriage, 1; steam packing, 1; stoves, gas and oil, 1; tobacco manufactures, 1; wall plaster, 1.

PHILADELPHIA.

1	\$691,396,873	\$663,405,035	\$17,731,066	\$21,715,118	\$126,380,829	\$12,892,039	\$416,200,238	\$7,082,927	\$5,483,356	\$6,439,368	\$49,500,094	\$746,075,659	\$316,983,382
2	934,444	1,119,499	33,312	38,257	261,863	6,268	668,674	20,583	1,348	7,010	82,184	1,313,901	638,959
3	636,841	1,000,895	23,360	39,256	81,400	8,635	800,610	8,850	1,163	.....	37,621	1,104,086	294,841
4	3,967,520	6,006,131	165,238	210,058	1,593,661	31,554	3,671,589	68,704	4,939	3,923	259,465	6,517,371	2,814,223
5	364,160	502,305	18,576	7,800	124,521	4,065	318,749	2,716	1,350	.....	24,528	542,933	220,169
6	2,456,925	3,309,513	143,321	94,949	1,112,668	39,911	1,591,087	97,550	4,501	1,194	224,332	3,821,642	2,190,644
7	3,213,090	3,598,384	121,080	125,935	624,991	62,852	2,455,072	18,196	9,848	6,996	172,814	4,057,132	1,539,208
8	14,890,194	16,398,953	176,008	774,354	2,591,915	389,619	11,260,025	210,631	110,041	968	884,892	19,018,476	7,368,832
9	3,037,869	1,560,316	37,712	18,757	786,323	303,391	152,799	24,155	15,524	4,436	217,219	1,885,222	1,429,032
10	144,550	345,291	.....	11,926	93,541	2,684	226,262	4,616	344	500	5,618	184,222	184,222
11	517,315	619,618	13,500	25,802	129,765	4,584	329,789	18,339	349	18,000	28,490	719,159	333,786
12	551,121	991,210	47,350	19,427	284,600	7,356	578,271	13,552	1,005	.....	30,649	1,188,550	572,923
13	1,527,762	2,297,852	37,133	128,456	226,086	18,129	1,753,452	14,256	4,353	.....	115,987	2,537,533	765,952
14	22,802,811	20,688,031	407,712	275,844	4,721,668	254,893	13,120,485	85,853	36,376	117,568	1,667,662	22,628,537	9,253,189
15	2,391,584	2,014,633	84,062	41,045	839,471	32,729	897,993	33,728	11,395	1,525	102,685	2,458,474	1,557,752
16	4,470,980	5,318,144	143,597	88,807	2,528,770	242,319	2,173,829	.....	18,945	.....	123,877	5,318,145	2,901,997
17	12,997,171	8,433,635	190,440	155,197	1,045,986	315,390	6,203,460	9,696	28,919	.....	494,547	9,642,702	3,123,852
18	2,737,282	1,743,883	89,311	73,135	399,095	11,446	966,202	1,518	2,363	.....	200,762	1,965,029	957,351
19	14,871,442	25,768,501	327,666	928,691	5,961,978	142,903	14,344,466	364,569	2,847	2,312,397	1,382,604	29,000,899	14,513,150
20	10,590,279	20,293,811	396,614	1,134,119	6,573,872	120,777	16,539,163	398,610	7,469	235,636	30,132,842	30,132,842	13,466,902
21	4,264,332	6,000,236	174,588	271,524	1,008,975	37,270	4,253,148	91,693	25,327	500	588,114	7,314,964	2,974,546
22	1,500,859	1,948,158	44,792	12,274	343,696	11,143	1,437,461	24,039	3,677	.....	71,076	2,213,712	785,103
23	6,511,211	6,775,996	207,975	205,997	1,559,475	56,063	4,272,006	55,501	17,998	13,371	384,110	7,492,331	3,161,862
24	3,816,268	2,744,186	64,628	39,889	429,350	15,140	2,120,272	1,000	4,494	200	69,313	3,324,660	1,189,248
25	73,702	90,031	5,109	2,756	24,081	1,793	47,493	2,820	280	.....	6,308	106,217	56,931
26	20,867,555	19,832,512	689,227	496,125	4,411,243	287,216	12,040,268	224,289	38,042	214,703	1,431,399	22,537,898	10,210,414
27	2,618,608	1,523,448	79,766	50,804	535,609	50,796	554,102	16,384	4,274	1,583	224,150	1,685,799	1,080,901
28	6,178,763	5,124,128	223,225	134,420	1,828,587	401,221	2,012,088	64,306	37,433	2,741	420,107	6,327,261	3,913,952
29	6,739,433	5,793,489	274,910	294,820	923,150	61,549	3,179,918	72,774	14,896	.....	968,637	7,066,145	3,823,673
30	882,995	1,022,332	24,248	28,473	296,278	16,289	528,736	21,744	1,503	15,583	89,478	1,281,392	736,367
31	4,345,808	3,945,307	102,748	99,281	374,542	65,331	2,988,636	21,300	15,879	.....	277,590	4,267,878	1,213,911
32	2,686,218	1,157,012	51,543	39,902	527,845	43,240	383,605	8,937	4,022	.....	97,918	1,539,566	1,112,721
33	880,067	2,757,601	13,580	21,371	52,587	16,831	2,606,859	3,066	2,619	.....	40,688	2,876,740	253,059
34	56,029,167	33,901,423	1,730,970	1,941,304	10,134,675	607,988	15,636,717	354,760	128,212	61,756	3,304,735	38,684,799	22,440,084
35	872,276	718,861	7,820	23,469	128,579	3,836	458,085	43,292	2,758	1,141	49,931	1,031,664	599,643
36	7,450,867	6,984,391	318,523	286,150	1,939,927	62,364	3,668,150	120,229	15,474	12,094	562,475	8,051,535	4,321,021

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.

PHILADELPHIA—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.								
37 Gas and electric fixtures and lamps and reflectors.	41	1,376	38	81	131	30	1,096	1,008	44	44	1,300	1,197	51	51	1	870	
38 Glass.	4	1,185	1	31	29	12	1,112	854	90	108	1,334	1,024	108	188	14	419	
39 Hats and caps, other than felt, straw, and wool.	42	562	55	11	22	10	464	322	139	3	476	330	143	2	1	51	
40 Hats, fur-felt.	27	6,080	34	41	161	19	5,825	4,054	1,491	280	6,217	4,327	1,591	133	166	4,163	
41 Hosiery and knit goods.	177	17,027	195	301	364	168	15,999	10,799	1,680	1,680	17,027	11,526	487	1,311	7,962		
42 Ice, manufactured.	31	645	12	58	36	4	535	535	.....	.....	496	406	.....	.....	11,703
43 Ink, printing.	8	246	6	18	50	7	165	165	.....	.....	162	162	.....	.....	483
44 Iron and steel, steel works and rolling mills.	8	5,248	6	36	374	11	4,821	4,793	.....	28	5,341	5,310	.....	31	27,009
45 Jewelry.	52	411	69	10	17	20	295	245	33	17	305	253	34	13	5	110	
46 Leather goods.	84	2,092	108	45	185	47	1,707	1,036	476	195	1,763	1,070	492	51	150	430	
47 Leather, tanned, curried, and finished.	41	6,400	36	128	214	50	5,972	5,273	556	143	6,265	5,534	580	104	47	8,664	
48 Liquors, malt.	48	2,290	31	133	261	8	1,857	1,848	7	2	1,830	1,821	7	2	13,368		
49 Lumber and timber products.	98	3,669	103	94	130	34	3,248	3,059	75	114	3,567	3,349	82	119	7,872		
50 Marble and stone work.	98	1,849	127	48	64	11	1,619	1,606	10	3	1,659	1,646	10	3	2,662		
51 Mattresses and spring beds.	38	408	37	12	35	15	309	231	69	9	326	244	73	9	471		
52 Millinery and lace goods.	90	3,164	124	51	133	86	2,770	429	2,213	128	2,830	437	2,202	31	100	370	
53 Musical instruments, pianos and organs and materials.	14	501	13	16	11	3	458	411	11	36	488	438	12	38	361		
54 Optical goods.	14	419	12	12	68	36	291	172	104	15	295	175	105	5	10	110	
55 Paint and varnish.	50	1,612	46	82	227	60	1,197	1,155	36	6	1,274	1,229	39	5	4,027		
56 Paper and wood pulp.	7	1,395	2	26	45	21	1,301	1,145	156	.....	1,315	1,158	157	.....	10,645
57 Paper goods, not elsewhere specified.	31	1,600	31	47	137	74	1,311	602	638	71	1,350	620	657	30	43	1,213	
58 Patent medicines and compounds and druggists' preparations.	174	3,175	153	128	516	238	2,140	918	1,166	56	2,243	920	1,222	24	35	2,012	
59 Photo-engraving.	16	546	15	26	80	28	397	384	12	1	397	384	12	1	105		
60 Pottery, terra-cotta, and fire-clay products.	13	640	9	21	20	5	585	572	6	7	650	635	7	8	893		
61 Printing and publishing.	931	20,912	885	972	3,406	1,968	13,681	10,028	3,160	493	14,024	10,712	3,383	307	102	12,207	
62 Safes and vaults.	3	278	.....	8	24	1	245	243	.....	2	250	254	.....	2	418
63 Shoddy.	15	442	20	11	11	7	393	293	100	.....	405	302	103	.....	1,718
64 Silk and silk goods, including throwsters.	32	3,348	29	68	150	45	3,056	1,008	1,855	193	3,322	1,036	2,016	80	130	2,156	
65 Slaughtering and meat packing.	81	1,430	110	39	138	34	1,109	1,101	8	.....	1,144	1,136	8	.....	3,004
66 Smelting and refining, not from the ore.	15	160	14	8	11	6	121	120	1	.....	139	138	1	.....	208
67 Soap.	32	1,059	40	15	143	62	799	611	151	37	767	587	145	25	10	1,520	
68 Steam packing.	15	351	12	23	99	24	193	170	20	3	237	208	25	4	413		
69 Stoves and furnaces, including gas and oil stoves.	20	984	18	35	67	18	846	840	3	3	845	839	3	3	891		
70 Tobacco manufactures.	496	7,634	528	127	361	73	6,545	3,096	3,266	183	7,152	3,380	3,572	21	179	891	
71 Umbrellas and canes.	31	1,297	31	29	54	17	1,166	700	420	46	1,215	724	437	42	12	1,342	
72 Wall paper.	4	504	13	35	2	454	323	45	83	503	361	50	72	20	525	
73 Woolen, worsted, and felt goods, and wool hats.	131	20,073	150	256	386	105	19,177	8,073	9,282	1,822	19,873	8,371	9,623	709	1,080	33,428	
74 All other industries ¹ .	1,331	48,909	1,420	1,427	4,095	975	40,992	34,187	5,780	1,025	46,571	38,829	0,589	739	414	97,447	

¹ All other industries embrace: Agricultural implements, 2; artificial stone, 8; artists' materials, 3; automobiles, including bodies and parts, 18; awnings, tents, and sails, 20; axle grease, 3; babbit metal and solder, 11; bags, other than paper, 4; bags, paper, 11; baking powders and yeast, 3; baskets, and rattan and willow ware, 17; belting and hose, woven and rubber, 3; bicycles, motorcycles, and parts, 7; billiard tables and materials, 3; blacking and cleansing and polishing preparations, 30; bluing, 8; bone, carbon, and lamp black, 2; butter, cheese, and condensed milk, 1; card cutting and designing, 16; carpets, rag, 13; carriages and sleds, children's, 2; cars and general shop construction and repairs by street-railroad companies, 3; cars, street-railroad, not including operations of railroad companies, 1; china decorating, 2; chocolate and cocoa products, 2; cloth, sponging and refinishing, 7; clothing, horse, 7; clothing, men's, buttonholes, 10; coffee and spice, roasting and grinding, 61; coffins, burial cases, and undertakers' goods, 8; cordials and syrups, 4; corsets, 2; crucibles, 3; dairy men's, putters' and apiarists' supplies, 4; dentists' materials, 20; drug grinding, 2; dyestuffs and extracts, 1; electroplating, 22; emery and other abrasive wheels, 2; enameling and japanning, 9; engravers' materials, 1; engraving and desinking, 24; engraving, wood, 5; firearms and ammunition, 5; fire extinguishers, chemical, 1; flags, banners, regalia, society badges, and emblems, 23; flavoring extracts, 21; food preparations, 66; foundry supplies, 1; furnishing goods, men's, 38; furs, dressed, 1; galvanizing, 4; gas, illuminating and heating, 4; glass, cutting, staining, and ornamenting, 51; glue, 3; gold and silver, leaf and foil, 6; gold and silver, reducing and refining, not from the ore, 5; grease and tallow, 13; grindstones, 1; haircloth, 9; hair work, 8; hammocks, 3; hand stamps and stencils and brands, 22; hat and cap materials, 5; hats, straw, 9; house-furnishing goods, not elsewhere specified, 17; ink, writing, 3; instruments, professional and scientific, 31; iron and steel, bolts, nuts, washers, and rivets, not made in steel works or rolling mills, 8; iron and steel forgings, 9; iron and steel, nails and spikes, cut and wrought, including wire nails, not made in steel works

PITTSBURGH.

