

# CENSUS BULLETIN.

No. 285.

WASHINGTON, D. C.

October 24, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF UTICA, NEW YORK.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 21, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Utica for the year ended May 31, 1890, prepared under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry with the returns of 1880 it will be observed that the item of "Miscellaneous expenses" is given for 1890 only. No previous census inquiry has embraced the cost incurred in manufacturing operations other than wages paid and materials used. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: cars, and general shop construction and repairs by steam railroad companies; druggists' preparations, not including prescriptions; millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

### TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

|   |           |
|---|-----------|
| Number of establishments reported ..... | 28        |
| Capital invested .....                  | \$193,125 |
| Number of hands employed.....           | 250       |
| Wages paid .....                        | \$96,658  |
| Cost of materials used.....             | \$220,462 |
| Miscellaneous expenses .....            | \$17,255  |
| Value of product at works.....          | \$397,708 |

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

PERCENTAGES OF INCREASE.

|  |        |
|--|--------|
| Number of establishments reported..... | 40.38  |
| Capital invested.....                  | 104.29 |
| Number of hands employed.....          | 66.41  |
| Wages paid.....                        | 79.31  |
| Cost of materials used.....            | 22.80  |
| Value of product at works.....         | 44.34  |
| Population of city.....                | 29.76  |

Decrease in assessed valuation of city, 3.15 per cent.

Decrease of municipal debt less sinking fund, 57.33 per cent.

A striking feature of these returns is the satisfactory increase in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$286 in 1880 to \$308 in 1890, or 7.69 per cent.

That the increase in average wages is below the percentage reported for other cities is due to the fact that the increase in number of hands is larger in some industries in the number of women employed than in the number of men receiving relatively higher wages. In the manufacture of men's clothing, cotton goods, fur goods, and hosiery and knit goods 2,008 women were reported as employed in 1880 and 4,845 in 1890; an increase of 157.70 per cent. The industries referred to employed 1,138 men in 1880 and 1,962 men in 1890; an increase of 72.40 per cent.

Attention is called to the presentation of labor and wage statistics. The "average wages" paid to all classes employed has always proved a stumbling block in census reports. It is believed the Eleventh Census, in obtaining data to show the classification of labor employed, the average term of employment, the various rates of wages per week, and the average number of men, women, and children, respectively, employed at each rate in the various classes, has taken a step in advance, which will be shown in detail in final reports, and appreciated by students of these data.

*Robert D. Tolson*  
 Superintendent of Census.

# STATISTICS OF MANUFACTURES: 1890.

## CITY OF UTICA, NEW YORK.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

The instructions issued by this office to enumerators and special agents relating to the collection of statistics of manufactures were as follows:

It shall be their duty personally to visit every establishment of productive industry in their respective districts (except as noted) and to obtain the required information in the case of each manufacturing establishment.

The term "establishment of productive industry" must be understood in its broadest sense to embrace not only mills and factories but also the operation of all small establishments and the mechanical trades.

Restaurants, saloons, barber shops, the compounding of individual prescriptions by druggists and apothecaries, the operations of mercantile establishments, transportation corporations and lines, and professional services (except mechanical dentistry) are not considered as coming within the meaning of the law in this connection.

Great care must be taken by special agents and enumerators to guard against the omission from their returns of any establishment that comes properly within the scope of this investigation. \* \* \* They should have their eyes open to every indication of the presence of productive industry and should supplement personal observation by frequent and persistent inquiry.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

| INDUSTRIES. | Number industries reported. | Number establishments reporting. | Capital. (a) | Hands employed. | Wages paid. | Cost of materials used. |
|-------------|-----------------------------|----------------------------------|--------------|-----------------|-------------|-------------------------|
|             |                             |                                  |              |                 |             |                         |

  

| INDUSTRIES.         | Miscellaneous expenses. (b) | Value of product.         | MUNICIPAL DATA.  |                            |                      |
|---------------------|-----------------------------|---------------------------|------------------|----------------------------|----------------------|
|                     |                             |                           | Population.      | Assessed valuation.        | Municipal debt. (c)  |
| All industries..... | 8869,440                    | \$8,873,306<br>13,205,572 | 33,914<br>44,007 | \$19,475,560<br>18,861,961 | \$568,000<br>241,500 |

a The value of hired property is not included for 1890, because it was not reported in 1880.

b No inquiry in 1880 relating to "Miscellaneous expenses".

c The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 presents the statistics of 1880 and 1890 in the form of publication used in the reports for 1880. In comparing industrial statistics for 1880 and 1890 it should be borne in mind, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

The form of question respecting capital used at the census of 1880 was as follows: "Capital (real and personal) invested in the business". It became evident from the results then obtained that this question was neither sufficiently comprehensive nor properly understood, and therefore the full amount of capital employed in productive industry was not reported, thus forming an erroneous basis for deductions.

The present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

#### TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

#### LABOR EMPLOYED AND WAGES PAID.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

It should be noted that the first class includes all operatives, that is, those directly engaged in productive labor as well as skilled mechanics, while the second class includes all unskilled workmen other than operatives. The questions required a statement of the average number of men, women, and children, respectively, employed during the year in each class, also the actual amounts of wages paid to each number.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

#### MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

| CLASSIFICATION OF INQUIRIES.  | Boots and shoes—factory products.<br>(3 establishments.) | Clothing—men's, wholesale.<br>(11 establishments.) | Cotton goods.<br>(3 establishments.) | Flouring and grist mill products.<br>(3 establishments.) | Foundry and machine shop products.<br>(8 establishments.) |
|---|--|--|--------------------------------------|--|---|
| CAPITAL EMPLOYED—Aggregate.....   | \$753,932  | \$2,655,888  | \$2,894,859                          | \$212,900  | \$230,355   |
| HIRED PROPERTY—Total.....   | 23,500   | 401,680  |                                      | 38,900   | 9,150   |
| PLANT—Total.....  | 217,500  | 17,400   | 1,834,310                            | 65,000   | 115,950   |
| Land.....   | 40,000   |  | 75,921                               | 15,000   | 34,000  |
| Buildings.....  | 50,000   |  | 591,905                              | 10,000   | 45,400  |
| Machinery, tools, and implements.....   | 127,500  | 17,400   | 1,166,484                            | 30,000   | 36,550  |
| LIVE ASSETS—Total.....  | 507,932  | 2,236,808  | 1,060,549                            | 119,000  | 105,255   |
| Raw materials.....  | 76,258   | 251,616  | 434,614                              | 38,000   | 11,000  |
| Stock in process and finished product.....  | 135,705  | 938,750  | 280,047                              | 8,000  | 47,325  |
| Cash, bills and accounts receivable, and all sundries not elsewhere reported..... | 245,969  | 1,046,442  | 365,888                              | 73,000   | 46,620  |
| WAGES PAID—Aggregate.....   | \$241,256  | \$639,774  | \$458,460                            | \$27,232   | \$71,136  |
| Average number of hands employed during the year.....                             | 507  | 4,566  | 1,491                                | 39   | 110   |
| Males above 16 years.....   | 145  | 283  | 593                                  | 37   | 109   |
| Females above 15 years.....   | 30   | 83   | 750                                  |  | 1   |
| Children.....   |  |  | 139                                  |  |   |
| Pieceworkers.....   | 323  | 4,200  |                                      | 2  |   |
| MATERIALS USED—Aggregate cost.....  | \$445,749  | \$1,533,292  | \$1,256,072                          | \$340,242  | \$59,957  |
| Principal materials.....  | 430,549  | 1,579,926  | 1,201,388                            | 327,432  | 55,281  |
| Fuel.....   | 2,200  | 3,226  | 26,263                               | 3,150  | 3,846   |
| Mill supplies.....  |  | 65   | 14,513                               | 300  | 80  |
| All other materials.....  | 13,000   | 75   | 13,908                               | 9,360  | 650   |
| MISCELLANEOUS EXPENSES—Aggregate.....   | \$36,403   | \$127,431  | \$124,415                            | \$7,011  | \$79,742  |
| Amount paid for contract work.....  |  |  |                                      |  |   |
| Rent.....   | 2,100  | 28,128   |                                      | 3,100  | 824   |
| Power and heat.....   |  |  |                                      |  |   |
| Taxes.....  | 1,402  | 1,500  | 24,544                               | 231  | 1,261   |
| Insurance.....  | 2,211  | 4,956  | 5,499                                | 1,530  | 956   |
| Repairs, ordinary, of buildings and machinery.....                                | 3,000  | 800  | 29,151                               | 450  | 1,100   |
| Interest on cash used in the business.....  | 12,700   | 9,000  | 49,348                               | 1,400  | 2,463   |
| All sundries not elsewhere reported.....  | 14,900   | 83,247   | 15,873                               | 300  | 73,138  |
| GOODS MANUFACTURED—Aggregate value.....   | \$851,300  | \$2,832,808  | \$2,160,247                          | \$431,300  | \$270,626   |
| Principal product.....  | 851,300  | 2,832,808  | 2,160,247                            | 414,700  | 188,626   |
| All other products, including receipts from custom work and repairing.....        |  | 500  |                                      | 16,600   | 82,000  |

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

| CLASSIFICATION OF INQUIRIES.  | Hosiery and knit goods.<br>(6 establishments.) | Liquors—malt.<br>(8 establishments.) | Printing and publishing. (a)<br>(12 establishments.) | Steam fittings and heating apparatus.<br>(4 establishments.) | Tobacco. (a)<br>(32 establishments.) |
|---|--|--------------------------------------|--|--|--------------------------------------|
| CAPITAL EMPLOYED—Aggregate.....   | \$610,008                                      | \$368,199                            | \$254,626  | \$382,420  | \$604,274                            |
| HIRSD PROPERTY—Total.....   | 6,400  | 20,500                               | 99,700   | 58,000   | 56,500                               |
| PLANT—Total.....  | 342,900  | 231,260                              | 106,776  | 90,578   | 88,720                               |
| Land.....   | 19,800   | 57,400                               | 1,000  | 20,000   | 39,000                               |
| Buildings.....  | 90,000   | 72,000                               | 3,000  | 20,000   | 30,300                               |
| Machinery, tools, and implements.....   | 233,100  | 101,860                              | 102,776  | 50,578   | 19,420                               |
| LIVE ASSETS—Total.....  | 260,708  | 116,439                              | 48,150   | 233,842  | 459,054                              |
| Raw materials.....  | 102,771  | 22,475                               | 13,300   | 28,927   | 110,577                              |
| Stock in process and finished product.....  | 77,400   | 32,799                               | 5,200  | 30,266   | 35,976                               |
| Cash, bills and accounts receivable, and all sundries not elsewhere reported..... | 80,537   | 61,165                               | 29,650   | 176,649  | 312,501                              |
| WAGES PAID—Aggregate.....   | \$188,784                                      | \$77,375                             | \$147,828  | \$130,183  | \$185,504                            |
| Average number of hands employed during the year.....                             | 724  | 116                                  | 281  | 195  | 377                                  |
| Males above 16 years.....   | 143  | 116                                  | 198  | 169  | 155                                  |
| Females above 15 years.....   | 176  |                                      | 6  | 1  | 7                                    |
| Children.....   | 83   |                                      | 5  | 1  | 7                                    |
| Pieceworkers.....   | 322  |                                      | 72   | 24   | 208                                  |
| MATERIALS USED—Aggregate cost.....  | \$360,701                                      | \$105,754                            | \$95,525   | \$113,245  | \$239,062                            |
| Principal materials.....  | 304,522  | 96,828                               | 92,738   | 92,110   | 219,485                              |
| Fuel.....   | 4,997  | 5,761                                | 1,895  | 5,480  | 1,039                                |
| Mill supplies.....  | 83   | 200                                  | 10   | 3,600  | 500                                  |
| All other materials.....  | 51,182   | 2,965                                | 882  | 12,055   | 18,938                               |
| MISCELLANEOUS EXPENSES—Aggregate.....   | \$30,828                                       | \$84,376                             | \$45,366   | \$28,414   | \$96,604                             |
| Amount paid for contract work.....  |  |                                      |  |  |                                      |
| Rent.....   | 450  | 1,423                                | 7,982  | 4,650  | 4,537                                |
| Power and heat.....   | 150  |                                      | 210  |  |                                      |
| Taxes.....  | 1,068  | 555,558                              | 524  | 961  | 571,555                              |
| Insurance.....  | 1,809  | 2,445                                | 860  | 1,176  | 1,705                                |
| Repairs, ordinary, of buildings and machinery.....                                | 7,633  | 6,600                                | 1,331  | 1,475  | 235                                  |
| Interest on cash used in the business.....  | 16,518   | 3,650                                | 760  | 1,200  | 399                                  |
| All sundries not elsewhere reported.....  | 3,200  | 14,700                               | 33,699   | 18,952   | 18,263                               |
| GOODS MANUFACTURED—Aggregate value.....   | \$715,178                                      | \$392,974                            | \$399,415  | \$328,939  | \$610,649                            |
| Principal product.....  | 268,000  | 392,974                              | 399,390  | 321,939  | 610,649                              |
| All other products, including receipts from custom work and repairing.....        | 447,178  |                                      | 25   | 7,000  |                                      |

a Includes several branches of this industry, which will be specifically stated in final reports.  
 b Includes internal revenue taxes.

