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DEPARTMENT OF COMMERCE AND LABOR

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THIRTEENTH CENSUS OF THE UNITED STATES  
TAKEN IN THE YEAR 1910

VOLUME IX

MANUFACTURES

1909

REPORTS BY STATES, WITH STATISTICS  
FOR PRINCIPAL CITIES

PREPARED UNDER THE SUPERVISION OF WILLIAM M. STEUART  
CHIEF STATISTICIAN FOR MANUFACTURES



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1912

## REPORTS OF THE THIRTEENTH CENSUS.

### POPULATION:

Volume I.—GENERAL REPORT AND ANALYSIS.

Volume II.—REPORTS BY STATES, WITH STATISTICS FOR COUNTIES, CITIES, AND OTHER CIVIL DIVISIONS—ALABAMA TO MONTANA.

**Department of Commerce and Labor**

BUREAU OF THE CENSUS

Washington

## ANNOUNCEMENT CONCERNING THIRTEENTH CENSUS REPORTS.

DECEMBER 2, 1912.

Of the final census reports listed on page 3, only Volume IX has thus far been issued.

The volumes numbered I to XI, constituting the complete reports of the census, are being issued in a very limited edition, intended chiefly for libraries, institutions, and special students of statistics.

A condensed report, entitled Abstract of the Census, will be printed in much larger edition, intended for more general distribution, and will be prepared in such a way as to meet the need of most persons desiring information concerning the results of the census. It will contain in tabular form all important census statistics for the United States as a whole and for each state and principal city, together with a brief text explaining the figures and their meaning. The Abstract will therefore be a condensation of the whole census report, both tables and text, and not as heretofore, merely a compilation of tables.

The Abstract will be issued in special editions for each of the several states, each edition containing a supplement giving the detailed statistics for counties, cities, and other civil divisions of the state to which it relates, designed to meet the needs of persons resident in that state or especially interested in it. The supplement will contain also both text and tables.

As a compact reference work of general and local interest the Abstract will be more convenient for most persons than the voluminous final reports.

## REPORTS OF THE THIRTEENTH CENSUS.

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### POPULATION:

- Volume I.—GENERAL REPORT AND ANALYSIS.
- Volume II.—REPORTS BY STATES, WITH STATISTICS FOR COUNTIES, CITIES, AND OTHER CIVIL DIVISIONS—ALABAMA TO MONTANA.
- Volume III.—REPORTS BY STATES, WITH STATISTICS FOR COUNTIES, CITIES, AND OTHER CIVIL DIVISIONS—NEBRASKA TO WYOMING; ALASKA, HAWAII, AND PORTO RICO.
- Volume IV.—OCCUPATION STATISTICS.

### AGRICULTURE:

- Volume V.—GENERAL REPORT AND ANALYSIS.
- Volume VI.—REPORTS BY STATES, WITH STATISTICS FOR COUNTIES—ALABAMA TO MONTANA.
- Volume VII.—REPORTS BY STATES, WITH STATISTICS FOR COUNTIES—NEBRASKA TO WYOMING; ALASKA, HAWAII, AND PORTO RICO.

### MANUFACTURES:

- Volume VIII.—GENERAL REPORT AND ANALYSIS.
- Volume IX.—REPORTS BY STATES, WITH STATISTICS FOR PRINCIPAL CITIES.
- Volume X.—REPORTS FOR PRINCIPAL INDUSTRIES.

### MINING:

- Volume XI.—MINES AND QUARRIES.
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## LETTER OF TRANSMITTAL.

DEPARTMENT OF COMMERCE AND LABOR.

BUREAU OF THE CENSUS,

*Washington, D. C., December 2, 1912.*

SIR:

I have the honor to transmit herewith Volume IX of the Reports of the Thirteenth Decennial Census, relating to manufactures.

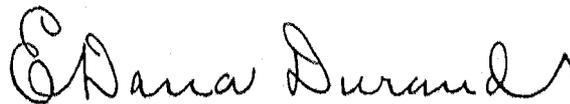
The census of manufactures was taken in conformity with "An act authorizing the taking of the Thirteenth and subsequent Decennial Censuses," approved July 2, 1909. The statistics were collected during the year 1910, but relate in general to the year ending December 31, 1909. The field work was done for the most part by clerks detailed from the permanent force of the bureau and by special agents appointed expressly for the purpose of collecting statistics of manufactures and mines.

The results of the manufactures census are contained in three volumes, constituting Volumes VIII, IX, and X of the Reports of the Thirteenth Decennial Census. Volume VIII contains a summarization of the statistics by industries and by states, together with a general analysis and discussion. Volume IX, the present volume, contains a separate report on the manufactures of each state and territory, each such report having previously been issued as a bulletin. Volume X contains special reports or monographs relating to the leading individual industries, which are also published as a series of separate bulletins.