1 All industries	1,859	79,625	1,553	2,457	6,731	1,410	67,474	58,369	7,699	1,406	78,752	68,571	8,495	998	688	307,666
2 Boxes, fancy and paper.	7	237	7	9	1	6	214	53	129	32	235	58	142	4	31	165
3 Brass and bronze products.	12	740	14	23	52	22	629	592	30	7	795	748	38	3	6	2,756
4 Bread and other bakery products.	248	2,791	264	46	396	76	2,009	1,282	595	132	2,108	1,346	623	22	117	2,222
5 Brick and tile.	17	457	17	19	10	4	407	395	12	.....	458	444	14	.....	.....	2,614
6 Brooms.	6	60	9	5	.....	1	45	43	1	1	68	65	1	2	.....	65
7 Brushes.	3	71	1	5	5	5	55	39	14	2	51	36	13	.....	2	100
8 Canning and preserving.	11	3,073	14	70	1,084	195	1,710	891	812	7	1,658	863	788	1	6	1,811
9 Carriages and wagons and materials.	28	358	30	19	10	1	298	297	.....	1	279	278	.....	1	.....	9,898
10 Cars and general shop construction and repairs by steam-railroad companies.	7	4,827	.....	226	281	7	4,313	4,278	26	9	4,849	4,809	31	9	.....	260
11 Chemicals.	3	62	.....	7	5	2	48	48	.....	.....	45	45	.....	.....	.....	.....
12 Clothing, men's, including shirts.	24	1,011	43	12	77	13	866	171	690	5	965	190	769	2	4	340
13 Clothing, women's.	5	72	6	.....	5	1	60	4	56	.....	66	4	62	.....	.....	13
14 Confectionery.	16	713	7	19	58	16	613	183	397	33	806	240	522	4	40	549
15 Cooperage and wooden goods, not elsewhere specified.	12	202	13	9	9	3	168	158	.....	10	198	186	.....	12	.....	144
16 Copper, tin, and sheet-iron products.	48	608	51	42	28	16	471	395	51	25	539	452	59	15	13	849

SUPPLEMENT FOR PENNSYLVANIA.

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.
PITTSBURGH—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.	Salaries, 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.								
17 Cutlery and tools, not elsewhere specified...	16	743	20	21	29	9	664	619	36	9	695	648	38	9	1,238		
18 Electrical machinery, apparatus, and supplies.	13	1,012	8	41	75	26	862	589	265	8	946	647	290	8	1,640		
19 Foundry and machine-shop products.....	155	9,742	81	390	907	149	8,215	8,000	140	66	10,100	9,843	175	59	18,311		
20 Furniture and refrigerators.....	11	373	12	20	19	7	315	299	12	4	283	269	11	3	629		
21 Gas and electric fixtures and lamps and reflectors.	16	302	16	24	21	8	233	121	106	6	311	161	142	4	212		
22 Glass.....	9	1,233	6	29	45	12	1,171	877	93	201	1,703	1,276	134	258	915		
23 Ice, manufactured.....	15	268	2	22	42	6	196	195	1	9	1,766	1,775	1	12	5,384		
24 Iron and steel, blast furnaces.....	6	1,749	.....	75	259	32	1,383	1,374	.....	9	1,840	1,828	.....	12	60,768
25 Iron and steel, steel works and rolling mills.	25	25,341	.....	436	1,173	172	23,500	23,065	236	259	27,887	27,294	269	254	156,512	
26 Jewelry.....	6	96	9	2	3	5	77	64	10	3	77	64	10	3	19		
27 Leather goods.....	12	154	13	9	6	2	124	107	16	1	125	108	16	1	79		
28 Leather, tanned, curried, and finished.....	6	273	2	14	11	2	244	243	.....	1	234	233	.....	.....	846
29 Liquors, malt.....	12	994	.....	24	96	1	873	872	1	28	867	866	1	32	6,591	
30 Lumber and timber products.....	40	780	46	35	47	7	645	616	1	2	740	707	1	2	2,836		
31 Marble and stone work.....	25	348	30	14	12	7	285	253	.....	2	323	321	.....	2	709
32 Mattresses and spring beds.....	6	256	5	9	15	4	223	175	44	4	252	197	50	5	261		
33 Paint and varnish.....	16	362	12	29	53	16	252	233	18	1	240	222	17	1	1,760		
34 Patent medicines and compounds and druggists' preparations.	31	214	25	22	41	12	114	66	46	2	100	68	40	2	263		
35 Photo-engraving.....	6	109	6	14	8	4	77	69	4	4	78	70	4	4	71		
36 Pottery, terra-cotta and fire-clay products.	3	337	.....	8	6	3	320	313	7	.....	335	328	7	.....	850
37 Printing and publishing.....	254	4,216	255	223	752	181	2,805	2,104	614	87	2,996	2,173	634	82	7	4,173	
38 Shipbuilding, including boat building.....	4	169	4	14	7	.....	144	144	.....	2	115	115	.....	.....	580
39 Slaughtering and meat packing.....	14	1,063	7	36	164	15	841	832	7	2	886	877	7	2	3,391		
40 Soap.....	7	469	12	6	80	128	243	114	128	1	264	124	139	1	438		
41 Stoves and furnaces, including gas and oil stoves.	9	235	8	12	25	7	233	216	14	3	258	239	16	3	256		
42 Surgical appliances and artificial limbs.....	9	66	13	4	6	1	42	41	.....	1	41	40	.....	1	31
43 Tobacco manufactures.....	215	3,456	223	54	64	50	3,065	742	2,075	248	3,161	765	2,140	10	240		
44 All other industries ¹	271	9,903	262	359	744	176	8,362	7,158	1,012	192	10,699	9,159	1,291	166	83	25,628	

¹ All other industries embrace: Artificial flowers and feathers and plumes, 1; artificial stone, 1; automobiles, including bodies and parts, 1; awnings, tents, and sails, 7; babbitt metal and solder, 2; baking powders and yeast, 1; baskets, and rattan and willow ware, 3; belting and hose, leather, 1; billiard tables and materials, 1; bluing, 1; boots and shoes, including cut stock and findings, 1; boxes, cigar, 3; butter, cheese, and condensed milk, 2; calcium lights, 1; card cutting and designing, 1; carpets, rag, 2; cars and general shop construction and repairs by street-railroad companies, 1; cars, steam-railroad, not including operations of railroad companies, 1; chocolate and cocoa products, 1; cleaning and polishing preparations, 4; cloth, sponging and refinishing, 1; coffee and spice, roasting and grinding, 4; coffins, burial cases, and undertaker's goods, 3; coke, 2; cork, cutting, 1; crucibles, 1; electroplating, 6; engraving and die-sinking, 1; engraving, wood, 3; fancy articles, not elsewhere specified, 2; er's goods, 1; fire extinguishers, chemical, 1; fireworks, 1; flags, banners, regalia, society badges, and emblems, 1; flavoring extracts, 5; flour-mill and gristmill products, fertilizers, 1; fire extinguishers, chemical, 1; fireworks, 1; flags, banners, regalia, society badges, and emblems, 1; flavoring extracts, 5; flour-mill and gristmill products, 1; food preparations, 12; foundry supplies, 1; fur goods, 6; furnishing goods, men's, 3; galvanizing, 3; gas, illuminating and heating, 3; glass, cutting, staining, and ornamenting, 22; gloves and mittens, leather, 1; grease and tallow, 2; hair work, 2; hand stamps and stencils and brands, 3; hats and caps, other than felt, straw, and wool, 2;

READING.

	482	26,407	517	485	1,020	240	24,145	16,610	6,213	1,322	26,484	18,499	6,576	602	807	43,193
1 All Industries.....	482	26,407	517	485	1,020	240	24,145	16,610	6,213	1,322	26,484	18,499	6,576	602	807	43,193
2 Automobiles, including bodies and parts...	5	398	2	10	27	4	355	355	.....	7	393	393	.....	.....	.....	235
3 Boxes, cigar.....	4	119	4	4	1	2	108	47	54	12	112	49	56	7	.....	99
4 Boxes, fancy and paper.....	6	164	10	6	.....	3	145	45	83	1	150	40	97	4	9	115
5 Brass and bronze products.....	8	79	0	6	5	2	57	55	1	.....	78	76	1	1	.....	72
6 Bread and other bakery products.....	55	447	63	4	21	12	342	304	15	23	370	329	16	20	5	282
7 Brooms ¹	6	61	8	.....	5	1	47	45	2	.....	47	45	2	.....	.....	26
8 Carriages and wagons and materials.....	8	314	11	5	4	4	290	289	1	.....	279	278	1	.....	.....	224
9 Cars and general shop construction and repairs by steam-railroad companies.	6	2,765	.....	60	77	.....	2,628	2,628	.....	.....	3,001	3,001	.....	.....	.....	5,752
10 Clothing, men's, including shirts.....	10	608	20	13	38	3	534	125	384	25	554	132	406	14	12	118
11 Clothing, women's.....	7	161	9	1	.....	1	150	5	141	4	161	6	151	1	3	46
12 Confectionery.....	10	597	13	15	74	20	385	151	207	27	538	211	289	11	27	388
13 Copper, tin, and sheet-iron products.....	3	15	2	.....	.....	.....	13	13	.....	.....	13	13	.....	.....	.....	3
14 Dyeing and finishing textiles.....	4	298	1	9	10	6	272	218	41	13	298	239	45	12	2	625
15 Foundry and machine-shop products.....	37	3,079	26	57	134	30	2,832	2,577	136	119	3,220	2,929	156	102	33	3,339
16 Hats, fur-felt.....	5	870	6	20	6	2	836	562	211	63	853	573	215	47	18	87
17 Hosiery and knit goods.....	38	4,521	30	41	33	21	4,366	642	3,200	554	4,497	655	3,275	111	456	2,097
18 Iron and steel, steel works and rolling mills.	6	3,218	.....	29	151	27	3,011	2,982	.....	19	3,481	3,459	.....	22	.....	11,269
19 Leather goods.....	5	89	6	5	.....	2	74	61	2	11	80	65	2	11	1	84
20 Liquors, malt.....	4	153	4	10	34	.....	105	105	.....	.....	104	104	.....	.....	.....	1,555
21 Lumber and timber products.....	6	246	1	9	11	3	222	210	.....	12	243	230	.....	13	.....	722
22 Marble and stone work.....	9	119	16	1	2	.....	91	91	.....	.....	94	94	.....	.....	.....	179
23 Optical goods.....	3	288	2	7	4	2	273	104	123	40	270	103	122	15	30	170
24 Patent medicines and compounds and druggists' preparations.	13	32	16	.....	1	.....	15	9	6	.....	18	11	7	.....	.....	10
25 Printing and publishing.....	37	452	42	13	100	21	276	220	46	10	331	264	55	11	1	355
26 Tobacco manufactures.....	81	1,589	107	11	53	15	1,403	714	685	4	1,504	766	734	.....	4	49
27 Woolen, worsted, and felt goods, and wool hats.	5	643	12	19	16	2	494	368	89	37	426	317	77	15	17	628
28 All other industries ²	101	5,281	92	130	211	57	4,791	3,675	781	335	5,350	4,107	869	185	189	14,674

¹ Includes two establishments engaged in the manufacture of brushes.