# CENSUS BULLETIN.

No. 286.

WASHINGTON, D. C.

October 24, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF HOLYOKE, MASSACHUSETTS.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 21, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Holyoke for the year ended May 31, 1890, prepared under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry with the returns of 1880 it will be observed that the item of "Miscellaneous expenses" is given for 1890 only. No previous census inquiry has embraced the cost incurred in manufacturing operations other than wages paid and materials used. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: druggists' preparations, not including prescriptions; gas, manufactured, illuminating and heating; millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

### TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

|   |           |
|---|-----------|
| Number of establishments reported ..... | 106       |
| Capital invested .....                  | \$240,125 |
| Number of hands employed .....          | 146       |
| Wages paid .....                        | \$64,671  |
| Cost of materials used .....            | \$113,337 |
| Miscellaneous expenses .....            | \$31,215  |
| Value of product at works .....         | \$360,958 |

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

PERCENTAGES OF INCREASE.

|   |        |
|---|--------|
| Number of establishments reported ..... | 201.63 |
| Capital invested .....                  | 152.39 |
| Number of hands employed.....           | 33.21  |
| Wages paid .....                        | 106.77 |
| Cost of materials used.....             | 59.11  |
| Value of product at works.....          | 73.63  |
| Population of city .....                | 62.61  |
| Assessed valuation of city.....         | 106.76 |

Decrease of municipal debt less sinking fund, 8.37 per cent.

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$304 in 1880 to \$473 in 1890, or 55.59 per cent.

Part of this increase is undoubtedly due to the fact that in many industries relatively more men were employed in 1890 and less children, and also to the fact that in 10 years many branches of industry have improved the grades of their products, and for this reason require more skilled and higher paid employés. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

Attention is called to the presentation of labor and wage statistics. The "average wages" paid to all classes employed has always proved a stumbling block in census reports. It is believed the Eleventh Census, in obtaining data to show the classification of labor employed, the average term of employment, the various rates of wages per week, and the average number of men, women, and children, respectively, employed at each rate in the various classes, has taken a step in advance, which will be shown in detail in final reports, and appreciated by students of these data.

*Robert P. Porter*  
 Superintendent of Census.

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The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

| INDUSTRIES. | Number industries reported. | Number establishments reporting. | Capital. (a) | Hands employed. | Wages paid. | Cost of materials used. |
|-------------|-----------------------------|----------------------------------|--------------|-----------------|-------------|-------------------------|
|             |                             |                                  |              |                 |             |                         |

  

| INDUSTRIES.    | Miscellaneous expenses. (b) | Value of product.          | MUNICIPAL DATA.  |                           |                      |
|----------------|-----------------------------|----------------------------|------------------|---------------------------|----------------------|
|                |                             |                            | Population.      | Assessed valuation.       | Municipal debt. (c)  |
| All industries | \$1,689,909                 | \$13,687,327<br>24,091,667 | 21,915<br>35,637 | \$9,931,791<br>22,073,825 | \$378,454<br>804,884 |

a The value of hired property is not included for 1890, because it was not reported in 1880.  
 b No inquiry in 1880 relating to "Miscellaneous expenses".  
 c The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 presents the statistics of 1880 and 1890 in the form of publication used in the reports for 1880. In comparing industrial statistics for 1880 and 1890 it should be borne in mind, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

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Second. Watchmen, laborers, teamsters, and other unskilled workmen.

It should be noted that the first class includes all operatives, that is, those directly engaged in productive labor as well as skilled mechanics, while the second class includes all unskilled workmen other than operatives. The questions required a statement of the average number of men, women, and children, respectively, employed during the year in each class, also the actual amounts of wages paid to each number.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

#### MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

| CLASSIFICATION OF INQUIRIES.   | Carriages and<br>wagons.<br><br>(5 establish-<br>ments.) | Cotton goods.<br><br>(5 establish-<br>ments.) | Foundry and<br>machineshop<br>products.<br><br>(12 establish-<br>ments.) | Paper. (b)<br><br>(19 establish-<br>ments.) | Stationery and<br>other paper<br>goods. (b)<br><br>(9 establish-<br>ments.) | Wire work,<br>including wire<br>rope and cable.<br><br>(4 establish-<br>ments.) | Woolen goods.<br><br>(5 establish-<br>ments.) |
|--|--|---|--|---|---|---|---|
| CAPITAL EMPLOYED—Aggregate   | \$143,785  | \$3,554,356                                   | \$1,447,183  | \$9,672,259                                 | \$1,145,191   | \$283,060   | \$1,638,081                                   |
| Hired property—Total   | 19,250   |   | 81,320   |   | 257,820   | 46,316  | 104,350                                       |
| PLANT—Total  | 52,300   | 2,562,334                                     | 594,301  | 5,689,129                                   | 194,160   | 123,100   | 793,321                                       |
| Land   | 19,000   | 297,363                                       | 145,061  | 1,113,760                                   | 15,000  | 25,000  | 91,000  |
| Buildings  | 23,500   | 918,088                                       | 137,609  | 2,217,000                                   | 20,000  | 50,000  | 315,813                                       |
| Machinery, tools, and implements   | 9,800  | 1,346,883                                     | 311,631  | 2,358,429                                   | 159,160   | 48,100  | 386,508                                       |
| LIVE ASSETS—Total  | 72,235   | 2,992,022                                     | 771,562  | 3,983,130                                   | 693,211   | 113,644   | 740,410                                       |
| Raw materials  | 8,970  | 844,213                                       | 63,214   | 576,913                                     | 160,587   | 12,800  | 244,535                                       |
| Stock in process and finished product  | 47,305   | 389,041                                       | 309,555  | 794,558                                     | 126,243   | 29,950  | 298,693                                       |
| Cash, bills and accounts receivable, and all<br>sundries not elsewhere reported. | 15,460   | 1,258,768                                     | 398,793  | 2,611,659                                   | 406,381   | 70,894  | 197,122                                       |
| WAGES PAID—Aggregate   | \$49,655   | \$1,027,847                                   | \$512,696  | \$1,536,964                                 | \$287,428   | \$87,100  | \$400,719                                     |
| Average number of hands employed during the<br>year.                             | 77   | 2,989   | 804  | 3,206                                       | 691   | 136   | 1,048   |
| Males above 16 years   | 77   | 940   | 789  | 1,719                                       | 230   | 94  | 613   |
| Females above 15 years   |  | 1,457   | 2  | 657   | 298   | 12  | 328   |
| Children   |  | 232   | 2  | 13  | 2   |   | 38  |
| Pieceworkers   |  | 360   | 13   | 817   | 161   | 30  | 69  |
| MATERIALS USED—Aggregate cost  | \$35,000   | \$2,052,292                                   | \$456,437  | \$4,523,314                                 | \$814,586   | \$80,559  | \$810,016                                     |
| Principal materials  | 30,164   | 1,842,425                                     | 308,886  | 4,011,497                                   | 806,164   | 62,265  | 643,606                                       |
| Fuel   | 886  | 42,282  | 11,629   | 212,911                                     | 6,310   | 430   | 11,071  |
| Mill supplies  |  | 24,354  | 95,524   |   | 1,063   | 8,160   |   |
| All other materials  | 3,950  | 143,231                                       | 40,398   | 298,906                                     | 1,049   | 9,704   | 155,339                                       |
| MISCELLANEOUS EXPENSES—Aggregate   | \$3,584  | \$283,472                                     | \$50,244   | \$701,798                                   | \$128,472   | \$9,006   | \$110,613                                     |
| Amount paid for contract work  |  |   |  |   | 200   |   |   |
| Rent   | 1,628  |   | 7,348  |   | 18,194  | 3,220   | 7,820   |
| Power and heat   |  | 19,074  | 1,330  | 76,180                                      | 1,020   | 900   | 4,526   |
| Taxes  | 491  | 48,752  | 7,643  | 78,014                                      | 3,672   | 1,294   | 8,962   |
| Insurance  | 790  | 15,658  | 3,376  | 48,008                                      | 2,507   | 1,376   | 8,240   |
| Repairs, ordinary, of buildings and machinery                                    | 250  | 93,180  | 874  | 203,235                                     | 5,777   | 1,450   | 27,063  |
| Interest on cash used in the business  | 300  | 104,634                                       | 19,520   | 111,774                                     | 9,814   | 366   | 31,009  |
| All sundries not elsewhere reported  | 125  | 2,174   | 10,153   | 184,587                                     | 87,288  | 400   | 22,993  |
| GOODS MANUFACTURED—Aggregate value   | \$130,385  | \$4,392,722                                   | \$1,195,022  | \$8,214,087                                 | \$1,408,937   | \$224,531   | \$1,475,000                                   |
| Principal product  | 72,985   | 3,917,076                                     | 1,153,284  | 8,205,714                                   | 1,393,937   | 221,031   | 1,386,805                                     |
| All other products, including receipts from custom<br>work and repairing.        | 57,400   | 475,646                                       | 41,738   | 8,373                                       | 15,000  | 3,500   | 88,285  |

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.  
c Includes several branches of this industry, which will be specifically stated in final reports.

# CENSUS BULLETIN.

No. 287.

WASHINGTON, D. C.

October 24, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF TROY, NEW YORK.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 21, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Troy for the year ended May 31, 1890, prepared under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry with the returns of 1880 it will be observed that the item of "Miscellaneous expenses" is given for 1890 only. No previous census inquiry has embraced the cost incurred in manufacturing operations other than wages paid and materials used. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

### TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

|  |            |
|--|------------|
| Number of establishments reported..... | 103        |
| Capital invested .....                 | \$231, 856 |
| Number of hands employed .....         | 415        |
| Wages paid.....                        | \$153, 734 |
| Cost of materials used .....           | \$172, 288 |
| Miscellaneous expenses.....            | \$25, 464  |
| Value of product at works .....        | \$392, 759 |

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

## PERCENTAGES OF INCREASE.

|  |        |
|--|--------|
| Number of establishments reported..... | 42.80  |
| Capital invested.....                  | 65.05  |
| Number of hands employed.....          | 10.00  |
| Wages paid.....                        | 38.59  |
| Value of product at works.....         | 8.21   |
| Population of city.....                | 7.42   |
| Assessed valuation of city.....        | 187.58 |
| Municipal debt less sinking fund.....  | 15.42  |

Decrease in cost of materials used, 4.12 per cent.

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$301 in 1880 to \$379 in 1890, or 25.91 per cent.

Part of this increase is undoubtedly due to the fact that in many industries relatively more men were employed in 1890 and less children, and also to the fact that in 10 years many branches of industry have improved the grades of their products, and for this reason require more skilled and higher paid employes. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

The decreased cost of materials is principally found in the manufacture of men's clothing, men's furnishing goods, men's shirts, iron and steel, malt liquors, paper, and printing and publishing. In 1880 the total cost of materials reported for the industries named was \$8,452,822, and the total value of products \$16,697,236; the materials constituting 50.62 per cent of the value of products.