The collection and compilation of the statistics of manufactures and the preparation of the text of the present volume have been under the supervision of William M. Steuart, chief statistician for manufactures.

The chiefs of division under Mr. Steuart during the Thirteenth Census period were Joseph D. Lewis and Frank L. Sanford.

Respectfully,



*Director.*

Hon. CHARLES NAGEL,  
*Secretary of Commerce and Labor.*

(7)

# MANUFACTURES, BY STATES AND TERRITORIES.

## INTRODUCTION AND DEFINITION OF TERMS.

### INTRODUCTION.

The statistics of manufactures for the different states and territories were published as separate bulletins as rapidly as the statistics were compiled. These bulletins are now collected in the present volume, forming Volume IX of the reports of the Thirteenth Census. This volume contains the reports for the states and the District of Columbia in alphabetical order, followed by the reports for Alaska, Hawaii, and Porto Rico. The figures in this volume differ in some unimportant details from those given in the bulletins, for the reason that certain minor errors discovered in the bulletins as first published have been corrected.

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

At the end of the report for each state or territory are three general tables.

Table I gives a comparative presentation for 1909, 1904, and 1899 of 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 separately (1) for the state or territory as a whole, and (2) for each city having in 1910 a population of 50,000 or over. It also gives the same items for all industries combined for incorporated places (including most of the New England towns) having a population of over 10,000 but less than 50,000.

Table II gives statistics in detail for each state or territory for 1909 for a larger number of industries than are shown in Table I.

Table III gives statistics in detail by industries for 1909 for cities having a population of 50,000 or over, and for all industries combined for cities and other incorporated places having a population of 10,000 but less than 50,000. This table was not included in the separate bulletins published for each state.

### DEFINITION OF TERMS.

In connection with the reports for the individual states and territories the explanations of the use of terms and the methods of compilation given in the paragraphs following should be borne in mind.

**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 ownership, location of establishments, size of establishments, 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 in any attempt to derive from them figures purporting to show average wages, cost of production, or profits. These limitations are fully discussed in the general report on manufactures for the United States as a whole (Volume VIII of Census Reports) and need not be repeated here.

The census of 1909, like that of 1904, was confined by law to manufacturing establishments conducted under what is known as the factory system, excluding the neighborhood, household, and hand industries. Where statistics for 1899 are given, they have been reduced to a comparable basis by eliminating the latter classes of industries. The census did not cover 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. Reports were secured for establishments operated by the Federal Government, and the statistics for such establishments are presented in the reports for the states or territories in which they are respectively located, though they are not included in the state totals.

**Period covered.**—The returns relate to the calendar year 1909, or the business year which corresponds most nearly to that calendar year, and cover a year's

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 employed constantly during the entire year. Accordingly, the importance of any industry as an employer of labor is believed to be measured more accurately 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 in certain tables for each separate industry, is not totaled for all industries combined for any state, 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. This total, however, is shown for the different cities, because the limited area and greater regularity of employment largely overcame the objection incident to its publication for the separate states or the United States.

In particular, totals by sex and age for the wage earners reported for the representative day for all industries combined 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 for a given state as a whole, the per cent 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. The percentages thus obtained have 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 each state and city as a whole and for the entire country.

In 1899 and 1904 the schedule called for the average number of wage earners of each sex 16 years and over, and the average number under 16 years of age without distinction of sex, 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 average number of men, women, and children 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 part of the year to another were disregarded, and no attention was paid to the fact that a limited number of employees might 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 representation of the hours of labor in manufacturing industries.

**Capital.**—For reasons stated in reports of prior censuses the statistics of capital secured by the census canvass are so defective as to be of little 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.**—The statistics as to cost of materials relate 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. Under the head of "Fuel" is included 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 amounts given under this head represent the selling value or price 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 processes 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 are the products of agriculture or mining or of other manufacturing industries. For many purposes, therefore, the best measure of the importance of different classes of industry is the value created by the manufacturing operations carried on within the industry. This value is obtained by deducting the cost of the materials used 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 by manufacture" 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 is involved 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 horsepower.**—This item represents the total primary power generated by the manufacturing establishments plus the amount of power, principally electric, rented by them from other concerns. It does not cover the electric power developed by the primary power of the establishments themselves, 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 establishments are often 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 city.

**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, since their inclusion would interfere 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. Statistics for such establishments are given in a separate table at the end of the section for each state and territory, so far as this can be done without disclosing the operations of individual establishments.