² All other industries embrace: Bags, paper, 1; baskets, and rattan and willow ware, 2; bicycles, motorcycles, and parts, 1; boots and shoes, including cut stock and findings, 4; cooperage and wooden goods, not elsewhere specified, 1; cordage and twine and jute and linen goods, 1; cotton goods, including cotton small wares, 1; cutlery and tools, not elsewhere specified, 5; flags, banners, regalia, society badges, and emblems, 1; flour-mill and gristmill products, 2; furniture and refrigerators, 2; gas and electric fixtures and lamps and reflectors, 2; gas, illuminating and heating, 2; glass, cutting, staining, and ornamenting, 1; hand stamps and stencils

STATISTICS OF MANUFACTURES.

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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.

PITTSBURGH—Continued.

	EXPENSES.											Value of products.	Value added by manu- facture.
	Capital.	Total.	Services.			Materials.			Miscellaneous.				
			Officials.	Clerks.	Wage earners.	Fuel and rent of power.	Other.	Rent of factory.	Taxes, including internal revenue.	Contract work.	Other.		
17	\$1,257,878	\$1,448,371	\$43,675	\$33,870	\$345,555	\$34,154	\$822,573	\$8,161	\$5,804	-----	\$84,570	\$1,654,333	\$727,606
18	3,320,644	2,924,427	109,885	71,910	432,506	12,909	1,823,873	22,470	14,714	-----	430,070	3,323,747	1,480,965
19	31,926,579	19,675,171	981,332	981,732	5,773,069	404,607	9,538,527	238,976	164,866	\$1,876	1,590,166	21,690,645	11,747,511
20	826,412	802,525	31,623	22,410	187,884	9,702	430,745	11,458	10,290	-----	98,413	900,036	459,589
21	435,324	463,974	30,248	17,963	95,400	4,399	257,451	12,804	2,073	-----	60	467,171	205,321
22	2,453,387	1,326,677	73,700	60,272	603,039	81,870	367,548	6,332	11,871	-----	117,045	1,443,275	993,857
23	2,965,308	618,495	48,650	41,862	131,302	114,556	84,252	1,000	25,778	-----	171,095	957,923	759,115
24	30,134,438	18,195,338	263,989	354,725	1,053,258	3,794,221	12,244,150	56,250	96,245	-----	332,500	20,668,023	4,623,652
25	105,052,680	76,007,909	1,104,518	1,239,769	14,454,704	3,737,907	52,148,698	133,426	381,469	-----	2,757,358	82,306,627	26,420,022
26	88,607	163,154	2,600	4,229	54,651	1,416	86,546	9,187	12	-----	4,513	182,514	94,552
27	318,223	229,914	7,330	3,080	63,722	1,755	134,643	11,674	571	-----	7,139	260,459	124,061
28	1,552,676	1,167,040	28,635	17,820	138,824	12,303	901,610	8,332	8,641	-----	50,875	1,101,603	247,693
29	14,627,749	4,011,957	120,315	179,064	685,661	103,156	1,164,059	-----	914,929	-----	844,773	5,419,704	4,152,489
30	2,019,116	1,638,844	54,658	44,007	433,073	18,714	941,510	23,159	16,140	-----	107,682	1,694,270	794,040
31	562,871	543,724	22,040	21,596	193,883	5,278	242,450	9,129	4,130	-----	12,988	593,152	330,424
32	574,089	553,241	22,150	15,375	123,079	3,531	333,866	12,000	5,371	-----	42,269	589,588	253,101
33	2,360,896	2,199,869	67,383	69,874	138,480	24,431	1,715,379	24,888	10,896	-----	452	2,419,066	679,196
34	684,676	700,554	38,938	56,704	51,090	3,802	309,658	17,308	4,780	-----	210	897,867	584,407
35	107,935	154,504	26,555	7,494	55,371	2,369	38,332	7,440	65	-----	5,682	11,196	146,137
36	1,172,949	418,223	19,200	6,845	154,584	29,112	166,233	-----	6,673	-----	35,576	507,308	311,953
37	9,599,947	7,738,345	488,555	825,071	1,959,512	65,235	2,694,009	212,415	39,401	-----	286,472	1,257,075	6,401,645
38	532,631	264,672	35,248	6,833	96,417	3,548	103,719	4,175	4,312	-----	10,870	267,835	160,583
39	3,609,865	12,837,408	99,600	176,723	553,307	52,648	11,413,201	38,564	25,841	-----	477,524	13,106,735	1,640,886
40	1,184,790	1,140,290	13,100	92,942	103,561	14,933	449,435	698	5,987	-----	465,634	1,206,704	748,336
41	1,226,411	394,971	21,475	27,728	132,654	4,700	156,984	5,634	8,287	-----	900	416,332	255,639
42	35,055	91,237	4,860	7,182	36,833	769	18,784	8,030	92	-----	-----	111,323	91,770
43	1,877,915	3,260,534	71,001	72,162	844,257	11,581	1,160,663	27,270	887,636	-----	961	3,615,296	2,443,052
44	34,948,423	30,619,233	832,653	765,075	4,446,643	2,320,291	19,352,799	200,686	855,800	-----	11,822	1,803,464	12,824,750

house-furnishing goods, not elsewhere specified, 1; ink, writing, 2; instruments, professional and scientific, 2; iron and steel, bolts, nuts, washers, and rivets, not made in steel works or rolling mills, 7; iron and steel, doors and shutters, 1; iron and steel forgings, 2; iron and steel pipe, wrought, 2; kaolin and ground earths, 1; lead, bar, pipe, and sheet, 2; liquors, distilled, 1; locomotives, not made by railroad companies, 2; looking-glass and picture frames, 3; millinery and lace goods, 3; mineral and soda waters, 24; mirrors, 3; models and patterns, not including paper patterns, 13; mucilage and paste, 3; oil, castor, 1; oil, not elsewhere specified, 7; optical goods, 2; paper goods, not elsewhere specified, 1; paving materials, 1; petroleum, refining, 3; plated ware, 1; printing materials, 1; roofing materials, 3; safes and vaults, 1; salt, 1; saws, 1; show cases, 1; signs and advertising novelties, 1; smelting and refining, not from the ore, 4; springs, steel, car and carriage, 4; statuary and art goods, 6; steam packing, 2; stereotyping and electrotyping, 3; sulphuric, nitric, and mixed acids, 1; tin plate and terneplate, 2; umbrellas and canes, 1; vault lights and ventilators, 1; vinegar and cider, 2; wall plaster, 1; wheelbarrows, 2; window shades and fixtures, 2; wirework, including wire rope and cable, 6; wood, turned and carved, 3; wool pulling, 3; woolen, worsted, and felt goods, and wool hats, 1.

READING.

1	\$41,052,893	\$46,094,414	\$644,883	\$965,408	\$11,011,328	\$1,480,431	\$28,357,874	\$171,843	\$580,252	\$99,625	\$2,572,770	\$51,134,967	\$21,286,662
2	572,192	611,977	17,709	16,512	187,361	7,024	306,763	5,970	1,361	-----	69,277	666,205	352,418
3	118,388	112,457	3,532	1,170	39,000	1,299	60,550	836	279	-----	5,782	128,269	66,420
4	126,756	140,780	5,948	1,144	49,663	2,403	76,417	1,265	776	-----	3,230	163,879	85,059
5	116,429	137,997	7,212	2,448	29,903	3,492	87,197	7,502	461	-----	6,532	148,020	53,231
6	517,240	794,213	4,016	12,477	100,968	22,639	513,600	7,017	3,421	-----	40,135	950,357	414,113
7	32,320	109,699	-----	325	16,311	475	87,504	520	109	-----	4,455	158,500	70,521
8	291,977	344,764	6,090	5,235	145,304	6,298	156,822	4,858	769	-----	19,329	412,803	249,683
9	3,984,546	5,566,873	7,970	73,923	1,681,345	87,337	3,679,575	-----	8,750	-----	27,973	5,660,928	1,894,016
10	508,012	323,190	20,494	35,529	166,697	6,981	559,884	7,065	544	5,315	20,051	938,358	371,493
11	63,316	111,048	936	364	36,451	1,393	70,041	900	146	-----	1,417	130,145	53,711
12	516,248	838,882	18,681	53,633	95,679	7,980	592,051	1,926	1,149	22,354	45,429	1,047,218	447,187
13	20,950	25,312	-----	-----	9,050	82	14,467	660	147	-----	906	32,830	18,271
14	289,865	274,086	12,120	9,345	84,356	16,597	117,722	-----	2,191	-----	31,755	293,901	159,582
15	4,293,149	3,578,328	108,429	118,925	1,383,622	98,854	1,616,964	29,310	11,750	-----	976	3,889,062	2,178,244
16	588,096	1,456,848	31,470	36,972	366,912	23,508	861,206	720	1,523	-----	760	1,571,125	636,411
17	4,025,056	3,890,711	70,766	49,693	1,322,551	26,051	2,106,444	23,366	7,577	22,161	268,102	4,551,087	2,418,592
18	6,524,105	7,630,050	102,771	165,119	1,670,240	472,089	4,877,731	-----	14,053	-----	327,447	8,139,378	2,839,378
19	63,343	103,670	3,709	1,416	23,727	397	62,630	3,083	6	-----	8,642	127,977	64,950
20	2,546,112	1,151,375	52,900	23,680	72,721	29,244	319,709	16,900	265,313	-----	361,828	1,416,854	1,067,901
21	428,609	448,921	13,246	7,300	105,553	4,733	391,007	696	1,510	-----	14,777	547,035	241,265
22	131,411	116,152	1,200	2,500	52,888	1,963	44,807	805	317	-----	11,702	156,300	109,530
23	391,899	278,280	14,098	3,926	86,108	2,233	137,093	100	1,167	-----	33,555	339,367	200,041
24	31,153	48,332	-----	750	5,845	327	32,460	909	401	-----	7,640	66,726	33,939
25	571,308	529,845	20,190	59,555	198,744	8,906	152,861	11,708	1,288	0,781	66,812	743,104	531,337
26	1,249,784	2,305,015	21,236	74,111	563,117	3,189	1,278,464	8,552	214,657	-----	141,493	2,574,114	1,292,461
27	789,160	1,110,768	19,261	17,293	236,042	14,890	725,180	3,800	1,561	8,396	83,740	1,314,590	574,520
28	11,909,969	13,554,235	280,824	188,028	2,190,647	639,447	9,518,635	40,455	39,017	29,740	627,436	14,914,945	4,766,863

and brands, 2; hats and caps, other than felt, straw, and wool, 1; ice, manufactured, 2; iron and steel, blast furnaces, 1; iron and steel forgings, 2; iron and steel pipe, wrought, 2; jewelry, 4; leather, tanned, curried, and finished, 1; mattresses and spring beds, 2; mineral and soda waters, 7; models and patterns, not including paper patterns, 9; needles, pins, and hooks and eyes, 1; paint and varnish, 3; paper and wood pulp, 2; photo-engraving, 2; pottery, terra-cotta, and fire-clay products, 2; scales and balances, 1; signs and advertising novelties, 2; silk and silk goods, including throwsters, 3; slaughtering and meat packing, 4; soap, 1; stoves and furnaces, including gas and oil stoves, 3; umbrellas and canes, 1; wall paper, 1; washing machines and clothes wringers, 3; wood, turned and carved, 1.

SUPPLEMENT FOR PENNSYLVANIA.

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.
SCRANTON.