In 1890 the total cost of materials reported for these industries is \$7,944,283, and the total value of products is \$17,855,226; the materials constituting 44.49 per cent of the value of products.

Attention is called to the presentation of labor and wage statistics. The "average wages" paid to all classes employed has always proved a stumbling block in census reports. It is believed the Eleventh Census, in obtaining data to show the classification of labor employed, the average term of employment, the various rates of wages per week, and the average number of men, women, and children, respectively, employed at each rate in the various classes, has taken a step in advance, which will be shown in detail in final reports, and appreciated by students of these data.

*Robert D. Tollen*

Superintendent of Census.

# STATISTICS OF MANUFACTURES: 1890.

## CITY OF TROY, NEW YORK.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

The instructions issued by this office to enumerators and special agents relating to the collection of statistics of manufactures were as follows :

It shall be their duty personally to visit every establishment of productive industry in their respective districts (except as noted) and to obtain the required information in the case of each manufacturing establishment.

The term "establishment of productive industry" must be understood in its broadest sense to embrace not only mills and factories but also the operation of all small establishments and the mechanical trades.

Restaurants, saloons, barbershops, the compounding of individual prescriptions by druggists and apothecaries, the operations of mercantile establishments, transportation corporations and lines, and professional services (except mechanical dentistry) are not considered as coming within the meaning of the law in this connection.

Great care must be taken by special agents and enumerators to guard against the omission from their returns of any establishment that comes properly within the scope of this investigation. \* \* \* They should have their eyes open to every indication of the presence of productive industry and should supplement personal observation by frequent and persistent inquiry.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

| INDUSTRIES. | Number industries reported. | Number establishments reporting. | Capital. (a) | Hands employed. | Wages paid. | Cost of materials used. |
|-------------|-----------------------------|----------------------------------|--------------|-----------------|-------------|-------------------------|
|             |                             |                                  |              |                 |             |                         |

  

| INDUSTRIES.    | Miscellaneous expenses. (b) | Value of product.          | MUNICIPAL DATA.  |                            |                        |
|----------------|-----------------------------|----------------------------|------------------|----------------------------|------------------------|
|                |                             |                            | Population.      | Assessed valuation.        | Municipal debt. (c)    |
| All industries | \$2,838,611                 | \$26,497,163<br>23,064,935 | 56,747<br>60,956 | \$15,712,546<br>45,186,773 | \$958,296<br>1,106,108 |

a The value of hired property is not included for 1890, because it was not reported in 1880.

b No inquiry in 1880 relating to "Miscellaneous expenses".

c The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 presents the statistics of 1880 and 1890 in the form of publication used in the reports for 1880. In comparing industrial statistics for 1880 and 1890 it should be borne in mind, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

The form of question respecting capital used at the census of 1880 was as follows: "Capital (real and personal) invested in the business". It became evident from the results then obtained that this question was neither sufficiently comprehensive nor properly understood, and therefore the full amount of capital employed in productive industry was not reported, thus forming an erroneous basis for deductions.

The present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

#### TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

#### LABOR EMPLOYED AND WAGES PAID.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

It should be noted that the first class includes all operatives, that is, those directly engaged in productive labor as well as skilled mechanics, while the second class includes all unskilled workmen other than operatives. The questions required a statement of the average number of men, women, and children, respectively, employed during the year in each class, also the actual amounts of wages paid to each number.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

#### MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

| CLASSIFICATION OF INQUIRIES.   | Foundry and<br>machine shop<br>products.<br><br>(30 establish-<br>ments.) | Furnishing<br>goods—men's.<br><br>(17 establish-<br>ments.) | Hosiery and<br>knit goods.<br><br>(5 establish-<br>ments.) | Liquors—malt.<br>(b)<br><br>(11 establish-<br>ments.) | Iron and steel.<br>(b)<br><br>(5 establish-<br>ments.) |
|--|---|---|--|---|--|
| CAPITAL EMPLOYED—Aggregate.....  | \$3,215,113   | \$2,061,793   | \$711,880  | \$1,928,842   | \$4,780,977  |
| HIRED PROPERTY—Total .....   | 20,910  | 478,615   | 66,380   | 8,730   |  |
| PLANT—Total.....   | 967,615   | 124,072   | 407,000  | 1,056,348   | 2,132,876  |
| Land.....  | 188,500   |   | 37,000   | 152,300   | 430,000  |
| Buildings.....   | 316,750   |   | 123,000  | 432,364   | 647,500  |
| Machinery, tools, and implements.....  | 462,365   | 124,072   | 247,000  | 411,684   | 1,055,376  |
| LIVE ASSETS—Total.....   | 2,226,588   | 1,459,106   | 238,500  | 863,764   | 2,648,101  |
| Raw materials.....   | 201,506   | 101,764   | 86,000   | 201,520   | 464,101  |
| Stock in process and finished product.....   | 729,506   | 673,708   | 73,500   | 147,091   | 757,385  |
| Cash, bills and accounts receivable, and all sundries not else-<br>where reported..... | 1,295,576   | 683,634   | 79,000   | 515,153   | 1,426,615  |
| WAGES PAID—Aggregate.....  | \$988,345   | \$1,006,774   | \$281,751  | \$188,710   | \$1,549,795  |
| Average number of hands employed during the year.....                                  | 1,815   | 5,049   | 769  | 286   | 3,003  |
| Males above 16 years.....  | 977   | 269   | 277  | 286   | 2,973  |
| Females above 15 years.....  | 4   | 197   | 81   |   |  |
| Children.....  | 9   | 29  | 5  |   |  |
| Pieceworkers.....  | 825   | 4,554   | 426  |   | 30   |
| MATERIALS USED—Aggregate cost.....   | \$852,855   | \$836,011   | \$455,373  | \$454,163   | \$3,767,974  |
| Principal materials.....   | 628,478   | 735,437   | 385,250  | 418,801   | 3,073,075  |
| Fuel.....  | 64,635  | 4,094   | 8,782  | 20,619  | 450,748  |
| Mill supplies.....   | 16,704  | 505   |  | 550   |  |
| All other materials.....   | 78,038  | 95,975  | 61,341   | 14,183  | 214,151  |
| MISCELLANEOUS EXPENSES—Aggregate.....  | \$284,864   | \$843,360   | \$56,092   | \$324,200   | \$205,001  |
| Amount paid for contract work.....   | 7,862   | 152,015   |  |   |  |
| Rent.....  | 16,324  | 30,712  | 4,262  | 600   |  |
| Power and heat.....  | 4,044   | 6,898   | 1,000  |   |  |
| Taxes.....   | 13,387  | 2,179   | 2,150  | c203,910  | 48,089   |
| Insurance.....   | 9,888   | 7,628   | 5,950  | 8,682   | 8,124  |
| Repairs, ordinary, of buildings and machinery.....                                     | 15,521  | 4,381   | 25,000   | 25,865  | 120,164  |
| Interest on cash used in the business.....   | 65,037  | 82,983  | 9,250  | 17,336  |  |
| All sundries not elsewhere reported.....   | 152,801   | 556,564   | 8,480  | 67,897  | 118,624  |
| GOODS MANUFACTURED—Aggregate value.....  | \$2,505,647   | \$3,054,456   | \$846,542  | \$1,328,337   | \$5,977,167  |
| Principal product.....   | 2,207,517   | 3,051,473   | 846,542  | 1,328,337   | 5,960,441  |
| All other products, including receipts from custom work and repairing.....             | 298,130   | 2,983   |  |   | 16,726   |

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.

b Includes several branches of this industry, which will be specifically stated in final reports.

c Includes internal revenue taxes.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

| CLASSIFICATION OF INQUIRIES.   | Paper.<br>(5 establish-<br>ments.) | Printing and<br>publishing. (a)<br>(17 establish-<br>ments.) | Shirts—factory<br>product.<br>(12 establish-<br>ments.) | Tobacco—cigars<br>and cigarettes.<br>(43 establish-<br>ments.) | Wire work,<br>including wire<br>rope and cable.<br>(3 establish-<br>ments.) |
|--|------------------------------------|--|---|--|---|
| CAPITAL EMPLOYED—Aggregate.....  | \$1,036,943                        | \$654,559  | \$3,953,237   | \$421,994  | \$224,500   |
| HIRED PROPERTY—Total.....  | 66,420                             | 208,140  | 309,920   | 122,360  | 23,220  |
| PLANT—Total.....   | 484,948                            | 276,887  | 730,236   | 42,187   | 81,200  |
| Land.....  | 54,600                             | 10,000   | 79,000  | 18,100   |   |
| Buildings.....   | 112,500                            | 6,000  | 216,837   | 15,675   |   |
| Machinery, tools, and implements.....  | 317,848                            | 260,887  | 434,399   | 8,412  | 81,200  |
| LIVE ASSETS—Total.....   | 485,575                            | 169,532  | 2,913,081   | 257,447  | 120,080   |
| Raw material.....  | 67,777                             | 15,477   | 198,257   | 90,854   | 11,010  |
| Stock in process and finished product.....   | 53,072                             | 4,800  | 1,346,374   | 37,081   | 45,070  |
| Cash, bills and accounts receivable, and all sundries not else-<br>where reported..... | 364,726                            | 149,255  | 1,368,450   | 129,512  | 64,000  |
| WAGES PAID—Aggregate.....  | \$90,447                           | \$245,584  | \$2,474,255   | \$143,561  | \$61,821  |
| Average number of hands employed during the year.....                                  | 197                                | 385  | 8,713   | 306  | 112   |
| Males above 16 years.....  | 173                                | 249  | 501   | 101  | 76  |
| Females above 16 years.....  | 24                                 | 5  | 793   | 1  | 1   |
| Children.....  | 12                                 | 12   | 40  | 10   | 3   |
| Pieceworkers.....  |                                    | 119  | 7,379   | 194  | 32  |
| MATERIALS USED—Aggregate cost.....   | \$324,615                          | \$90,572   | \$2,475,406   | \$173,865  | \$154,730   |
| Principal materials.....   | 233,483                            | 83,169   | 2,275,182   | 158,037  | 133,246   |
| Fuel.....  | 20,504                             | 2,895  | 27,041  | 732  | 14,065  |
| Mill supplies.....   |                                    |  | 24,825  |  |   |
| All other materials.....   | 10,628                             | 4,508  | 148,358   | 15,096   | 7,419   |
| MISCELLANEOUS EXPENSES—Aggregate.....  | \$48,995                           | \$61,967   | \$534,967   | \$36,982   | \$16,879  |
| Amount paid for contract work.....   |                                    |  |   |  |   |
| Rent.....  | 4,000                              | 13,210   | 19,852  | 8,386  | 1,598   |
| Power and heat.....  | 954                                | 1,867  | 750   |  | 1,000   |
| Taxes.....   | 4,924                              | 304  | 3,890   | \$26,014   | 837   |
| Insurance.....   | 4,551                              | 2,366  | 9,974   | 1,124  | 80  |
| Repairs, ordinary, of buildings and machinery.....                                     | 7,694                              | 2,010  | 21,050  | 125  | 3,225   |
| Interest on cash used in the business.....   | 17,316                             | 4,121  | 56,369  | 60   | 4,793   |
| All sundries not elsewhere reported.....   | 8,966                              | 38,089   | 423,082   | 1,273  | 5,335   |
| GOODS MANUFACTURED—Aggregate value.....  | \$552,228                          | \$499,236  | \$6,217,785   | \$406,794  | \$251,694   |
| Principal product.....   | 552,228                            | 499,236  | 6,183,118   | 406,294  | 250,094   |
| All other products, including receipts from custom work and repairing.....             |                                    |  | 34,667  | 500  | 1,600   |

a Includes several branches of this industry, which will be specifically stated in final reports.  
b Includes internal revenue taxes.

# CENSUS BULLETIN.

No. 288.

WASHINGTON, D. C.

October 25, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF SOMERVILLE, MASSACHUSETTS.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 22, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Somerville for the year ended May 31, 1890, prepared under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry with the returns of 1880 it will be observed that the item of "Miscellaneous expenses" is given for 1890 only. No previous census inquiry has embraced the cost incurred in manufacturing operations other than wages paid and materials used. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

### TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

|  |          |
|--|----------|
| Number of establishments reported..... | 56       |
| Capital invested.....                  | \$9,602  |
| Number of hands employed.....          | 138      |
| Wages paid.....                        | \$51,460 |
| Cost of materials used.....            | \$11,111 |
| Miscellaneous expenses.....            | \$5,800  |
| Value of product at works.....         | \$74,076 |

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows :

PERCENTAGES OF INCREASE.

|  |        |
|--|--------|
| Number of establishments reported..... | 231.00 |
| Capital invested .....                 | 124.53 |
| Number of hands employed.....          | 130.56 |
| Wages paid.....                        | 194.95 |
| Value of product at works.....         | 23.88  |
| Population of city.....                | 61.04  |
| Assessed valuation of city .....       | 59.14  |

Decrease in cost of materials used, 5.43 per cent.

Decrease of municipal debt less sinking fund, 28.57 per cent.

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$436 in 1880 to \$557 in 1890, or 27.75 per cent.

Part of this increase is undoubtedly due to the fact that in many industries relatively more men were employed in 1890 and less children; also to the fact that in 10 years many branches of industry have improved the grades of their products, and for this reason require more skilled and higher paid employes. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

The apparent decrease in cost of materials used is probably due in a measure to the fact that in the reports of 1880 internal revenue taxes paid by distillers were embraced by such cost, while in 1890 it is reported as "taxes", under the head of "Miscellaneous expenses".

Attention is called to the presentation of labor and wage statistics. The "average wages" paid to all classes employed has always proved a stumbling block in census reports. It is believed the Eleventh Census, in obtaining data to show the classification of labor employed, the average term of employment, the various rates of wages per week, and the average number of men, women, and children, respectively, employed at each rate in the various classes, has taken a step in advance, which will be shown in detail in final reports, and appreciated by students of these data.

*Robert T. Forster*

Superintendent of Census.

# STATISTICS OF MANUFACTURES: 1890.

## CITY OF SOMERVILLE, MASSACHUSETTS.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

The instructions issued by this office to enumerators and special agents relating to the collection of statistics of manufactures were as follows:

It shall be their duty personally to visit every establishment of productive industry in their respective districts (except as noted) and to obtain the required information in the case of each manufacturing establishment.

The term "establishment of productive industry" must be understood in its broadest sense to embrace not only mills and factories but also the operation of all small establishments and the mechanical trades.

Restaurants, saloons, barber shops, the compounding of individual prescriptions by druggists and apothecaries, the operations of mercantile establishments, transportation corporations and lines, and professional services (except mechanical dentistry) are not considered as coming within the meaning of the law in this connection.

Great care must be taken by special agents and enumerators to guard against the omission from their returns of any establishment that comes properly within the scope of this investigation. \* \* \* They should have their eyes open to every indication of the presence of productive industry and should supplement personal observation by frequent and persistent inquiry.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

| INDUSTRIES.          | Number industries reported. | Number establishments reporting. | Capital. (a) | Hands employed. | Wages paid. | Cost of materials used. |
|----------------------|-----------------------------|----------------------------------|--------------|-----------------|-------------|-------------------------|
|                      |                             |                                  |              |                 |             |                         |
| All industries ..... | 1880                        | 38                               | \$1,682,795  | 1,296           | \$564,508   | \$4,608,192             |
|                      | 1890                        | 58                               | 3,738,018    | 3,126           | 1,716,496   | 4,369,064               |

  

| INDUSTRIES.          | Miscellaneous expenses. (b) | Value of product. | MUNICIPAL DATA. |                     |                     |
|----------------------|-----------------------------|-------------------|-----------------|---------------------|---------------------|
|                      |                             |                   | Population.     | Assessed valuation. | Municipal debt. (c) |
| All industries ..... | 1880                        | \$5,852,535       | 24,933          | \$20,458,100        | \$1,596,974         |
|                      | 1890                        | \$596,404         | 40,152          | 32,557,500          | 1,140,696           |

<sup>a</sup> The value of hired property is not included for 1890, because it was not reported in 1880.

<sup>b</sup> No inquiry in 1880 relating to "Miscellaneous expenses".

<sup>c</sup> The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 presents the statistics of 1880 and 1890 in the form of publication used in the reports for 1880. In comparing industrial statistics for 1880 and 1890 it should be borne in mind, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

The form of question respecting capital used at the census of 1880 was as follows: "Capital (real and personal) invested in the business". It became evident from the results then obtained that this question was neither sufficiently comprehensive nor properly understood, and therefore the full

amount of capital employed in productive industry was not reported, thus forming an erroneous basis for deductions.

The present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

#### TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

#### LABOR EMPLOYED AND WAGES PAID.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

It should be noted that the first class includes all operatives, that is, those directly engaged in productive labor as well as skilled mechanics, while the second class includes all unskilled workmen other than operatives. The questions required a statement of the average number of men, women, and children, respectively, employed during the year in each class, also the actual amount of wages paid to each number.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

#### MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

| CLASSIFICATION OF INQUIRIES.   | Carriages and<br>wagons. | Foundry and<br>machine shop<br>products. (b) | Furniture—<br>factory prod-<br>ucts. | Printing and<br>publishing.<br>(b) | Slaughtering<br>and meat<br>packing. (b) |
|--|--------------------------|--|--------------------------------------|------------------------------------|--|
|  | (5 establish-<br>ments.) | (3 establish-<br>ments.)                     | (11 establish-<br>ments.)            | (7 establish-<br>ments.)           | (6 establish-<br>ments.)                 |
| CAPITAL EMPLOYED—Aggregate.....  | \$63,200                 | \$66,662                                     | \$236,156                            | \$43,045                           | \$2,026,500                              |
| HIRED PROPERTY—Total.....  | 17,350                   | 4,000  | 22,100                               | 16,350                             | 2,800                                    |
| PLANT—Total.....   | 31,650                   | 30,635                                       | 86,660                               | 17,350                             | 1,017,260                                |
| Land.....  | 16,000                   | 10,900                                       | 14,000                               | 50                                 | 407,300                                  |
| Buildings.....   | 13,700                   | 5,600  | 52,450                               | 100                                | 506,500                                  |
| Machinery, tools, and implements.....  | 1,950                    | 14,135                                       | 20,210                               | 17,200                             | 203,460                                  |
| LIVE ASSETS—Total.....   | 14,200                   | 32,027                                       | 127,396                              | 9,345                              | 1,006,440                                |
| Raw materials.....   | 3,350                    | 11,000                                       | 25,785                               | 610                                | 204,450                                  |
| Stock in process and finished product.....   | 5,400                    | 8,200  | 45,045                               | 525                                | 500,090                                  |
| Cash, bills and accounts receivable, and all sundries not<br>elsewhere reported..... | 5,450                    | 12,827                                       | 56,566                               | 8,210                              | 301,900                                  |
| WAGES PAID—Aggregate.....  | \$18,920                 | \$43,518                                     | \$96,228                             | \$29,499                           | \$105,888                                |
| Average number of hands employed during the year.....                                | 32                       | 66   | 131                                  | 52                                 | 395                                      |
| Males above 16 years.....  | 28                       | 66   | 98                                   | 33                                 | 368                                      |
| Females above 15 years.....  |                          |  | 5                                    | 13                                 |  |
| Children.....  |                          |  |                                      | 1                                  |  |
| Pieceworkers.....  | 4                        |  | 31                                   | 5                                  | 27                                       |
| MATERIALS USED—Aggregate cost.....   | \$27,367                 | \$105,306                                    | \$105,120                            | \$11,161                           | \$2,261,895                              |
| Principal materials.....   | 26,747                   | 97,450                                       | 101,600                              | 10,276                             | 2,240,695                                |
| Fuel.....  | 580                      | 6,356  | 2,720                                | 590                                | 11,200                                   |
| Mill supplies.....   |                          | 1,000  | 800                                  |                                    | 10,000                                   |
| All other materials.....   | 40                       |  |                                      | 295                                |  |
| MISCELLANEOUS EXPENSES—Aggregate.....  | \$2,731                  | \$2,359                                      | \$8,907                              | \$6,553                            | \$122,218                                |
| Amount paid for contract work.....   |                          | 340  | 1,492                                | 1,160                              | 240                                      |
| Rent.....  | 1,200                    |  |                                      | 200                                |  |
| Power and heat.....  |                          | 270  | 1,359                                | 173                                | 9,241                                    |
| Taxes.....   | 519                      | 355  | 2,206                                | 195                                | 10,112                                   |
| Insurance.....   | 512                      | 550  | 1,500                                | 220                                | 12,600                                   |
| Repairs, ordinary, of buildings and machinery.....                                   | 150                      | 744  | 900                                  | 165                                | 10,025                                   |
| Interest on cash used in the business.....   | 300                      | 100  | 1,450                                | 4,445                              | 80,000                                   |
| All sundries not elsewhere reported.....   | 50                       |  |                                      |                                    |  |
| GOODS MANUFACTURED—Aggregate value.....  | \$50,000                 | \$157,500                                    | \$227,151                            | \$51,585                           | \$2,674,848                              |
| Principal product.....   | 24,300                   | 157,500                                      | 185,200                              | 51,585                             | 2,673,322                                |
| All other products, including receipts from custom work and<br>repairing.....        | 25,700                   |  | 41,951                               |                                    | 1,526                                    |

<sup>a</sup> To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.

<sup>b</sup> Includes several branches of this industry, which will be specifically stated in final reports.

# CENSUS BULLETIN.

No. 289.

WASHINGTON, D. C.

October 26, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF ALTOONA, PENNSYLVANIA.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 22, 1892.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Altoona for the year ended May 31, 1890, prepared under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins in a form similar to this for principal cities not separately reported in 1880, to be followed by final reports containing data in detail respecting all industries for each city. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A statement is presented for 1890 in Table 1, showing the totals under general heads of the inquiry. The statements presented therewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

In 1880 the data relating to the manufactures of Altoona were included in the totals published for Blair county, therefore it is not practicable to present a comparative statement indicating the growth of manufacturing industry in the city during the decade, but the totals for the entire county at that date were as follows:

## BLAIR COUNTY: 1880.

|  |             |
|--|-------------|
| Number of establishments reported..... | 254         |
| Capital invested.....                  | \$3,017,563 |
| Number of hands employed.....          | 2,192       |
| Wages paid.....                        | \$677,371   |
| Value of materials used.....           | \$2,752,243 |
| Value of product.....                  | \$4,233,552 |

TABLE 1.—STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY.

| INDUSTRIES.             | Number industries reported. | Number establishments reporting. | Capital. | Hands employed. | Wages paid. | Cost of materials used. |             |
|-------------------------|-----------------------------|----------------------------------|----------|-----------------|-------------|-------------------------|-------------|
|                         |                             |                                  |          |                 |             |                         |             |
| All industries (a)..... | { 1880<br>1890              | 39                               | 152      | \$7,584,822     | 6,158       | \$3,462,087             | \$5,906,509 |

  

| INDUSTRIES.             | Miscellaneous expenses. | Value of product. | MUNICIPAL DATA. |                     |                           |                      |
|-------------------------|-------------------------|-------------------|-----------------|---------------------|---------------------------|----------------------|
|                         |                         |                   | Population.     | Assessed valuation. | Municipal debt. (b)       |                      |
| All industries (a)..... | { 1880<br>1890          | \$178,915         | \$9,937,942     | 19,710<br>30,337    | \$1,753,250<br>12,026,389 | \$389,700<br>510,836 |