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.....	293	14,242	270	316	603	202	12,851	6,756	5,068	1,027	13,180	6,963	5,179	318	720	20,564	
2 Bread and other bakery products.....	38	322	86	10	19	13	244	103	46	5	46	36	9	1	.....	290
3 Brick and tile.....	3	74	1	0	1	1	65	65	.....	.....	47	47	.....	.....	.....	525
4 Carriages and wagons and materials.....	13	230	18	8	5	2	197	106	.....	1	195	194	.....	1	.....	294
5 Clothing, women's.....	7	446	9	5	3	8	421	40	356	25	484	46	409	1	28	103	
6 Copper, tin, and sheet-iron products.....	8	60	8	1	2	1	48	48	.....	.....	47	47	.....	.....	.....	5
7 Flour-mill and gristmill products.....	4	35	5	3	5	3	19	.....	.....	.....	16	16	.....	.....	.....	268
8 Foundry and machine-shop products.....	20	1,280	16	43	118	26	1,083	1,080	3	.....	1,256	1,252	4	.....	.....	2,467
9 Gas and electric fixtures and lamps and reflectors.....	3	27	2	2	.....	.....	23	22	1	.....	26	25	1	.....	.....	19
10 Liquors, malt.....	5	341	.....	15	42	3	281	281	.....	.....	278	278	.....	.....	.....	1,172
11 Lumber and timber products.....	9	432	9	18	12	4	389	387	.....	2	452	450	.....	2	.....	737
12 Patent medicines and compounds and druggists' preparations.....	10	96	8	5	5	18	60	4	56	.....	81	5	76	.....	.....	1
13 Printing and publishing.....	48	860	50	48	90	24	588	425	154	9	680	491	178	11	.....	700
14 Silk and silk goods, including throwsters.....	15	3,908	9	35	36	16	3,814	378	644	.....	3,830	378	2,805	154	493	4,738
15 Tobacco manufactures.....	28	339	32	13	27	3	264	62	182	20	269	63	185	1	20	135	
16 All other industries ¹	82	5,846	67	106	238	80	5,355	3,556	1,478	321	5,473	3,035	1,512	147	170	9,200	

¹ All other industries embrace: Artists' materials, 1; awnings, tents, and sails, 3; bluing, 1; boots and shoes, including cut stock and findings, 1; brass and bronze products, 1; brushes, 1; buttons, 1; canning and preserving, 2; carpets, rag, 1; cars and general shop construction and repairs by steam-railroad companies, 2; cars and general shop construction and repairs by street-railroad companies, 1; clothing, men's, including shirts, 2; coffins, burial cases, and undertakers' goods, 1; confectionery, 2; cotton goods, including cotton small wares, 1; cutlery and tools, not elsewhere specified, 1; dentists' materials, 1; dyeing and finishing textiles, 1; electroplating, 2; emery and other abrasive wheels, 1; engraving and diesinking, 1; flavoring extracts, 2; fur goods, 1; gas, illuminating and heating, 1; hair work, 1; horseshoes, not made in steel works or rolling

WILKES-BARRE.

1 All industries.....	176	8,329	177	180	370	49	7,553	4,943	2,062	548	7,546	4,900	2,095	221	330	12,109
2 Bread and other bakery products.....	28	254	31	10	16	1	196	176	13	7	204	183	14	7	.....	126
3 Brick and tile.....	3	85	3	4	2	1	75	75	.....	.....	70	70	.....	.....	.....	190
4 Clothing, women's.....	3	322	2	2	15	4	299	24	235	40	279	22	220	.....	37	46
5 Flour-mill and gristmill products.....	4	27	3	3	.....	.....	18	18	.....	.....	18	18	.....	.....	.....	270
6 Furniture and refrigerators.....	4	84	5	3	5	1	70	66	2	2	71	67	2	2	.....	56
7 Printing and publishing.....	31	462	36	27	63	9	327	284	32	11	386	292	33	10	1	320
8 Silk and silk goods, including throwsters.....	6	1,113	.....	8	17	5	1,083	135	771	177	1,162	145	828	36	153	1,866
9 Tobacco manufactures.....	13	36	14	.....	.....	.....	22	18	4	.....	22	18	4	.....	.....	.....
10 All other industries ¹	84	5,946	83	123	249	28	5,463	4,147	1,005	311	5,384	4,085	994	166	139	9,235

¹ All other industries embrace: Artificial stone, 1; boots and shoes, including cut stock and findings, 1; brass and bronze products, 1; carriages and wagons and materials, 7; cars and general shop construction and repairs by steam-railroad companies, 2; clothing, men's, including shirts, 2; coffee and spice, roasting and grinding, 1; copper, tin, and sheet-iron products, 2; corsets, 1; cotton goods, including cotton small wares, 2; cutlery and tools, not elsewhere specified, 4; electrical machinery, apparatus, and supplies, 2; firearms and ammunition, 2; flavoring extracts, 1; food preparations, 1; foundry and machine-shop products, 7; gas, illuminating and heating, 1; grease and tallow, 1; hats and caps, other than felt, straw, and wool, 2; ice, manufactured, 1; instruments, professional and scientific, 1; jewelry, 1; liquors, malt, 3; locomotives,

STATISTICS OF MANUFACTURES.

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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.

SCRANTON.

Capital.	EXPENSES.										Value of products.	Value added by manufac-ture.
	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 \$22,494,063	\$23,402,092	\$719,456	\$617,959	\$5,146,237	\$415,704	\$13,886,141	\$171,374	\$512,633	\$405,033	\$1,528,155	\$26,384,765	\$12,082,910
2 412,407	685,628	11,346	19,680	118,218	11,402	467,069	7,698	1,649	.....	47,657	758,857	279,486
3 165,556	55,873	4,542	1,020	26,023	5,432	9,860	.....	34	.....	8,762	59,106	43,904
4 534,320	283,868	10,345	4,637	102,740	9,563	140,598	3,642	1,463	860	10,015	331,260	181,099
5 269,868	471,399	7,689	7,060	127,048	2,837	282,531	8,465	139	831	33,909	549,583	264,215
6 40,361	69,105	1,300	1,038	22,098	379	30,429	2,184	35	.....	1,642	74,517	43,709
7 126,836	208,058	1,640	4,249	6,344	1,426	187,365	1,088	872	.....	5,074	226,523	37,732
8 5,402,992	1,949,987	94,993	132,913	567,115	54,782	797,948	4,128	20,043	59,200	222,865	2,218,214	1,365,484
9 46,609	30,787	2,600	.....	10,174	951	15,474	30	145	.....	1,413	33,014	16,589
10 2,129,811	1,519,670	100,700	62,903	214,352	28,285	480,809	.....	348,204	2,699	281,628	1,946,913	1,437,819
11 1,066,031	891,247	29,300	10,783	212,021	9,132	594,147	2,284	4,117	.....	29,463	932,561	329,282
12 72,103	148,981	8,100	9,430	16,784	141	36,417	2,705	32	90	75,282	197,342	160,784
13 1,451,741	1,136,017	97,180	66,124	353,730	14,518	430,179	20,797	1,537	103,365	48,587	1,309,301	864,604
14 2,086,535	6,173,277	84,401	36,579	975,870	64,818	4,575,567	9,931	14,095	230,751	181,265	6,630,848	1,990,463
15 549,292	563,224	18,058	21,693	87,622	1,778	286,604	5,315	85,601	.....	56,553	637,611	349,229
16 7,147,601	9,225,771	247,262	239,851	2,305,198	210,260	5,560,244	103,107	34,572	11,237	524,040	10,479,015	4,718,511

mills, 1; hosiery and knit goods, 3; iron and steel, steel works and rolling mills, 1; iron and steel forgings, 1; labels and tags, 1; leather goods, 2; lime, 1; locomotives, not made by railroad companies, 1; looking-glass and picture frames, 3; marble and stone work, 8; mattresses and spring beds, 4; millinery and lace goods, 1; mineral and soda waters, 8; musical instruments, pianos and organs and materials, 1; optical goods, 1; paint and varnish, 1; scales and balances, 1; slaughtering and meat packing, 2; soap, 1; staturary and art goods, 1; stereotyping and electrotyping, 1; stoves and furnaces, including gas and oil stoves, 1; surgical appliances and artificial limbs, 1; umbrellas and canes, 1; upholstering materials, 1; wall plaster, 1.

WILKES - B A R R E.

1 \$16,010,724	\$12,248,106	\$366,684	\$375,994	\$3,323,385	\$210,762	\$6,222,089	\$45,481	\$342,900	\$112,431	\$1,248,380	\$13,525,957	\$7,093,106
2 278,191	606,908	12,326	14,316	109,071	10,228	407,532	7,929	1,921	.....	43,585	660,353	242,593
3 36,500	50,123	2,879	1,250	30,390	6,326	4,752	1,500	107	.....	2,919	63,242	52,164
4 332,556	376,020	7,200	26,105	76,409	876	212,050	1,750	1,081	.....	50,549	382,717	169,791
5 140,778	319,305	1,929	2,373	9,699	1,560	291,655	663	499	.....	10,931	331,740	38,525
6 99,690	69,009	3,280	4,115	26,351	1,136	31,409	420	380	.....	1,918	79,747	47,202
7 596,838	596,133	43,317	51,153	206,160	10,722	195,694	12,709	1,407	13,643	61,328	765,916	559,500
8 1,389,913	886,747	16,530	10,384	246,779	20,894	385,651	5,400	3,327	87,818	109,964	1,065,554	659,009
9 35,873	35,853	.....	.....	11,392	22	16,247	1,302	3,353	.....	3,537	39,709	23,440
10 13,094,385	9,308,008	279,223	266,298	2,607,143	158,998	4,677,099	13,803	330,825	10,970	963,649	10,136,979	5,300,882

not made by railroad companies, 1; looking-glass and picture frames, 1; lumber and timber products, 6; marble and stone work, 6; mattresses and spring beds, 2; millinery and lace goods, 1; mineral and soda waters, 9; patent medicines and compounds and druggists' preparations, 2; shipbuilding, including boat building, 1; signs and advertising novelties, 1; slaughtering and meat packing, 1; soap, 1; steam packing, 1; stoves and furnaces, including gas and oil stoves, 1; surgical appliances and artificial limbs, 1; wire, 1; wirework, including wire rope and cable, 1.

SUPPLEMENT FOR PENNSYLVANIA.