<sup>a</sup> Statistics of manufactures for 1880 were included in totals published for Blair county.  
<sup>b</sup> The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries. Among other important industries, in which less than 3 establishments are reported, may be mentioned clay and pottery products, 1 establishment; flouring and grist mill products, 2 establishments; paving and paving materials, 1 establishment, and silk and silk goods, 1 establishment. The 5 establishments referred to report invested capital, \$257,902; hands employed, 223, and value of products, \$634,178.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate in each class, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES.

| CLASSIFICATION OF INQUIRIES.  | Iron and steel,<br>and foundry<br>and machine<br>shop products. | Liquors—<br>malt.        | Lumber—<br>planed.       | Printing and<br>publishing. | Tobacco—<br>cigars and<br>cigarettes. |
|---|---|--------------------------|--------------------------|-----------------------------|---------------------------------------|
|   | (a)<br>(3 establish-<br>ments.)                                 | (5 establish-<br>ments.) | (7 establish-<br>ments.) | (10 establish-<br>ments.)   | (5 establish-<br>ments.)              |
| CAPITAL EMPLOYED—Aggregate.....   | \$6,376,337   | \$192,099                | \$268,601                | \$122,153                   | \$18,587                              |
| HIRED PROPERTY—Total.....   |   | 22,000                   | 58,125                   | 22,000                      | 10,500                                |
| PLANT—Total.....  | 4,712,014   | 112,490                  | 57,176                   | 79,200                      | 600                                   |
| Land.....   | 252,500   | 43,000                   | 16,000                   | 13,500                      |                                       |
| Buildings.....  | 2,821,350   | 24,500                   | 13,000                   | 7,500                       |                                       |
| Machinery, tools, and implements.....   | 1,638,164   | 44,990                   | 28,176                   | 58,200                      | 600                                   |
| LIVE ASSETS—Total.....  | 1,664,323   | 57,609                   | 153,300                  | 20,953                      | 7,487                                 |
| Raw materials.....  | 1,078,025   | 5,494                    | 33,000                   | 6,250                       | 2,525                                 |
| Stock in process and finished product.....                                    | 496,798   | 21,615                   | 13,300                   | 1,710                       | 3,087                                 |
| Cash, bills and accounts receivable, and all sundries not elsewhere reported. | 89,500  | 30,500                   | 107,000                  | 12,993                      | 1,875                                 |
| WAGES PAID—Aggregate.....   | \$2,909,642   | \$24,860                 | \$96,545                 | \$58,602                    | \$11,327                              |
| Average number of hands employed during the year.....                         | 4,973   | 39                       | 182                      | 136                         | 25                                    |
| Males above 16 years.....   | 2,583   | 39                       | 179                      | 68                          | 9                                     |
| Females above 15 years.....   | 7   |                          |                          | 2                           | 2                                     |
| Children.....   | 3   |                          | 3                        | 47                          |                                       |
| Pieceworkers.....   | 2,380   |                          |                          | 19                          | 14                                    |
| MATERIALS USED—Aggregate cost.....  | \$4,856,650   | \$41,917                 | \$182,209                | \$24,551                    | \$14,163                              |
| Principal materials.....  | 4,704,038   | 37,489                   | 161,810                  | 22,240                      | 12,267                                |
| Fuel.....   | 126,150   | 4,068                    | 2,296                    | 860                         |                                       |
| Mill supplies.....  | 26,212  | 150                      | 1,557                    |                             |                                       |
| All other materials.....  | 250   | 210                      | 16,546                   | 1,451                       | 1,896                                 |
| MISCELLANEOUS EXPENSES—Aggregate.....   | \$21,317  | \$27,582                 | \$11,567                 | \$19,133                    | \$5,230                               |
| Amount paid for contract work.....  |   |                          |                          |                             |                                       |
| Rent.....   |   | 1,860                    | 4,620                    | 1,613                       | 856                                   |
| Power and heat.....   |   |                          |                          | 325                         |                                       |
| Taxes.....  | 930   | 520,817                  | 1,020                    | 366                         | 54,318                                |
| Insurance.....  | 1,047   | 900                      | 1,747                    | 614                         | 56                                    |
| Repairs, ordinary, of buildings and machinery.....                            | 12,250  | 2,025                    | 1,075                    | 535                         |                                       |
| Interest on cash used in the business.....                                    | 2,400   | 900                      | 1,940                    | 400                         |                                       |
| All sundries not elsewhere reported.....                                      | 4,690   | 1,080                    | 1,165                    | 15,250                      |                                       |
| GOODS MANUFACTURED—Aggregate value.....                                       | \$7,813,345   | \$146,869                | \$330,670                | \$120,421                   | \$37,495                              |
| Principal product.....  | 5,852,622   | 144,944                  | 271,130                  | 120,311                     | 37,495                                |
| All other products, including receipts from custom work and repairing.        | 1,990,723   | 1,925                    | 59,540                   | 110                         |                                       |

*a* Includes several branches of this industry, which will be specifically stated in final reports.  
*b* Includes internal revenue taxes.

ROBERT P. PORTER,  
*Superintendent of Census.*

# CENSUS BULLETIN.

No. 290.

WASHINGTON, D. C.

October 26, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF PORTLAND, OREGON.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 22, 1892.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Portland for the year ended May 31, 1890, prepared under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins in a form similar to this for principal cities not separately reported in 1880, to be followed by final reports containing data in detail respecting all industries for each city. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A statement is presented for 1890 in Table 1, showing the totals under general heads of the inquiry. The statements presented therewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

In 1880 the data relating to the manufactures of Portland were included in the totals published for Multnomah county, therefore it is not practicable to present a comparative statement indicating the growth of manufacturing industry in the city during the decade, but the totals for the entire county at that date were as follows:

### MULTNOMAH COUNTY: 1880.

|  |             |
|--|-------------|
| Number of establishments reported..... | 162         |
| Capital invested.....                  | \$1,958,025 |
| Number of hands employed.....          | 1,148       |
| Wages paid.....                        | \$700,878   |
| Value of materials used.....           | \$1,567,246 |
| Value of product.....                  | \$2,867,271 |

TABLE 1.—STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY.

| INDUSTRIES.             | Number industries reported. | Number establishments reporting. | Capital. | Hands employed. | Wages paid. | Cost of materials used. |              |
|-------------------------|-----------------------------|----------------------------------|----------|-----------------|-------------|-------------------------|--------------|
|                         |                             |                                  |          |                 |             |                         |              |
| All industries (a)..... | { 1880<br>1890              | 88                               | 504      | \$16,808,028    | 9,240       | \$7,176,733             | \$12,427,071 |

  

| INDUSTRIES.             | Miscellaneous expenses. | Value of product. | MUNICIPAL DATA. |                     |                            |                     |
|-------------------------|-------------------------|-------------------|-----------------|---------------------|----------------------------|---------------------|
|                         |                         |                   | Population.     | Assessed valuation. | Municipal debt. (b)        |                     |
| All industries (a)..... | { 1880<br>1890          | \$1,167,409       | \$24,429,449    | 17,577<br>46,385    | \$13,143,425<br>25,660,965 | \$76,500<br>700,000 |

<sup>a</sup> Statistics of manufactures for 1880 were included in totals published for Multnomah county.  
<sup>b</sup> The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate in each class, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES.

| CLASSIFICATION OF INQUIRIES.  | Awnings,<br>tents, and<br>sails. | Bridges.                 | Clothing—<br>men's, whole-<br>sale. | Confectionery.           | Furniture—<br>factory prod-<br>uct. |
|---|----------------------------------|--------------------------|-------------------------------------|--------------------------|-------------------------------------|
|   | (3 establish-<br>ments.)         | (4 establish-<br>ments.) | (5 establish-<br>ments.)            | (7 establish-<br>ments.) | (7 establish-<br>ments.)            |
| CAPITAL EMPLOYED—Aggregate.....   | \$337,253                        | \$529,450                | \$205,165                           | \$302,735                | \$559,172                           |
| HIRED PROPERTY—Total.....   | 81,660                           | 7,650                    | 85,450                              | 82,800                   | 195,310                             |
| PLANT—Total.....  | 22,060                           | 171,900                  | 1,975                               | 113,500                  | 164,862                             |
| Land.....   |                                  | 71,250                   |                                     | 50,000                   | 50,000                              |
| Buildings.....  |                                  | 56,150                   |                                     | 25,000                   | 70,000                              |
| Machinery, tools, and implements.....   | 22,060                           | 44,500                   | 1,975                               | 38,500                   | 44,862                              |
| LIVE ASSETS—Total.....  | 433,563                          | 349,900                  | 117,740                             | 106,385                  | 299,000                             |
| Raw materials.....  | 113,500                          | 80,000                   | 19,000                              | 19,075                   | 27,500                              |
| Stock in process and finished product.....  | 146,500                          | 215,000                  | 85,440                              | 29,300                   | 137,500                             |
| Cash, bills and accounts receivable, and all sundries not elsewhere reported..... | 173,563                          | 54,900                   | 13,300                              | 58,020                   | 134,000                             |
| WAGES PAID—Aggregate.....   | \$48,780                         | \$379,700                | \$50,060                            | \$80,556                 | \$253,100                           |
| Average number of hands employed during the year.....                             | 66                               | 516                      | 73                                  | 130                      | 334                                 |
| Males above 16 years.....   | 46                               | 516                      | 48                                  | 95                       | 273                                 |
| Females above 15 years.....   | 20                               |                          |                                     | 35                       | 8                                   |
| Children.....   |                                  |                          |                                     |                          | 3                                   |
| Pieceworkers.....   |                                  |                          | 25                                  |                          | 50                                  |
| MATERIALS USED—Aggregate cost.....  | \$369,085                        | \$443,470                | \$299,540                           | \$219,804                | \$543,296                           |
| Principal materials.....  | 368,080                          | 406,500                  | 296,500                             | 206,004                  | 529,721                             |
| Fuel.....   | 780                              | 970                      | 40                                  | 10,500                   | 5,575                               |
| Mill supplies.....  |                                  |                          |                                     |                          | 5,000                               |
| All other materials.....  | 225                              | 36,000                   | 3,000                               | 3,300                    | 3,000                               |
| MISCELLANEOUS EXPENSES—Aggregate.....   | \$17,192                         | \$9,750                  | \$56,823                            | \$13,556                 | \$58,894                            |
| Amount paid for contract work.....  |                                  |                          | 48,000                              |                          |                                     |
| Rent.....   | 6,140                            | 700                      | 6,420                               | 6,660                    | 19,660                              |
| Power and heat.....   |                                  | 1,200                    |                                     |                          | 300                                 |
| Taxes.....  | 1,155                            | 1,050                    | 158                                 | 3,334                    | 2,161                               |
| Insurance.....  | 1,987                            | 600                      | 745                                 | 1,154                    | 7,499                               |
| Repairs, ordinary, of buildings and machinery.....                                | 370                              | 300                      |                                     | 725                      | 2,567                               |
| Interest on cash used in the business.....  | 3,000                            | 2,400                    | 800                                 | 300                      | 8,488                               |
| All sundries not elsewhere reported.....  | 4,540                            | 3,500                    | 700                                 | 1,383                    | 18,219                              |
| GOODS MANUFACTURED—Aggregate value.....   | \$458,058                        | \$965,000                | \$462,970                           | \$396,700                | \$1,109,125                         |
| Principal product.....  | 457,808                          | 965,000                  | 462,970                             | 396,700                  | 1,100,125                           |
| All other products, including receipts from custom work and repairing.....        | 250                              |                          |                                     |                          | 9,000                               |

TABLE 2.--DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES--Continued.

| CLASSIFICATION OF INQUIRIES.  | Liquors--<br>malt.       | Lumber. (a)               | Printing and<br>publishing.<br>(a) | Slaughtering<br>and meat<br>packing--<br>wholesale. |
|---|--------------------------|---------------------------|------------------------------------|---|
|   | (3 establish-<br>ments.) | (17 establish-<br>ments.) | (26 establish-<br>ments.)          | (5 establish-<br>ments.)                            |
| CAPITAL EMPLOYED--Aggregate.....  | \$673,965                | \$2,067,364               | \$677,858                          | \$516,820   |
| HIRED PROPERTY--Total.....  |                          | 108,470                   | 252,685                            | 77,220  |
| PLANT--Total.....   | 489,446                  | 935,645                   | 263,289                            | 178,000   |
| Land.....   | 221,343                  | 522,000                   |                                    | 80,000  |
| Buildings.....  | 140,936                  | 108,735                   |                                    | 67,000  |
| Machinery, tools, and implements.....   | 127,167                  | 309,910                   | 263,289                            | 31,000  |
| LIVE ASSETS--Total.....   | 184,519                  | 1,023,249                 | 161,884                            | 261,600   |
| Raw materials.....  | 44,843                   | 262,925                   | 36,975                             | 58,000  |
| Stock in process and finished product.....  | 68,540                   | 267,119                   | 17,450                             | 54,600  |
| Cash, bills and accounts receivable, and all sundries not elsewhere reported..... | 71,136                   | 493,205                   | 107,459                            | 149,000   |
| WAGES PAID--Aggregate.....  | \$65,690                 | \$548,976                 | \$394,563                          | \$108,400   |
| Average number of hands employed during the year.....                             | 68                       | 708                       | 401                                | 100   |
| Males above 16 years.....   | 68                       | 701                       | 280                                | 99  |
| Females above 15 years.....   |                          |                           | 39                                 |   |
| Children.....   |                          | 3                         | 26                                 | 1   |
| Pieceworkers.....   |                          | 4                         | 56                                 |   |
| MATERIALS USED--Aggregate cost.....   | \$143,563                | \$903,870                 | \$168,056                          | \$1,222,330   |
| Principal materials.....  | 115,672                  | 855,342                   | 159,533                            | 1,214,180   |
| Fuel.....   | 18,891                   |                           | 4,784                              | 6,450   |
| Mill supplies.....  |                          | 28,452                    |                                    |   |
| All other materials.....  | 9,000                    | 20,076                    | 3,739                              | 1,700   |
| MISCELLANEOUS EXPENSES--Aggregate.....  | \$137,718                | \$94,971                  | \$105,798                          | \$16,718  |
| Amount paid for contract work.....  |                          |                           | 3,300                              |   |
| Rent.....   |                          | 10,998                    | 20,262                             | 6,200   |
| Power and heat.....   |                          | 2,000                     | 840                                |   |
| Taxes.....  | 681,890                  | 4,908                     | 1,753                              | 1,545   |
| Insurance.....  | 3,008                    | 8,690                     | 2,792                              | 3,248   |
| Repairs, ordinary, of buildings and machinery.....                                | 12,500                   | 37,070                    | 1,640                              | 1,000   |
| Interest on cash used in the business.....  |                          | 8,527                     | 4,514                              | 2,750   |
| All sundries not elsewhere reported.....  | 40,320                   | 22,778                    | 70,397                             | 1,975   |
| GOODS MANUFACTURED--Aggregate value.....  | \$533,348                | \$1,845,527               | \$811,083                          | \$1,570,935   |
| Principal product.....  | 533,348                  | 1,702,047                 | 810,511                            | 1,547,935   |
| All other products, including receipts from custom work and repairing.....        |                          | 143,480                   | 572                                | 23,000  |

a Includes several branches of this industry, which will be specifically stated in final reports.  
b Includes internal revenue taxes.

ROBERT P. PORTER,  
Superintendent of Census.

# CENSUS BULLETIN.

No. 291.

WASHINGTON, D. C.

October 26, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF COLUMBUS, OHIO.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 22, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Columbus for the year ended May 31, 1890, prepared under direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry with the returns of 1880 it will be observed that the item of "Miscellaneous expenses" is given for 1890 only. No previous census inquiry has embraced the cost incurred in manufacturing operations other than wages paid and materials used. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: cars, and general shop construction and repairs by steam railroad companies; millinery, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

### TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

|  |             |
|--|-------------|
| Number of establishments reported..... | 4           |
| Capital invested .....                 | \$744,402   |
| Number of hands employed.....          | 997         |
| Wages paid.....                        | \$579,875   |
| Cost of materials used .....           | \$1,084,850 |
| Miscellaneous expenses.....            | \$360       |
| Value of product at works .....        | \$1,684,078 |

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows :

| PERCENTAGES OF INCREASE.               |        |
|--|--------|
| Number of establishments reported..... | 27.53  |
| Capital invested.....                  | 137.09 |
| Number of hands employed.....          | 78.12  |
| Wages paid.....                        | 148.05 |
| Cost of materials used.....            | 44.75  |
| Value of product at works.....         | 72.74  |
| Population of city.....                | 70.68  |
| Assessed valuation of city.....        | 59.13  |
| Municipal debt less sinking fund.....  | 251.30 |

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid ; the wages have increased not only actually but relatively, the average wages per hand increasing from \$357 in 1880 to \$498 in 1890, or 39.50 per cent.

Part of this increase is undoubtedly due to the fact that in many industries relatively more men were employed in 1890, and less children; that the percentage of increase in the number of women employed has been less in many industries than in the number of adult males; and also to the fact that in 10 years many branches of industry have improved the grades of their products, and for this reason require more skilled and higher paid employés. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

Attention is called to the presentation of labor and wage statistics. The "average wages" paid to all classes employed has always proved a stumbling block in census reports. It is believed the Eleventh Census, in obtaining data to show the classification of labor employed, the average term of employment, the various rates of wages per week, and the average number of men, women, and children, respectively, employed at each rate in the various classes, has taken a step in advance, which will be shown in detail in final reports, and appreciated by students of these data.

  
 Superintendent of Census.

# STATISTICS OF MANUFACTURES: 1890.

## CITY OF COLUMBUS, OHIO.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

The instructions issued by this office to enumerators and special agents relating to the collection of statistics of manufactures were as follows:

It shall be their duty personally to visit every establishment of productive industry in their respective districts (except as noted) and to obtain the required information in the case of each manufacturing establishment.

The term "establishment of productive industry" must be understood in its broadest sense to embrace not only mills and factories but also the operation of all small establishments and the mechanical trades.

Restaurants, saloons, barber shops, the compounding of individual prescriptions by druggists and apothecaries, the operations of mercantile establishments, transportation corporations and lines, and professional services (except mechanical dentistry) are not considered as coming within the meaning of the law in this connection.

Great care must be taken by special agents and enumerators to guard against the omission from their returns of any establishment that comes properly within the scope of this investigation. \* \* \* They should have their eyes open to every indication of the presence of productive industry and should supplement personal observation by frequent and persistent inquiry.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

| INDUSTRIES. | Number industries reported. | Number establishments reporting. | Capital. (a) | Hands employed. | Wages paid. | Cost of materials used. |
|-------------|-----------------------------|----------------------------------|--------------|-----------------|-------------|-------------------------|
|             |                             |                                  |              |                 |             |                         |
|             | 87                          | 407                              | 13,498,358   | 10,776          | 5,445,032   | 9,095,882               |

  

| INDUSTRIES.         | Miscellaneous expenses. (b) | Value of product. | MUNICIPAL DATA. |                     |                     |
|---------------------|-----------------------------|-------------------|-----------------|---------------------|---------------------|
|                     |                             |                   | Population.     | Assessed valuation. | Municipal debt. (c) |
| All industries..... |                             | \$0,646,679       | 51,647          | \$27,439,382        | \$1,259,162         |
|                     | \$1,219,886                 | 13,347,675        | 88,150          | 43,663,270          | 4,423,400           |

a The value of hired property is not included for 1890, because it was not reported in 1880.

b No inquiry in 1880 relating to "Miscellaneous expenses".

c The amount stated represents the "net debt," or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 presents the statistics of 1880 and 1890 in the form of publication used in the reports for 1880. In comparing industrial statistics for 1880 and 1890 it should be borne in mind, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

The form of question respecting capital used at the census of 1880 was as follows: "Capital (real and personal) invested in the business". It became evident from the results then obtained that this question was neither sufficiently comprehensive nor properly understood, and therefore the full amount of capital employed in productive industry was not reported, thus forming an erroneous basis for deductions.

The present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

#### TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

#### LABOR EMPLOYED AND WAGES PAID.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

It should be noted that the first class includes all operatives, that is, those directly engaged in productive labor as well as skilled mechanics, while the second class includes all unskilled workmen other than operatives. The questions required a statement of the average number of men, women, and children, respectively, employed during the year in each class, also the actual amounts of wages paid to each number.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

#### MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

| CLASSIFICATION OF INQUIRIES.  | Boots and shoes—factory products.<br>(3 establishments.) | Carriages and wagons.<br>(b)<br>(16 establishments.) | Clay and pottery products.<br>(b)<br>(3 establishments.) | Coffee and spices—roasting and grinding.<br>(4 establishments.) | Flouring and grist mill products.<br>(3 establishments.) |
|---|--|--|--|---|--|
| CAPITAL EMPLOYED—Aggregate.....   | \$235, 225   | \$3, 601, 527  | \$260, 375   | \$165, 632  | \$84, 055  |
| HIRED PROPERTY—Total.....   | 56, 225  | 71, 650  |  | 54, 132   |  |
| PLANT—Total.....  | 30, 000  | 1, 013, 137  | 172, 500   | 19, 500   | 57, 500  |
| Land.....   |  | 355, 231   | 92, 100  |   | 8, 300   |
| Buildings.....  |  | 429, 088   | 45, 600  |   | 15, 600  |
| Machinery, tools, and implements.....   | 30, 000  | 228, 818   | 34, 800  | 19, 500   | 33, 600  |
| LIVE ASSETS—Total.....  | 140, 000   | 2, 516, 740  | 87, 875  | 92, 000   | 26, 555  |
| Raw materials.....  | 35, 000  | 253, 160   | 5, 500   | 35, 000   | 10, 540  |
| Stock in process and finished product.....  | 39, 000  | 945, 938   | 27, 075  | 6, 000  | 2, 015   |
| Cash, bills and accounts receivable, and all sundries not elsewhere reported..... | 66, 000  | 1, 317, 642  | 55, 300  | 51, 000   | 13, 000  |
| WAGES PAID—Aggregate.....   | \$90, 467  | \$1, 187, 171  | \$118, 447   | \$22, 004   | \$16, 174  |
| Average number of hands employed during the year.....                             | 220  | 2, 242   | 304  | 55  | 27   |
| Males above 16 years.....   | 26   | 1, 664   | 304  | 40  | 27   |
| Females above 15 years.....   | 4  | 31   |  | 6   |  |
| Children.....   | 13   | 26   |  |   |  |
| Pieceworkers.....   | 177  | 521  |  | 9   |  |
| MATERIALS USED—Aggregate cost.....  | \$215, 460   | \$1, 787, 792  | \$42, 509  | \$265, 233  | \$390, 758   |
| Principal materials.....  | 215, 000   | 1, 715, 383  | 4, 500   | 261, 695  | 370, 481   |
| Fuel.....   | 460  | 18, 958  | 37, 516  | 1, 445  | 2, 415   |
| Mill supplies.....  |  |  |  | 1, 498  | 2, 500   |
| All other materials.....  |  | 53, 451  | 403  | 595   | 14, 362  |
| MISCELLANEOUS EXPENSES—Aggregate.....   | \$28, 415  | \$104, 016   | \$23, 718  | \$9, 447  | \$9, 693   |
| Amount paid for contract work.....  |  | 21, 972  |  |   |  |
| Rent.....   | 4, 500   | 6, 450   |  | 4, 060  |  |
| Power and heat.....   | 1, 000   | 250  |  | 300   |  |
| Taxes.....  | 740  | 14, 547  | 2, 458   | 319   | 626  |
| Insurance.....  | 975  | 21, 060  | 1, 060   | 634   | 1, 167   |
| Repairs, ordinary, of buildings and machinery.....                                | 1, 000   | 16, 513  | 5, 000   | 350   | 200  |
| Interest on cash used in the business.....  | 2, 200   | 60, 540  | 2, 500   | 300   | 2, 600   |
| All sundries not elsewhere reported.....  | 18, 000  | 262, 684   | 12, 700  | 2, 984  | 5, 100   |
| GOODS MANUFACTURED—Aggregate value.....   | \$359, 000   | \$3, 928, 355  | \$249, 032   | \$428, 141  | \$429, 750   |
| Principal product.....  | 359, 000   | 3, 834, 499  | 249, 032   | 187, 876  | 426, 700   |
| All other products, including receipts from custom work and repairing.....        |  | 93, 856  |  | 240, 265  | 3, 050   |