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

CITY OR BOROUGH.	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 (average number).			Total.	16 and over.		Under 16.					
					Male.	Female.	Total.	16 and over.			Under 16.	Male.	Female.	Male.	Female.			
								Male.	Female.									
1 BEAVER FALLS.....	44	2,450	34	76	129	37	2,180	1,980	137	63	2,570	2,332	163	66	9	5,141		
2 BETHLEHEM.....	49	1,727	54	36	42	12	1,583	879	546	158	1,677	930	579	72	96	3,086		
3 BRADDOCK.....	41	1,218	36	48	83	11	1,040	1,005	7	28	1,208	1,167	8	33	.....	7,332	
4 BRADFORD.....	82	1,650	104	73	120	35	1,318	1,123	162	33	1,443	1,229	177	26	11	3,856		
5 BUTLER.....	61	3,344	102	99	288	32	2,823	2,736	62	25	3,820	3,703	82	31	4	10,405		
6 CARBONDALE.....	34	1,636	29	37	51	16	1,503	1,220	235	48	1,455	1,182	227	10	36	1,407		
7 CARLEISLE.....	50	1,690	148	34	50	24	1,334	835	426	73	1,462	915	466	38	43	1,735		
8 CARNEGIE.....	19	509	17	17	47	6	422	410	10	2	530	515	13	2	.....	1,245	
9 CHAMBERSBURG.....	57	1,631	66	68	114	29	1,364	1,165	149	50	1,499	1,281	163	21	34	3,126		
10 CHESTER.....	128	7,867	102	243	436	100	6,986	5,260	1,488	238	7,420	5,587	1,578	126	129	17,131		
11 COLUMBIA.....	47	2,944	45	48	71	7	2,773	1,966	643	164	3,039	2,155	704	93	87	6,589		
12 CONNELLSVILLE.....	39	1,269	28	52	145	9	1,035	1,005	27	3	1,223	1,189	31	3	.....	4,526	
13 DUBOIS.....	37	1,210	37	54	93	11	1,015	916	91	8	1,016	916	92	1	7	3,199		
14 DUNMORE.....	18	1,423	16	37	51	11	1,308	1,082	170	56	1,358	1,123	177	31	27	1,266		
15 EASTON.....	126	3,769	138	75	104	64	3,388	2,392	891	115	3,697	2,512	924	89	82	5,965		
16 GREENSBURG.....	47	393	50	18	10	5	310	281	27	2	338	307	29	2	.....	738	
17 HAZLETON.....	77	2,998	84	57	134	41	2,682	995	1,357	320	2,883	1,009	1,458	135	221	3,112		
18 HOMESTEAD.....	26	248	17	19	28	13	171	154	13	4	192	173	16	4	.....	890	
19 LANCASTER.....	306	8,981	317	187	401	119	7,957	4,719	2,745	493	8,600	5,104	2,966	233	207	10,037		
20 LEBANON.....	109	6,077	105	99	229	53	5,591	4,288	1,046	257	6,075	4,659	1,135	113	168	21,717		
21 MCKEES ROCKS.....	31	3,903	21	50	211	30	3,591	3,508	54	29	4,231	4,135	61	30	5	8,872		
22 MCKEESPORT.....	68	9,693	58	148	569	72	8,246	7,990	206	50	9,356	9,002	238	49	7	49,036		
23 MAHANAY CITY.....	33	666	44	9	19	4	590	143	398	49	608	147	410	3	45	733		
24 MEADVILLE.....	62	2,500	54	97	150	157	2,048	1,655	379	14	2,085	1,684	387	7	7	2,639		
25 MOUNT CARMEL.....	20	651	28	16	5	2	600	87	364	140	614	90	372	3	149	322		
26 NANTICOKE.....	17	378	15	9	4	2	348	75	179	94	347	75	178	6	88	447		
27 NEW CASTLE.....	82	6,063	73	103	472	76	5,339	5,143	160	36	5,972	5,753	179	38	2	64,097		
28 NORRISTOWN.....	111	4,223	104	123	103	75	3,818	1,940	1,676	202	4,051	2,061	1,774	109	107	5,713		
29 OIL CITY.....	34	1,593	44	85	109	17	1,338	1,311	24	3	1,529	1,408	27	2	2	2,467		
30 PHOENIXVILLE.....	31	2,822	37	47	115	24	2,599	1,934	585	80	2,905	2,161	654	51	39	15,132		
31 PITTSBURGH.....	40	942	39	29	61	21	792	351	390	51	825	365	409	19	32	2,133		
32 PLYMOUTH.....	23	986	21	18	31	8	908	285	518	105	850	267	485	9	89	1,412		
33 POTTSTOWN.....	78	4,123	84	98	247	44	3,650	2,968	602	80	4,179	3,392	686	58	43	17,415		
34 POTTSVILLE.....	91	3,342	100	125	212	33	2,872	2,085	629	158	3,066	2,228	669	64	105	15,202		
35 SHAMOKIN.....	39	1,744	34	31	47	9	1,623	359	1,016	245	1,717	372	1,083	34	228	1,862		
36 SHARON.....	45	3,795	51	121	272	35	3,316	3,293	20	3	4,798	4,766	29	3	.....	27,462	
37 SHENANDOAH.....	29	301	24	18	14	3	242	158	70	8	287	188	90	2	7	1,382		
38 SOUTH BETHLEHEM.....	49	8,469	65	81	325	13	7,985	7,003	804	88	9,659	8,421	1,129	23	86	31,562		
39 SUNBURY.....	39	2,339	42	102	107	19	2,069	1,585	430	54	2,142	1,645	442	29	26	2,835		
40 UNIONTOWN.....	41	492	38	25	91	3	335	325	4	6	390	378	5	6	1	1,020		
41 WARREN.....	72	1,767	70	74	88	40	1,489	1,295	179	15	1,587	1,380	191	14	2	3,960		
42 WASHINGTON.....	75	2,387	68	71	82	40	2,126	1,937	125	64	2,159	1,966	120	54	10	4,216		
43 WEST CHESTER.....	35	1,113	35	29	90	43	916	829	81	6	891	805	80	2	4	934		
44 WILKINSBURG.....	24	291	21	8	9	8	185	181	4	.....	227	222	5	.....	.....	1,016
45 WILLIAMSPORT.....	159	6,634	139	189	375	190	5,641	4,163	1,309	169	6,079	4,400	1,406	131	52	11,713		
46 YORK.....	218	11,530	221	284	439	94	10,492	7,829	2,263	400	11,268	8,408	2,430	218	212	15,344		

STATISTICS OF MANUFACTURES.

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

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

	Capital.	EXPENSES.										Value of products.	Value added by manu- facture.	
		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	\$7,503,172	\$5,064,607	\$149,498	\$137,197	\$1,217,864	\$123,586	\$2,891,573	\$3,720	\$50,171	\$379	\$490,619	\$6,400,338	\$3,385,179	
2	3,300,363	3,283,113	57,769	47,148	593,366	44,493	2,285,949	3,103	49,119	74,649	127,517	3,711,602	1,381,160	
3	5,368,886	4,629,078	75,633	84,717	784,865	134,014	3,213,348	10,938	22,017	-----	308,546	5,694,382	1,747,020	
4	4,225,816	3,480,423	110,378	118,164	654,619	110,508	2,331,830	6,515	16,805	3,641	127,963	3,886,538	1,444,200	
5	16,768,720	10,037,837	194,265	263,176	1,571,300	201,264	7,392,362	4,707	46,208	11,609	352,937	11,058,353	3,464,727	
6	2,307,379	2,228,578	74,808	47,886	635,717	31,322	1,221,799	7,807	29,084	69,394	110,761	2,523,387	1,270,266	
7	2,054,048	2,219,062	84,627	58,900	510,869	30,120	1,400,535	7,282	2,572	-----	2,162	1,065,925	1,065,055	
8	2,371,255	2,908,978	46,066	46,048	275,321	31,674	2,409,419	3,504	40,340	-----	55,106	3,099,445	668,352	
9	3,483,712	2,135,926	105,239	71,428	599,184	48,626	1,120,981	5,621	9,638	4,746	170,463	2,456,035	1,486,428	
10	23,928,262	17,053,434	573,759	390,742	3,392,003	728,471	10,847,917	33,502	104,290	4,742	978,008	19,973,314	7,796,926	
11	3,590,195	4,101,244	64,319	65,309	1,100,641	191,712	2,479,311	5,852	11,031	90,018	177,051	4,807,068	2,136,045	
12	3,274,771	1,798,882	69,410	124,097	570,459	45,022	771,083	7,042	75,913	-----	128,656	1,970,936	1,153,631	
13	2,393,906	1,828,048	80,416	52,694	508,588	35,090	890,692	4,000	51,270	400	206,998	1,890,198	964,386	
14	938,399	1,716,088	85,095	47,213	602,570	25,900	62,926	25,512	67,648	24,371	162,651	1,850,654	1,180,228	
15	7,087,412	5,687,849	145,581	100,659	1,523,797	143,471	3,281,001	26,031	87,815	136,769	242,725	6,915,345	3,490,873	
16	937,074	595,268	22,532	9,800	163,376	24,104	306,336	9,656	13,156	360	45,948	726,268	395,828	
17	5,208,544	4,271,721	122,865	126,887	939,936	62,052	2,639,830	7,397	74,740	40,263	267,651	4,707,025	2,005,040	
18	1,272,845	558,900	24,103	25,250	110,705	12,317	309,423	6,088	11,969	2,076	56,799	659,196	337,250	
19	17,442,636	14,152,001	337,347	475,604	3,235,975	245,565	8,594,240	48,929	334,012	76,211	803,028	15,978,686	7,137,891	
20	12,275,811	10,295,061	183,423	225,906	2,440,506	2,234,358	4,543,692	60,058	55,003	51,926	500,790	11,429,063	4,651,613	
21	10,328,079	8,467,279	120,115	214,619	2,309,492	274,063	5,132,183	8,192	45,085	2,546	360,354	9,786,828	4,379,052	
22	43,432,669	35,473,003	341,043	549,726	6,030,799	2,867,852	24,427,883	11,770	410,848	2,443	830,639	42,494,567	15,198,832	
23	993,610	717,866	7,676	11,890	166,231	17,247	365,657	4,969	52,293	442	91,461	867,576	484,672	
24	2,725,110	3,324,266	140,793	196,567	973,887	62,874	1,662,335	8,246	4,871	-----	284,093	3,558,925	1,843,116	
25	434,653	652,143	15,590	3,716	143,898	5,950	410,486	1,080	2,456	28,863	40,104	785,391	368,955	
26	420,412	402,830	20,104	3,700	120,232	5,777	174,415	2,235	28,981	1,660	45,726	423,093	242,901	
27	2,544,133	36,572,210	255,465	497,632	3,870,179	3,370,043	27,604,047	12,693	116,824	12,876	832,451	38,037,522	7,063,432	
28	6,983,733	6,009,126	226,077	152,053	1,553,004	116,815	3,157,384	38,424	214,184	108,133	443,052	7,413,211	4,139,012	
29	3,847,457	3,645,547	122,084	104,417	903,422	97,273	2,202,428	5,276	32,759	-----	177,888	4,121,892	1,822,191	
30	8,764,839	5,355,202	90,871	144,254	1,179,735	481,197	3,235,726	9,990	26,063	16,609	170,817	5,876,154	2,159,231	
31	2,336,648	1,739,559	37,426	54,643	315,785	34,433	1,032,070	2,334	90,159	43,883	128,826	1,969,452	902,949	
32	1,076,639	22,069	27,180	27,862	280,623	27,761	676,173	3,902	2,325	-----	36,606	1,178,606	474,672	
33	9,961,316	11,746,401	237,630	256,234	1,721,575	1,401,741	7,597,147	45,275	41,222	8,959	436,618	12,505,196	3,506,308	
34	13,981,695	8,424,572	156,311	184,750	1,326,391	285,291	5,641,431	18,660	155,742	21,944	634,052	9,138,122	3,211,400	
35	3,227,194	2,998,314	58,234	63,022	498,902	27,448	2,101,320	4,410	28,138	117,302	99,538	3,544,085	1,415,327	
36	14,649,393	9,824,166	211,571	243,028	2,000,291	716,021	5,967,021	3,896	87,469	614	594,255	9,880,672	3,197,630	
37	1,051,238	752,108	27,094	10,283	133,919	15,775	319,807	3,149	113,076	700	123,305	887,503	551,921	
38	41,120,579	24,370,313	245,093	358,893	4,973,065	3,110,941	12,855,732	17,847	215,561	853	2,592,328	26,417,103	10,450,430	
39	4,767,882	4,239,748	183,344	113,860	1,117,520	56,742	2,171,649	3,867	18,588	381,126	193,052	4,450,159	2,221,768	
40	1,085,736	1,084,895	32,759	129,823	224,588	24,152	354,516	6,464	153,305	4,490	154,798	1,340,565	968,197	
41	5,795,846	5,222,356	149,792	115,977	835,690	182,292	3,493,786	7,660	22,306	1,068	413,787	5,744,321	2,068,243	
42	3,982,523	4,284,888	147,967	116,013	1,119,064	218,313	2,229,003	12,976	68,959	8,808	363,785	4,837,055	2,389,739	
43	2,488,639	2,120,759	42,149	140,201	477,702	26,491	640,225	6,213	5,609	895	781,274	2,145,843	1,479,127	
44	534,048	473,042	11,645	9,195	129,296	10,004	252,261	11,447	3,490	-----	45,704	538,217	275,952	
45	14,070,147	11,720,412	375,067	392,403	2,526,621	263,022	6,856,703	27,686	58,372	243,452	1,036,453	13,347,943	6,288,218	
46	22,418,526	16,092,482	606,434	527,384	4,438,283	282,411	8,583,082	58,876	222,829	180,887	1,793,346	18,622,400	9,756,907	

CHAPTER 5.