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.  
b Includes several branches of this industry, which will be specifically stated in final reports.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

| CLASSIFICATION OF INQUIRIES.   | Foundry and<br>machine shop<br>products.<br><br>(18 establish-<br>ments.) | Hardware and<br>tools. (a)<br><br>(5 establish-<br>ments.) | Iron and steel.<br>(a)<br><br>(4 establish-<br>ments.) | Liquors—malt.<br><br>(3 establish-<br>ments.) | Lumber—<br>planed. (a)<br><br>(6 establish-<br>ments.) |
|--|---|--|--|---|--|
| CAPITAL EMPLOYED—Aggregate.....  | \$1,509,751   | \$444,758  | \$390,400  | \$1,023,000                                   | \$235,795  |
| Hired property—Total.....  | 42,711  | 79,120   | 71,424   |   | 31,315   |
| PLANT—Total.....   | 719,001   | 130,971  | 133,600  | 670,000                                       | 42,200   |
| Land.....  | 218,620   | 44,600   | 38,100   | 165,000                                       | 19,500   |
| Buildings.....   | 208,216   | 23,300   | 32,000   | 410,000                                       | 10,000   |
| Machinery, tools, and implements.....  | 292,165   | 63,071   | 63,500   | 95,000  | 12,700   |
| LIVE ASSETS—Total.....   | 748,039   | 234,667  | 185,376  | 353,000                                       | 162,230  |
| Raw materials.....   | 125,872   | 46,317   | 42,269   | 70,000  | 47,600   |
| Stock in process and finished product.....   | 201,174   | 98,700   | 27,792   | 103,000                                       | 9,180  |
| Cash, bills and accounts receivable, and all sundries not else-<br>where reported..... | 420,993   | 89,650   | 115,315  | 180,000                                       | 105,500  |
| WAGES PAID—Aggregate.....  | \$598,994   | \$102,236  | \$198,694  | \$152,700                                     | \$44,418   |
| Average number of hands employed during the year.....                                  | 997   | 265  | 352  | 213   | 74   |
| Males above 16 years.....  | 866   | 104  | 317  | 206   | 74   |
| Females above 15 years.....  | 5   | 11   |  | 1   |  |
| Children.....  | 16  | 3  |  | 6   |  |
| Pieceworkers.....  | 110   | 147  | 35   |   |  |
| MATERIALS USED—Aggregate cost.....   | \$611,438   | \$181,948  | \$707,843  | \$278,532                                     | \$240,085  |
| Principal materials.....   | 509,644   | 139,579  | 508,332  | 257,300                                       | 225,900  |
| Fuel.....  | 60,067  | 13,970   | 150,344  | 21,232  | 4,385  |
| Mill supplies.....   | 800   | 2,052  |  |   | 5,800  |
| All other materials.....   | 40,927  | 26,347   | 49,167   |   | 4,000  |
| MISCELLANEOUS EXPENSES—Aggregate.....  | \$66,897  | \$9,259  | \$27,164   | \$264,838                                     | \$6,467  |
| Amount paid for contract work.....   |   |  |  |   |  |
| Rent.....  | 3,630   | 5,740  | 6,500  |   | 2,780  |
| Power and heat.....  | 200   | 180  | 240  |   | 240  |
| Taxes.....   | 6,821   | 827  | 1,797  | b 160,570                                     | 1,407  |
| Insurance.....   | 3,947   | 1,686  | 847  | 3,000   | 415  |
| Repairs, ordinary, of buildings and machinery.....                                     | 19,406  | 625  | 10,100   | 7,000   | 625  |
| Interest on cash used in the business.....   | 8,120   | 201  | 3,180  |   | 1,000  |
| All sundries not elsewhere reported.....   | 24,773  |  | 4,600  | 94,268  |  |
| GOODS MANUFACTURED—Aggregate value.....  | \$1,521,473   | \$370,059  | \$964,882  | \$902,699                                     | \$321,700  |
| Principal product.....   | 1,353,996   | 359,459  | 955,812  | 902,699                                       | 308,300  |
| All other products, including receipts from custom work and repairing.....             | 167,507   | 10,600   | 9,070  |   | 15,400   |

a Includes several branches of this industry, which will be specifically stated in final reports.  
b Includes internal revenue taxes.

# CENSUS BULLETIN.

No. 292.

WASHINGTON, D. C.

November 1, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF WILLIAMSPORT, PENNSYLVANIA.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 29, 1892.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendents of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Williamsport for the year ended May 31, 1890, prepared under direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins in a form similar to this for principal cities not separately reported in 1880, to be followed by final reports containing data in detail respecting all industries for each city. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A statement is presented for 1890 in Table 1, showing the totals under general heads of the inquiry. The statements presented therewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

In 1880 the data relating to the manufactures of Williamsport were included in the totals published for Lycoming county, therefore it is not practicable to present a comparative statement indicating the growth of manufacturing industry in the city during the decade, but the totals for the entire county at that date were as follows:

### LYCOMING COUNTY: 1880.

|   |             |
|---|-------------|
| Number of establishments reported ..... | 612         |
| Capital invested.....                   | \$6,968,462 |
| Number of hands employed.....           | 4,510       |
| Wages paid.....                         | \$1,221,510 |
| Value of materials used .....           | \$5,880,083 |
| Value of product.....                   | \$9,184,295 |

TABLE 1.—STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY.

| INDUSTRIES.             |                | Number industries reported. | Number establishments reporting. | Capital.     | Hands employed. | Wages paid. | Cost of materials used. |
|-------------------------|----------------|-----------------------------|----------------------------------|--------------|-----------------|-------------|-------------------------|
|                         |                |                             |                                  |              |                 |             |                         |
| All industries (a)..... | { 1880<br>1890 | 55                          | 257                              | \$10,243,487 | 5,200           | \$2,315,811 | \$5,024,170             |

  

| INDUSTRIES.             |                | Miscellaneous expenses. | Value of product | MUNICIPAL DATA.  |                          |                      |
|-------------------------|----------------|-------------------------|------------------|------------------|--------------------------|----------------------|
|                         |                |                         |                  | Population.      | Assessed valuation.      | Municipal debt. (b)  |
| All industries (a)..... | { 1880<br>1890 | \$553,591               | \$9,601,329      | 18,934<br>27,132 | \$6,224,350<br>9,902,409 | \$651,272<br>701,358 |

<sup>a</sup> Statistics of manufactures for 1880 were included in totals published for Lycoming county. The totals for 1890 include a return from 1 establishment engaged in the manufacture of "timber products not made in mill". This industry is reported as of the place where the office of the establishment is situated, because it is not practicable to exactly locate its operations within the limits of a county or municipality.

<sup>b</sup> The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries. To avoid disclosure of the operations of individual establishments, only such important or characteristic industries as have 3 or more establishments engaged therein are included in this table. Among other important industries, in which less than 3 establishments are reported, may be mentioned boots and shoes, factory product, 1 establishment; flouring and grist mill products, 2 establishments; furnishing goods, men's, 2 establishments; iron and steel, nails and spikes, cut and wrought, 1 establishment; looking-glass and picture frames, 1 establishment; musical instruments and materials, not elsewhere specified, 1 establishment; paints, 2 establishments; sewing machines and attachments, 1 establishment; shirts, factory product, 2 establishments; wirework, including wire rope and cable, 1 establishment, and woolen goods, 1 establishment. The 15 establishments referred to report invested capital, \$1,100,318; hands employed, 930, and value of products, \$1,923,190.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate in each class, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES.

| CLASSIFICATION OF INQUIRIES.  | Carriages<br>and wagons. | Confection-<br>ery.      | Foundry<br>and<br>machine shop<br>products. | Furniture—<br>factory pro-<br>duct. | Kindling<br>wood.        |
|---|--------------------------|--------------------------|---|-------------------------------------|--------------------------|
|   | (4 establish-<br>ments.) | (6 establish-<br>ments.) | (11 establish-<br>ments.)                   | (4 establish-<br>ments.)            | (3 establish-<br>ments.) |
| CAPITAL EMPLOYED—Aggregate.....   | \$43,302                 | \$91,234                 | \$548,249                                   | \$709,847                           | \$180,418                |
| HIRED PROPERTY—Total.....   | 9,950                    | 33,650                   | 20,000                                      | 3,925                               | 2,550                    |
| PLANT—Total.....  | 11,050                   | 27,800                   | 250,542                                     | 260,792                             | 84,000                   |
| Land.....   | 3,500                    | 6,500                    | 51,900                                      | 32,000                              | 9,000                    |
| Buildings.....  | 4,500                    | 11,500                   | 48,800                                      | 119,618                             | 28,000                   |
| Machinery, tools, and implements.....   | 3,050                    | 9,800                    | 149,842                                     | 109,144                             | 47,000                   |
| LIVE ASSETS—Total.....  | 22,302                   | 29,784                   | 277,707                                     | 445,130                             | 43,868                   |
| Raw materials.....  | 5,198                    | 5,214                    | 47,451                                      | 63,698                              | 28,018                   |
| Stock in process and finished product.....  | 9,829                    | 7,770                    | 57,500                                      | 166,005                             | 7,300                    |
| Cash, bills and accounts receivable, and all sundries not elsewhere reported..... | 7,275                    | 16,800                   | 172,756                                     | 215,427                             | 8,550                    |
| WAGES PAID—Aggregate.....   | \$19,330                 | \$34,188                 | \$194,263                                   | \$234,658                           | \$78,327                 |
| Average number of hands employed during the year.....                             | 37                       | 82                       | 359   | 528                                 | 276                      |
| Males above 16 years.....   | 34                       | 46                       | 357   | 428                                 | 99                       |
| Females above 15 years.....   |                          | 28                       | 2   |                                     | 11                       |
| Children.....   |                          | 6                        |   |                                     | 2                        |
| Pieceworkers.....   | 3                        | 2                        |   | 100                                 | 164                      |
| MATERIALS USED—Aggregate cost.....  | \$19,206                 | \$66,291                 | \$185,783                                   | \$260,180                           | \$43,986                 |
| Principal materials.....  | 17,301                   | 50,192                   | 175,503                                     | 251,501                             | 42,640                   |
| Fuel.....   | 305                      | 1,249                    | 6,530                                       | 7,204                               | 120                      |
| Mill supplies.....  |                          | 100                      | 2,112                                       | 1,475                               | 26                       |
| All other materials.....  | 1,600                    | 14,750                   | 1,638                                       |                                     | 1,200                    |
| MISCELLANEOUS EXPENSES—Aggregate.....   | \$1,471                  | \$4,486                  | \$13,558                                    | \$74,970                            | \$39,287                 |
| Amount paid for contract work.....  |                          |                          |   | 13,240                              |                          |
| Rent.....   | 790                      | 2,346                    | 1,614                                       | 300                                 | 237                      |
| Power and heat.....   |                          |                          | 156   |                                     |                          |
| Taxes.....  | 148                      | 395                      | 2,212                                       | 2,367                               | 918                      |
| Insurance.....  | 363                      | 440                      | 2,050                                       | 8,921                               | 1,550                    |
| Repairs, ordinary, of buildings and machinery.....                                | 100                      |                          | 1,150                                       | 5,492                               | 3,924                    |
| Interest on cash used in the business.....  |                          | 480                      | 1,690                                       | 11,029                              | 1,183                    |
| All sundries not elsewhere reported.....  | 70                       | 825                      | 4,686                                       | 33,630                              | 31,475                   |
| GOODS MANUFACTURED—Aggregate value.....   | \$62,507                 | \$180,550                | \$470,601                                   | \$668,410                           | \$186,266                |
| Principal product.....  | 51,427                   | 174,800                  | 372,688                                     | 664,522                             | 186,231                  |
| All other products, including receipts from custom work and repairing.....        | 11,080                   | 5,750                    | 97,913                                      | 3,888                               | 35                       |