MINES AND QUARRIES.

Introduction.—The present chapter contains a complete statement of the statistics of all mining industries, which include all mines, quarries, and wells, in the state of Pennsylvania for the year 1909, as shown by the Thirteenth Census.

A brief explanation of the scope of the census of mining industries and of the terms used, in so far as the usage differs from that followed in the census of manufactures, is presented below in order to prevent any misinterpretation of the statistics.

The explanations here given show the usage of the mining census generally, though some of the special rules have obviously no relation to particular states in which the industries referred to do not exist.

Scope of census.—The Thirteenth Census covered all classes of mines, quarries, and petroleum and gas wells that were in operation during any portion of the year 1909, both those which were producing and those whose operations were confined to development work. Mines, quarries, or wells that were idle during the entire year 1909 were omitted from the canvass. The following operations were likewise omitted from the canvass: Prospecting; the digging or dredging of sand and gravel for the construction of roads and for building operations; the production of mineral waters; and the operation of small bituminous coal banks producing less than 1,000 tons annually.

Where the mineral products are not marketed in their crude condition, but are dressed or washed at the mine or quarry, the statistics of mining cover the entire work of obtaining the crude material and its preparation for the market.

Period covered.—The returns cover the calendar year 1909, or the business year which corresponds most nearly to that calendar year. The statistics cover a year's operations, except for enterprises which began or discontinued business during the year.

Number of operators.—As a rule, the unit of enumeration was the "operator." Every individual, firm, or corporation was required to furnish one report for all mines, quarries, or wells which were operated under the same management or for which one set of books of account was kept. Separate reports were obtained for all properties operated in different states, even where they were owned by the same operator. Likewise, where the operations of one individual, firm, or corporation covered more than one class of mines and quarries, such as coal, iron, limestone, etc., a separate report was received for each industry.

Number of mines, quarries, and wells.—This figure represents the total number of mines and quarries in operation or in the course of development at any time during the calendar year 1909, or the business year that corresponds most nearly to that calendar year, and the number of completed petroleum and natural gas wells in operation on December 31, 1909.

In most mining and quarrying industries the number of mines or quarries varies but little from the number of operators.

Expenses of operation and development.—A certain amount of development work is incidental to the operation of every mine. The expenses reported for producing mines include the cost both of operation and of development work which was done in connection with operation.

Wages.—The amount shown as wages includes only the compensation of regular wage earners hired by the day, week, or month, or under the piecework system.

Supplies and materials.—This item includes the cost of lumber and timber used for repairs, mine supports, track ties, etc.; iron and steel for blacksmithing; rails, frogs, sleepers, etc., for tracks and repairs; renewals of tools and machinery and materials for repairs; and supplies, explosives, oil, etc., as well as the cost of fuel and the rent of power. The schedule called only for the cost of such supplies and materials as had been used during the year covered by the report. Accurate figures, however, could be furnished only in those cases where the operators kept an account of supplies and materials used, or had an inventory made of all in stock at the beginning and at the end of the year. Such a system of accounting is far from general among mine operators, and there is reason to believe that in many cases the reported cost of supplies and materials covered all purchased during the year rather than those used during the year. The crude product of some operators was purchased by others for further dressing or refining; the cost of such materials is shown separately in the general table.

Capital.—The census schedule required every operator to state the total amount of capital invested in the enterprise on the last day of the business year reported, as shown by his books. There is, however, a great diversity in the methods of bookkeeping in use by different operators. As a result, the statistics for capital lack uniformity. Some of the figures reported apparently represent capital stock at face value; others include large investments in mineral lands which are not at present being actively mined, but are held in reserve; still others may include expenditures for unproductive mining ventures in no way related to the operations carried on during the census year.

Persons engaged in mining industries.—The statistics of the number of operators and officials, clerks, and wage earners, are based on the returns for December 15, or the nearest representative day. The reported number of wage earners includes overseers and foremen performing work similar to that of the men over whom they have charge; those whose duties are wholly supervisory are classed as superintendents and managers. Because of the common practice of shutting down mines at frequent intervals, it is impossible to ascertain with any satisfactory degree of accuracy the average number of employees—that is, the number who, if continuously employed, would be required to produce the actual output of the year.

Value of products.—Statistics of the value of mineral products were obtained by the Bureau of the Census in cooperation with the United States Geological Survey, but the two bureaus follow different methods in presenting these statistics. The Geological Survey shows separately the value of each mineral product, whereas the Bureau of the Census presents the value of products of each mining industry. The value of products given for a mining industry often includes the value of some products not covered by the industry designation. The crude product of metalliferous mines may include varying combinations of metals, such as gold, silver, copper, lead, zinc, and iron. Similarly, the total value of all products of the granite quarries is not identical with the value of the total output of granite, but may include the value of some marble or other stone quarried in connection with the principal product.

The value of products for 1909 in most cases represents the value of the products marketed during that year, not the value of those mined during that year.

MINING IN PENNSYLVANIA.

Summary.—Statistics for all mining enterprises in the state of Pennsylvania are presented in Table 7, which gives statistics for all industries combined and for producing enterprises separately in all cases where the statistics could be given without disclosing the operations of an individual enterprise. Statistics for nonproducing enterprises are also given separately from producing enterprises.

Pennsylvania holds the first place among the mining states. In 1909 its producing mining industries gave employment to 405,685 persons, or more than one-third of all persons employed in all mining enterprises in the United States. The gross value of the mining products of Pennsylvania in that year was \$349,059,786. Deducting from this amount \$3,099,183, the cost of bituminous coal sold by some operators and used as material by others, and the value of the natural gas purchased and resold, leaves a net value of products of \$345,960,603, which constituted over one-fourth of the total for the United States. The expenses of operation and development were reported as \$300,977,955, the principal elements of which were: Salaries and wages, \$210,531,202; supplies and materials (including fuel and rent of power), \$54,697,444; royalties and rent of mines, \$15,379,127.

The principal industry of the state was coal mining, which gave employment to 357,671 wage earners, of whom nearly half were in the anthracite mines. Pennsylvania is practically the sole producer of anthracite coal. The net value of the combined product of anthracite and bituminous coal in 1909 was \$296,396,507, of which \$148,957,894 represented the value of anthracite and \$147,438,613 that of bituminous coal. Of the latter amount, \$103,287,875 represented the value of coal sold as such, \$43,937,062 the value of coke made at the mines, and \$213,676 the value of other products. The net value of the products of petroleum and natural gas wells was \$36,126,096, which, together with the value of coal, constituted 96.1 per cent of the total net value of mining products in the state.

In the production of traprock and marble the expenses of operation and development exceeded the value of the products. This was due, in part, to unprofitable mining ventures and, in part, to expenditures for development work resulting in permanent improvements to the mining properties.

Of the total expenses of operation and development of producing mines, quarries, and wells, exclusive of the cost of purchased coal and natural gas, in Pennsylvania in 1909 (\$297,878,772), 70.7 per cent represented salaries and wages; 17.3 per cent supplies, materials, fuel, and rent of power; 5.2 per cent royalties and rent of mines; 2 per cent contract work; 1.9 per

cent taxes; and 2.9 per cent rent of offices and other miscellaneous expenses. The distribution of the different elements of expenses in the anthracite mines is not widely different from that in the bituminous mines, and the expenses for these two classes combined substantially determine the total for all mining industries. The distribution of the expenses in the petroleum and natural gas industry is quite different from that in the coal mining industry, the proportion for salaries and wages being much lower, namely, 28.3 per cent of the total expenses (exclusive of the cost of purchased gas), whereas the proportion for contract work is much higher, namely, 17.4 per cent.

Character of organization.—Table 1 classifies the producing mining operations of the state under form of organization, distinguishing corporations from individual owners and firms, while Table 2 gives further details for incorporated enterprises distinguished from those which are unincorporated.

Table 1

PRODUCING ENTERPRISES: 1909

INDUSTRY AND CHARACTER OF ORGANIZATION.	Number of operators.	Number of wage earners.	Value of products.		Per cent distribution.		
			Total.	Per operator.	Operators.	Wage earners.	Value of products.
All industries..	4,851	384,833	\$349,059,786	\$71,956	100.0	100.0	100.0
Individual.....	2,093	10,843	9,824,888	4,905	41.3	2.8	2.8
Firm.....	1,966	20,310	20,260,914	10,306	40.5	5.3	5.8
Corporation.....	830	348,760	311,860,234	375,723	17.1	90.6	89.3
Other.....	52	4,920	7,123,750	136,995	1.1	1.3	2.0
Anthracite coal.....	189	173,263	148,957,894	788,137	100.0	100.0	100.0
Individual.....	37	308	283,018	7,649	19.6	0.2	0.2
Firm.....	48	7,915	6,547,823	136,413	25.4	4.6	4.4
Corporation ¹	104	165,040	142,127,053	1,366,606	55.0	95.3	95.4
Bituminous coal.....	689	184,408	147,466,417	214,030	100.0	100.0	100.0
Individual.....	245	6,262	4,027,827	16,440	35.6	3.4	2.7
Firm.....	145	7,787	5,317,263	36,671	21.0	4.2	3.6
Corporation.....	206	167,743	135,517,857	457,831	43.0	91.0	91.9
Other.....	3	2,616	2,603,470	867,823	0.4	1.4	1.3
Petroleum and natural gas..	3,030	7,397	39,197,475	12,936	100.0	100.0	100.0
Individual.....	1,204	740	3,621,597	3,003	39.7	10.0	9.2
Firm.....	1,579	1,047	5,933,702	3,758	52.1	14.2	15.1
Corporation.....	207	4,591	26,581,488	128,413	6.8	62.1	67.8
Other.....	40	1,610	3,060,688	76,517	1.3	13.8	7.9

¹ Includes 2 estates.

Of the total number of operators in all industries combined, 17.1 per cent were corporations and 81.8 per cent were individuals and firms. The producing enterprises controlled by corporations employed 90.6 per cent of all wage earners, and contributed 89.3 per cent of the total value of all mining products. In anthracite coal mining more than one-half of all operators were incorporated; they employed 95.3 per cent of all wage earners and reported 95.4 per cent of the value of the products of all anthracite coal mines. In bituminous coal mining more than two-fifths of all

operators were incorporated; they employed 91 per cent of all wage earners and contributed 91.9 per cent of the total value of products. In the petroleum and natural gas industry only 6.8 per cent of all operators were incorporated, but they employed 62.1 per cent of all wage earners engaged in the industry and contributed 67.8 per cent of the products of the industry.

	Incorporated.	Unincorporated.
Number of operators.....	830	4,021
Number of mines and quarries.....	1,588	1,412
Number of wells.....	20,438	39,342
Proprietors and firm members.....		9,130
Number performing manual labor.....		2,113
Salaried employees:		
Officers of corporations.....	933	
Superintendents and managers.....	2,836	558
Clerks and other salaried employees.....	6,806	589
Wage earners, Dec. 15, 1909, or nearest representative day.....	348,760	30,973
Capital.....	\$764,703,344	\$101,503,864
Expenses of operation and development.....	272,854,850	28,123,105
Salaries—		
Officers of corporations.....	2,483,345	
Superintendents and managers.....	4,221,581	682,079
Clerks and other salaried employees.....	5,247,722	422,613
Wages.....	181,386,060	16,087,802
Royalties and rent of mines.....	12,814,088	2,565,039
Taxes.....	5,403,274	296,192
Supplies and miscellaneous expenses.....	58,324,038	7,944,939
Cost of coal purchased for material and natural gas purchased and resold.....	2,974,742	124,441
Value of products.....	311,850,234	37,209,552

Size of enterprises.—In Table 3 the producing enterprises are classified according to the number of wage earners employed per enterprise or operating unit. This table shows that about one-sixth of all enterprises were operated without wage earners, all the work being performed by the proprietors, and that about one-fourth were operated by contractors who furnished all necessary labor, or by men who gave only a part of their time to the enterprise. The latter two methods are most common in the petroleum and natural gas industry, where the drilling of new wells is done mostly by contract, while very little labor is required to operate the wells. Over one-fourth of all enterprises were operated with only from one to five wage earners each, and the wage earners employed in these enterprises constituted only 0.8 per cent of the total number in the mining industries. On the other hand, more than two-thirds of all wage earners were employed in 206 enterprises with more than 500 wage earners each, although these enterprises constituted only 3.9 per cent of the total number. In coal mining there were only 15 enterprises which were operated without wage earners or by contract. In this industry about five-sixths of all wage earners in anthracite mines and about five-eighths of those in bituminous mines were employed in enterprises with more than 500 wage earners each. In the petroleum and natural gas industry over two-thirds of all enterprises were operated without regular wage earners, and over one-fourth had only from one to five wage earners. On

the other hand, three enterprises with over 500 wage earners each employed over 3,000 regular wage earners; that is, more than two-fifths of all the regular wage earners employed in the industry.

INDUSTRY AND WAGE EARNERS PER ENTERPRISE.	PRODUCING ENTERPRISES: 1909			
	Enterprises.		Wage earners.	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	5,256	100.0	384,833	100.0
No wage earners.....	532	10.1	36.8	0.01
Contract work and part-time employees.....	1,320	25.1	25.1	0.01
1 to 5.....	1,433	27.3	2,944	0.8
6 to 20.....	531	10.1	5,857	1.5
21 to 50.....	357	6.8	11,906	3.1
51 to 100.....	246	4.7	18,149	4.7
101 to 500.....	331	6.3	78,956	20.5
501 to 1,000.....	134	2.5	95,395	24.8
Over 1,000.....	72	1.4	171,536	44.6
Anthracite coal	359	100.0	173,263	100.0
No wage earners.....	6	1.7	.....	.....
Contract work.....	2	0.6	.....	.....
1 to 5.....	40	11.1	105	0.1
6 to 20.....	37	10.3	434	0.3
21 to 50.....	31	8.0	1,003	0.6
51 to 100.....	30	8.4	2,211	1.3
101 to 500.....	75	20.9	24,042	13.9
501 to 1,000.....	94	26.2	66,300	38.3
Over 1,000.....	44	12.3	79,168	45.7
Bituminous coal	923	100.0	184,408	100.0
No wage earners.....	5	0.5	.....	.....
Contract work.....	2	0.2	.....	.....
1 to 5.....	144	15.6	468	0.3
6 to 20.....	182	19.7	1,994	1.1
21 to 50.....	149	16.1	5,257	2.9
51 to 100.....	157	17.0	11,569	6.3
101 to 500.....	221	23.9	48,428	26.3
501 to 1,000.....	36	3.9	25,880	14.0
Over 1,000.....	27	2.9	90,792	49.2
Petroleum and natural gas	3,030	100.0	7,397	100.0
No wage earners.....	751	24.8	.....	.....
Contract work and part-time employees.....	1,295	42.7	.....	.....
1 to 5.....	894	29.2	1,434	19.4
6 to 20.....	68	2.2	643	8.7
21 to 50.....	19	0.6	631	8.5
51 to 100.....	3	0.1	227	3.1
101 to 500.....	7	0.2	1,269	17.2
Over 500.....	3	0.1	3,193	43.2

Persons employed in mining.—Of the 405,685 persons engaged in the producing mining industries of Pennsylvania in 1909, 13,457 were proprietors and officials, 7,395 clerks, and 384,833 wage earners (number reported December 15, 1909, or the nearest representative day). Of the wage earners, 110,346 were employed above ground and 274,487 below ground. No women were reported as employed, but there were 4,506 boys under 16 years of age.

Prevailing hours of labor.—In Table 4 all producing enterprises reporting hours of labor, except those employing no wage earners and those operated exclusively by contract work and part-time employees, have been classified according to the prevailing hours of labor in each enterprise or operating unit. Petroleum and natural gas wells are not included in this table because the lack of regularity in the number of hours worked per day in a large number of enterprises rendered such classification impracticable. The table shows the percentage of the total number of enterprises falling in each group, and also a per cent distribution in which each enterprise has been given a

weight according to the total number of wage earners employed December 15, 1909, or the nearest representative day. It should be borne in mind that this latter distribution does not show the exact proportion of the total number of wage earners working the specified number of hours per day, since in some cases, a part of the employees worked a greater or less number of hours than those generally prevailing in the enterprise. The table shows that, while in all industries combined there are more enterprises which work 10 hours per day than any other number, yet when the size of the enterprises, weighted according to the number of wage earners, is taken into account the nine-hour day appears the most prevalent, this fact being chiefly due to the predominance of the nine-hour day in the anthracite coal industry.

INDUSTRY AND HOURS PER DAY.	PRODUCING ENTERPRISES: 1909		
	Enterprises.		Per cent distribution of enterprises weighted according to number of wage earners.
	Number.	Per cent distribution.	
All industries	12,114	100.0	100.0
8 hours and under.....	627	29.7	26.5
9 hours.....	634	30.0	57.6
10 hours.....	351	40.3	15.5
12 hours.....	2	0.1	0.4
Anthracite coal	350	100.0	100.0
8 hours and under.....	12	3.4	1.7
9 hours.....	289	82.6	98.1
10 hours.....	48	13.7	0.3
12 hours.....	1	0.3	(²)
Bituminous coal	915	100.0	100.0
8 hours and under.....	537	61.2	52.5
9 hours.....	185	20.2	23.6
10 hours.....	142	15.5	23.2
12 hours.....	1	0.1	0.8

¹ Exclusive of petroleum and natural gas and of 1 anthracite coal mine, 1 bituminous coal mine, 2 bluestone quarries, 3 slate quarries, and 1 limestone quarry for which number of hours was not reported.

² Less than one-tenth of 1 per cent.

Engines and power.—Table 5 presents for all industries combined and for anthracite coal mines, bituminous coal mines, and petroleum and natural gas wells separately, detailed statistics of the engines and power employed.

About nine-tenths of the total primary power employed in Pennsylvania mining enterprises is generated by steam engines and most of the remainder by gas and gasoline engines. A considerable part of this primary power, however, is used in operating electric motors for the more direct application of power. In the bituminous coal mines the horsepower of electric motors (including those run by purchased power and by power generated by the same enterprises) was equal to more than one-fourth of the aggregate primary power. Most of the gas or gasoline engines are used in connection with petroleum and natural gas wells.

CHARACTER OF POWER.	PRODUCING ENTERPRISES: 1909				
	Total.	Coal.		Petroleum and natural gas.	All other.
		Anthracite.	Bituminous.		
Primary power:					
Aggregate horsepower.....	1,613,806	676,128	404,654	478,946	159,078
Owued.....	1,603,999	674,718	393,912	478,846	156,523
Steam engines—					
Number.....	30,388	7,567	2,993	18,706	1,122
Horsepower.....	1,460,514	673,946	393,371	339,194	54,003
Gas or gasoline engines—					
Number.....	8,180	25	50	8,062	43
Horsepower.....	143,452	772	541	139,652	2,487
Electric motors operated by purchased current—					
Number.....	412	32	308	1	71
Horsepower.....	14,807	1,410	10,742	100	2,555
Electric motors run by current generated by enterprise using:					
Number.....	4,851	1,152	3,617	42	40
Horsepower.....	172,310	46,088	115,195	406	10,621

¹ Includes 2 water wheels with a total of 33 horsepower.

Comparison of mining industries: 1902-1909.—In order to make comparisons between 1909 and 1902 it is necessary to omit from the 1902 figures, as given in the mines and quarries report for that year, statistics for the production of cement and enterprises operated by governmental institutions; to omit from the 1909 figures, as they appear in other tables in this chapter, statistics for the manufacture of coke at bituminous coal mines; and to add to the 1909 statistics, figures for the production of lime, which were omitted from the census of mines and quarries in 1909.

The increase in the total amount paid in wages and salaries is equal to 68.3 per cent, while the value of products shows an increase of only 46.3 per cent. It must be borne in mind that the value assigned to coal at the mine and to petroleum at the well is arbitrary in many cases, the products being either consumed by the owners or affiliated concerns or transported by such owners or affiliated concerns to markets, the division of the ultimate value received between the mine and the transportation system being largely a matter of form.

Such items as are comparable for the two years are presented in Table 6.

	PRODUCING ENTERPRISES.		
	1900	1902	Per cent of increase.
Wages and salaries.....	\$203,684,971	\$121,051,866	68.3
Supplies and materials.....	\$51,202,196	\$29,062,686	76.2
Royalties and rent of mines.....	\$15,358,322	\$10,722,810	43.3
Contract work.....	\$5,632,791	\$5,595,074	0.6
Value of products.....	\$331,376,718	\$226,641,178	46.2
Primary horsepower.....	1,627,488	1,114,526	46.0

¹ Exclusive of amount paid to miners compensated by a share of the product and also of the wages of part-time employees for the petroleum and natural gas industry, which are included under "Contract work," in Table 7.

Duplication between manufactures and mining.—In a number of industries some of the operators subjected the products obtained to certain manufacturing processes on the premises before marketing. These enterprises have been included in the statistics both for manufactures and mining. As a result of this fact the combined value of products for the manufacturing and mining industries in Pennsylvania involves a duplication of \$48,301,454. Of this amount, \$44,117,871 represented the value of coke and by-products of coke ovens duplicated, \$3,491,558 the value of slate, and \$692,025 the combined value of bluestone, granite, graphite, limestone, marble, sandstone, and trap-rock. The total value of all coke produced in the

state, both at mines and at plants not connected with mines, as shown by the chapter on manufactures, was \$51,816,000. Thus the value of the coke produced at mines and included in both reports represents 85.1 per cent of the total production. In the slate industry the value of the products duplicated represented substantially the entire production. Of the total value of slate produced (\$3,492,026), products valued at only \$468 were marketed without being subjected to some form of treatment at the quarry before marketing. Among the various forms in which the slate was marketed by the quarry operators were the following: Roofing slate, blackboards, school slates, grave-stones, etc.

Table 7		PRODUCING MINES, QUARRIES, AND WELLS.						
		Aggregate.	Total.	Coal.			Petroleum and natural gas.	Iron.
				Total.	Anthracite.	Bituminous.		
1	Number of operators.....	4,882	4,851	878	189	689	3,030	15
2	Number of mines, quarries, and wells.....	62,818	62,780	1,929	420	1,509	59,780	19
3	Capital.....	\$368,149,512	\$306,207,208	\$647,636,069	\$240,713,318	\$400,922,751	\$161,796,479	\$7,124,947
4	Expenses of operation and development.....	\$301,397,275	\$300,977,955	\$267,271,507	\$139,110,444	\$128,161,063	\$21,998,980	\$377,583
5	Services:							
6	Salaried officers of corporations, superintendents, and managers.....	\$7,404,731	\$7,387,005	\$5,828,428	\$2,311,003	\$3,517,425	\$748,538	\$17,841
7	Clerks and other salaried employees.....	\$5,674,852	\$5,670,335	\$4,908,980	\$2,261,456	\$2,647,494	\$455,702	\$4,408
8	Wage earners.....	\$197,681,366	\$197,473,862	\$185,866,043	\$92,169,906	\$93,696,137	\$144,712	\$167,033
9	Miscellaneous:							
10	Supplies.....	\$45,268,642	\$45,175,071	\$38,459,551	\$23,472,809	\$14,986,742	\$5,032,525	\$37,340
11	Cost of coal purchased for material and natural gas purchased and resold.....	\$3,099,183	\$3,099,183	\$27,804		\$27,804	\$3,071,370	
12	Fuel and rent of power.....	\$6,423,867	\$6,423,190	\$5,491,958	\$3,189,279	\$2,302,679	\$399,027	\$23,460
13	Royalties and rent of mines.....	\$15,385,640	\$15,379,127	\$11,966,353	\$7,969,785	\$3,996,568	\$2,934,063	\$3,084
14	Taxes.....	\$5,707,325	\$5,699,466	\$5,022,428	\$2,677,853	\$2,344,675	\$521,430	\$19,415
15	Contract work.....	\$6,010,603	\$5,976,032	\$2,488,677	\$1,701,514	\$787,183	\$3,297,185	\$30,994
16	Rent of offices and other sundry expenses.....	\$8,738,060	\$8,694,684	\$7,211,285	\$3,356,809	\$3,854,476	\$1,394,413	\$4,008
17	Value of products.....	\$349,059,786	\$349,059,786	\$206,424,311	\$148,957,894	\$147,466,417	\$39,137,475	\$789,296
18	Persons engaged in industry.....	406,274	406,685	368,355	177,753	190,602	15,451	764
19	Proprietors and officials.....	13,574	13,457	4,306	1,310	2,996	7,515	28
20	Proprietors and firm members.....	9,234	9,130	996	188	868	7,087	1
21	Number performing manual labor.....	2,119	2,113	255	72	183	1,482	1
22	Salaried officers of corporations.....	935	933	638	171	467	140	4
23	Superintendents and managers.....	3,405	3,394	2,672	951	1,721	288	12
24	Clerks and other salaried employees.....	7,398	7,305	6,378	3,180	3,198	539	10
25	Wage earners, Dec. 15, 1909, or nearest representative day.....	385,302	384,833	357,671	173,263	184,408	7,397	726
26	Above ground.....	110,520	110,346	83,471	48,670	34,801	7,397	630
27	Below ground.....	274,782	274,487	274,200	124,593	149,607		100
28	Men 16 years of age and over.....	380,796	380,327	353,294	170,024	183,270	7,396	714
29	Engineers, firemen, mechanics, etc.....	26,181	26,134	20,331	12,248	8,083	4,317	161
30	Above ground.....	22,115	22,072	16,277	9,728	6,549	4,317	159
31	Below ground.....	4,066	4,062	4,054	2,520	1,534		2
32	Miners, miners' helpers, quarrymen, and stonecutters.....	218,976	218,712	206,089	83,030	123,059		478
33	Above ground.....	12,417	12,376					400
34	Below ground.....	206,559	206,336	206,089	83,030	123,059		73
35	All other employees.....	135,639	135,481	126,874	74,746	52,128	3,079	75
36	Above ground.....	72,342	72,252	63,677	35,716	27,961	3,079	49
37	Below ground.....	63,297	63,229	63,197	39,030	24,167		26
38	Boys under 16 years of age.....	4,506	4,506	4,377	3,239	1,138		12
39	Number of wage earners employed on the 15th day of each month:							
40	January.....	354,317	354,044	335,394	172,679	162,715	5,993	533
41	February.....	354,652	354,235	335,078	172,417	163,261	5,705	508
42	March.....	357,384	357,046	336,671	172,906	163,765	5,761	437
43	April.....	350,031	349,667	326,748	167,923	158,620	6,004	513
44	May.....	352,462	352,127	327,909	168,007	159,902	6,369	468
45	June.....	359,431	359,067	333,604	168,715	164,889	6,853	491
46	July.....	360,966	360,583	334,800	167,166	167,634	6,904	508
47	August.....	361,639	361,221	335,158	165,486	169,672	7,234	531
48	September.....	364,219	363,744	337,508	165,760	171,748	7,197	509
49	October.....	371,507	371,075	344,795	169,729	175,066	7,510	648
50	November.....	374,692	374,256	348,725	170,358	178,367	7,738	637
51	December.....	375,446	375,012	351,059	168,943	182,146	7,365	606
52	Land controlled, acres.....	5,362,369	5,352,313	2,489,842	464,274	1,965,568	2,824,122	18,166
53	Owned.....	2,301,707	2,296,908	1,921,520	316,767	1,604,753	308,540	13,300
54	Held under lease.....	3,072,291	3,067,094	520,011	159,196	360,815	2,515,582	4,866
55	Mineral and oil land.....	4,862,448	4,852,594	1,947,936	278,499	1,673,537	2,824,122	12,069
56	Owned.....	1,869,847	1,865,189	1,505,025	183,044	1,321,081	308,540	7,231
57	Held under lease.....	3,003,576	2,987,380	452,911	101,430	351,556	2,515,582	4,838
58	Timber land.....	119,398	119,392	116,424	71,851	38,573		6,065
59	Other land.....	380,463	380,327	372,382	118,924	253,458		4
60	Primary horsepower.....	1,621,172	1,618,806	1,060,782	676,128	404,654	478,948	3,971

¹ Includes operators as follows: Millstones and chasers, 1; peat, 1; talc and soapstone, 1.
² Includes operators as follows: Anthracite coal, 6; bituminous coal, 4; graphite, 1; iron, 1; marble, 1; petroleum and natural gas, 14; slate, 4.
³ Includes \$28,201,009 which could not be distributed among the several industries. Exclusive of capital which could not be distributed by states because it was reported in one lump sum by operators having mining investments in two or more states.
⁴ In some cases the same operator conducted two or more enterprises producing different kinds of products, all enterprises being managed through one central administrative office. The total office expenses were accordingly apportioned among the several industries in proportion to the total expenses of each, and the estimated amounts of such administrative expenses were added to "Sundry expenses" for each industry. In the totals for all enterprises, however, the expenses appear under the proper headings. The amounts included in "Rent of offices and other sundry expenses" for individual industries and properly distributed in the total for all industries are as follows: Salaried officers of corporations, superintendents, and managers, \$234,834; clerks and other salaried employees, \$111,977; taxes, \$66,117; and contract work, \$5,308.

STATISTICS OF MINES AND QUARRIES.

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MINING INDUSTRIES: 1909.

PRODUCING MINES, QUARRIES, AND WELLS—continued.												
Limestone.	Slate.	Sandstone.	Bluestone.	Traprock.	Granite.	Marble.	Clay (sold as such).	Graphite.	Mineral pigments.	Feldspar.	All other. ¹	Non-producing mines, quarries, and wells. ²
311	98	172	205	22	43	4	45	7	10	6	5	31
362	112	192	216	25	52	4	56	7	13	7	6	38
\$5,260,913	\$6,708,967	\$3,620,203	\$552,056	\$1,788,458	\$793,459	\$942,350	\$960,298	\$485,795	\$163,400	\$103,900	\$68,905	\$1,042,304
\$3,969,778	\$3,407,014	\$1,382,152	\$479,431	\$785,492	\$489,899	\$197,971	\$409,800	\$80,844	\$49,878	\$56,525	\$21,101	\$419,320
\$137,570	\$194,642	\$107,183	\$24,700	\$17,274	\$19,761	\$4,920	\$25,825	\$7,962	\$5,620	\$9,997	\$1,000	\$17,726
\$61,920	\$61,149	\$24,712	\$2,200	\$7,344	\$7,729	\$14,640	\$8,226	\$336	\$600	\$412		\$4,517
\$2,590,740	\$2,399,195	\$834,205	\$317,041	\$331,048	\$336,329	\$142,633	\$243,446	\$43,096	\$13,859	\$28,457	\$16,025	\$207,504
\$648,094	\$284,558	\$179,854	\$62,556	\$288,845	\$54,170	\$10,854	\$46,790	\$8,675	\$2,926	\$7,450	\$883	\$93,571
\$133,856	\$189,610	\$66,502	\$11,615	\$30,549	\$16,513	\$16,370	\$27,269	\$6,197	\$4,338	\$5,098	\$828	\$3,677
\$149,233	\$196,302	\$31,412	\$26,242	\$22,779	\$17,514	\$600	\$23,639	\$3,549	\$2,883	\$708	\$775	\$6,513
\$19,724	\$20,119	\$11,130	\$2,897	\$4,823	\$4,545	\$1,954	\$2,720	\$1,185	\$476	\$490	\$97	\$7,859
\$63,447	\$0,025	\$28,581	\$1,134	\$5,164	\$1,406		\$3,353	\$4,060	\$17,758			\$34,571
\$165,194	\$52,414	\$98,573	\$31,046	\$77,666	\$31,932	\$6,000	\$28,522	\$5,853	\$1,418	\$4,003	\$593	\$43,382
\$4,733,819	\$3,492,026	\$1,549,508	\$656,120	\$639,754	\$603,089	\$186,037	\$496,310	\$116,115	\$68,011	\$57,901	\$50,014	
7,732	6,036	2,802	1,310	751	871	274	763	141	77	102	55	589
462	285	278	313	24	67	7	74	9	11	9	7	117
336	120	173	285	12	42	3	49		7	3	5	104
110	25	41	171	5	12		7	2			2	6
25	50	22	5	2	11		2	4	1	2		2
101	115	83	23	10	14		23	5	3	4	2	11
91	115	50	7	13	21		12	2	1	2		3
7,179	5,636	2,474	990	715	783	251	677	130	65	91	48	469
7,179	5,636	2,474	990	715	783	251	530	118	43	91	48	174
7,173	5,558	2,459	990	715	783	251	147	12	22			295
821	493	210	85	116	64	19	661	139	65	99	48	469
321	493	210	35	116	64	19	40	15	8	3	1	47
			35	116	64	19	38	11	8	3	1	43
							2	4				4
5,119	2,941	1,364	771	529	645	183	398	35	44	84	32	264
5,119	2,941	1,364	771	529	645	183	259	27	22	84	32	41
1,733	2,124	885	184	70	74	49	139	8	22			223
1,733	2,124	885	184	70	74	49	233	80	13	3	15	158
							217	80	13	3	15	90
							6					68
6	78	15					16			1		
4,239	4,701	1,299	247	373	447	145	509	51	34	44	35	273
4,395	4,676	1,301	249	375	502	185	556	65	37	59	33	327
4,816	5,092	1,592	517	531	606	239	559	62	43	74	41	338
5,325	5,397	2,244	913	553	886	285	576	68	49	61	45	364
5,070	5,406	2,426	944	590	915	301	564	91	60	62	52	335
6,282	5,592	2,440	1,004	722	913	346	569	94	68	60	50	364
6,476	5,549	2,481	972	766	915	344	538	109	54	75	32	418
6,409	5,550	2,533	953	796	811	301	556	98	54	86	31	418
6,856	5,565	2,488	897	770	838	341	547	70	45	87	33	476
6,761	5,555	2,368	816	702	784	349	563	68	49	61	47	432
6,509	5,318	2,191	693	637	674	323	581	72	44	67	47	436
6,204	5,293	1,675	396	671	561	251	605	67	52	39	48	434
21,535	3,083	28,743	9,545	6,239	978	157	8,085	481	574	687	84	9,996
10,122	1,621	24,154	7,933	2,969	797	142	4,723	383	412	177	55	4,790
11,413	1,432	4,589	1,552	3,270	181	15	3,369	98	162	510	29	5,197
18,841	2,032	25,168	7,334	6,010	653	157	6,778	446	372	572	84	9,854
7,024	1,470	21,484	6,062	2,740	472	142	3,416	356	210	62	65	4,658
10,917	1,462	3,684	1,272	3,270	181	15	3,362	90	162	510	29	5,196
147	5	594	1,691		300		542	13	186	25		6
2,547	146	2,981	1,120	229	25		765	22	16	90		136
13,811	20,127	8,834	1,468	4,167	2,277	860	2,022	946	271	183	140	2,366

¹ The following numbers of persons, which could not be distributed among the several industries, are included under the proper headings in the totals for all enterprises: Aggregate, 201; salaried officers of corporations, 27; superintendents and managers, 35; and clerks and other salaried employees, 139.

² In the anthracite coal industry 13 boys were employed below ground and in the bituminous coal industry 847.

³ Exclusive of 11,089 acres reported both in acres owned and acres held under lease in anthracite coal.

⁴ Exclusive of 10,975 acres reported both in acres owned and acres held under lease in anthracite coal.

⁵ Exclusive of 714 acres reported both in acres owned and acres held under lease in anthracite coal.