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

| CLASSIFICATION OF INQUIRIES.   | Leather—<br>tanned and<br>curried.<br>(3 establish-<br>ments.) | Lumber—<br>sawed.<br>(19 establish-<br>ments.) | Lumber—<br>planed.<br>(10 establish-<br>ments.) | Printing and<br>publishing.<br>(a)<br>(8 establish-<br>ments.) | Saddlery and<br>harness.<br>(8 establish-<br>ments.) |
|--|--|--|---|--|--|
| CAPITAL EMPLOYED—Aggregate .....   | \$564,541  | \$5,953,055                                    | \$254,736                                       | \$243,850  | \$53,753   |
| HIRED PROPERTY—Total.....  |  | 122,000  | 33,500  | 60,300   | 21,100   |
| PLANT—Total.....   | 85,600   | 2,328,737                                      | 110,161   | 127,200  | 2,300  |
| Land.....  | 23,500   | 1,678,700                                      | 20,200  |  | 500  |
| Buildings.....   | 56,000   | 166,787  | 39,100  |  | 200  |
| Machinery, tools, and implements.....  | 6,100  | 483,250  | 50,861  | 127,200  | 1,600  |
| LIVE ASSETS—Total.....   | 478,941  | 3,502,318                                      | 111,075   | 56,350   | 30,353   |
| Raw materials.....   | 30,325   | 916,023  | 27,486  | 10,450   | 7,750  |
| Stock in process and finished product.....   | 353,431  | 1,236,003                                      | 19,086  | 3,600  | 10,248   |
| Cash, bills and accounts receivable, and all sundries not<br>elsewhere reported..... | 35,185   | 1,300,292                                      | 64,503  | 42,300   | 12,355   |
| WAGES PAID—Aggregate.....  | \$68,196   | \$583,471                                      | \$96,118  | \$91,254   | \$15,057   |
| Average number of hands employed during the year.....                                | 142  | 1,308  | 227   | 153  | 29   |
| Males above 16 years.....  | 79   | 1,203  | 207   | 105  | 29   |
| Females above 15 years.....  |  | 1  |   | 3  |  |
| Children.....  |  | 3  | 6   | 20   |  |
| Pieceworkers.....  | 63   | 101  | 14  | 35   |  |
| MATERIALS USED—Aggregate cost.....   | \$552,557  | \$1,997,178                                    | \$203,729                                       | \$48,699   | \$17,393   |
| Principal materials.....   | 552,549  | 1,953,967                                      | 198,019   | 41,672   | 16,750   |
| Fuel.....  |  |  | 882   | 827  | 48   |
| Mill supplies.....   |  | 43,211   | 3,671   |  |  |
| All other materials.....   | 8  |  | 1,157   | 6,200  | 595  |
| MISCELLANEOUS EXPENSES—Aggregate.....  | \$15,969   | \$225,164                                      | \$14,808  | \$22,345   | \$2,350  |
| Amount paid for contract work.....   |  | 46,589   |   | 350  |  |
| Rent.....  |  | 10,800   | 2,893   | 4,515  | 1,677  |
| Power and heat.....  |  |  |   | 900  |  |
| Taxes.....   | 1,632  | 30,763   | 910   | 146  | 153  |
| Insurance.....   | 3,795  | 44,135   | 3,869   | 949  | 160  |
| Repairs, ordinary, of buildings and machinery.....                                   | 6,800  | 38,865   | 2,245   | 950  |  |
| Interest on cash used in the business.....   | 162  | 34,609   | 674   |  |  |
| All sundries not elsewhere reported.....   | 3,580  | 19,403   | 4,217   | 14,535   | 360  |
| GOODS MANUFACTURED—Aggregate value.....  | \$741,143  | \$3,331,983                                    | \$373,666                                       | \$186,252  | \$41,361   |
| Principal product.....   | 731,843  | 3,122,469                                      | 335,680   | 185,952  | 31,380   |
| All other products, including receipts from custom work and<br>repairing.....        | 9,300  | 209,464  | 37,986  | 300  | 9,981  |

<sup>a</sup> Includes several branches of this industry, which will be specifically stated in final reports.

ROBERT P. PORTER,  
Superintendent of Census.

# CENSUS BULLETIN.

No. 293.

WASHINGTON, D. C.

November 1, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF YOUNGSTOWN, OHIO.

DEPARTMENT OF THE INTERIOR,  
CENSUS OFFICE,

WASHINGTON, D. C., October 29, 1892.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned to the general enumerators as was practicable.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Youngstown for the year ended May 31, 1890, prepared under direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins in a form similar to this for principal cities not separately reported in 1880, to be followed by final reports containing data in detail respecting all industries for each city. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A statement is presented for 1890 in Table 1, showing the totals under general heads of the inquiry. The statements presented therewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

In 1880 the data relating to the manufactures of Youngstown were included in the totals published for Mahoning county, therefore it is not practicable to present a comparative statement indicating the growth of manufacturing industry in the city during the decade, but the totals for the entire county at that date were as follows:

### MAHONING COUNTY: 1880.

|  |             |
|--|-------------|
| Number of establishments reported..... | 320         |
| Capital invested.....                  | \$4,871,691 |
| Number of hands employed.....          | 3,957       |
| Wages paid.....                        | \$1,702,668 |
| Value of materials used.....           | \$7,310,399 |
| Value of product.....                  | \$9,847,238 |

TABLE I.—STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY.

| INDUSTRIES.             | Number industries reported. | Number establishments reporting. | Capital. | Hands employed. | Wages paid. | Cost of materials used. |             |
|-------------------------|-----------------------------|----------------------------------|----------|-----------------|-------------|-------------------------|-------------|
|                         |                             |                                  |          |                 |             |                         |             |
| All industries (a)..... | { 1880<br>1890              | 36                               | 140      | \$5,894,572     | 4,887       | \$3,071,123             | \$7,214,151 |

  

| INDUSTRIES.             | Miscellaneous expenses. | Value of product. | MUNICIPAL DATA. |                     |                          |                      |
|-------------------------|-------------------------|-------------------|-----------------|---------------------|--------------------------|----------------------|
|                         |                         |                   | Population.     | Assessed valuation. | Municipal debt. (b)      |                      |
| All industries (a)..... | { 1880<br>1890          | \$305,018         | \$12,964,562    | 15,435<br>33,220    | \$4,459,340<br>7,001,020 | \$193,407<br>309,143 |

<sup>a</sup> Statistics of manufactures for 1880 were included in totals published for Mahoning county.

<sup>b</sup> The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries. To avoid disclosure of the operations of individual establishments, only such important or characteristic industries as have 3 or more establishments engaged therein are included in this table. Among other important industries, in which less than 3 establishments are reported, may be mentioned, clay and pottery products, 1 establishment; flouring and grist mill products, 2 establishments. The 3 establishments referred to report invested capital, \$157,284; hands employed, 41, and value of products, \$256,874.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate in each class, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES.

| CLASSIFICATION OF INQUIRIES.  | Carriages and wagons.<br>(3 establishments.) | Confectionery.<br>(5 establishments.) | Foundry and machine shop products.<br>(3 establishments.) | Iron and steel. (a)<br>(8 establishments.) | Lumber—planing mill products. (a)<br>(4 establishments.) |
|---|--|---------------------------------------|---|--|--|
| CAPITAL EMPLOYED—Aggregate.....   | \$23,650                                     | \$35,570                              | \$341,050   | \$4,946,104                                | \$176,125  |
| HIRED PROPERTY—Total.....   | 2,750  | 28,800                                |   | 93,400                                     | 24,250   |
| PLANT—Total.....  | 11,100                                       | 4,380                                 | 191,000   | 2,506,140                                  | 36,875   |
| Land.....   | 9,000  |                                       | 25,000  | 383,400                                    | 10,000   |
| Buildings.....  | 1,500  | 800                                   | 30,000  | 680,000                                    | 10,500   |
| Machinery, tools, and implements.....   | 600  | 3,580                                 | 136,000   | 1,442,740                                  | 16,375   |
| LIVE ASSETS—Total.....  | 9,800  | 2,300                                 | 150,050   | 2,346,564                                  | 115,000  |
| Raw materials.....  | 1,800  | 410                                   | 60,000  | 481,359                                    | 31,000   |
| Stock in process and finished product.....  | 2,000  | 430                                   | 79,050  | 565,951                                    | 14,000   |
| Cash, bills and accounts receivable, and all sundries not elsewhere reported..... | 6,000  | 1,550                                 | 11,000  | 1,299,254                                  | 70,000   |
| WAGES PAID—Aggregate.....   | \$10,778                                     | \$8,438                               | \$240,533   | \$2,491,392                                | \$48,151   |
| Average number of hands employed during the year.....                             | 20   | 18                                    | 479   | 3,776                                      | 75   |
| Males above 16 years.....   | 18   | 17                                    | 465   | 3,698                                      | 74   |
| Females above 15 years.....   |  | 1                                     |   | 3  |  |
| Children.....   |  |                                       | 14  | 75   | 1  |
| Pieceworkers.....   | 2  |                                       |   |  |  |
| MATERIALS USED—Aggregate cost.....  | \$5,776                                      | \$13,416                              | \$96,046  | \$6,332,311                                | \$228,215  |
| Principal materials.....  | 5,591  | 12,446                                | 58,846  | 5,123,708                                  | 224,500  |
| Fuel.....   | 185  | 201                                   | 19,600  | 982,185                                    | 1,890  |
| Mill supplies.....  |  | 84                                    | 1,100   |  | 1,725  |
| All other materials.....  |  | 685                                   | 16,500  | 226,418                                    | 100  |
| MISCELLANEOUS EXPENSES—Aggregate.....   | \$655  | \$2,791                               | \$3,496   | \$238,910                                  | \$7,310  |
| Amount paid for contract work.....  |  |                                       |   |  |  |
| Rent.....   | 254  | 2,021                                 |   | 7,500                                      | 2,200  |
| Power and heat.....   |  |                                       |   |  |  |
| Taxes.....  | 106  | 95                                    | 1,116   | 14,485                                     | 645  |
| Insurance.....  | 70   | 115                                   | 830   | 17,685                                     | 1,465  |
| Repairs, ordinary, of buildings and machinery.....                                | 155  | 245                                   | 1,000   | 99,248                                     | 825  |
| Interest on cash used in the business.....  |  |                                       | 400   | 44,188                                     | 475  |
| All sundries not elsewhere reported.....  | 70   | 315                                   | 150   | 58,804                                     | 1,700  |
| GOODS MANUFACTURED—Aggregate value.....   | \$19,294                                     | \$27,903                              | \$1,920,425   | \$9,676,050                                | \$357,800  |
| Principal product.....  | 7,494  | 27,203                                | 1,885,625   | 9,613,907                                  | 296,300  |
| All other products, including receipts from custom work and repairing.....        | 11,800                                       | 700                                   | 34,800  | 62,143                                     | 61,500   |

a Includes several branches of this industry, which will be specifically stated in final reports.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

| CLASSIFICATION OF INQUIRIES.  | Mineral and<br>soda waters.<br>—<br>(3 establish-<br>ments.) | Monuments<br>and tomb-<br>stones.<br>—<br>(3 establish-<br>ments.) | Saddlery and<br>harness.<br>—<br>(3 establish-<br>ments.) | Tobacco—<br>cigars and<br>cigarettes.<br>—<br>(5 establish-<br>ments.) |
|---|--|--|---|--|
| CAPITAL EMPLOYED—Aggregate.....   | \$10,595   | \$19,870   | \$14,125  | \$19,315   |
| HIRED PROPERTY—Total.....   |  | 4,350  | 8,250   | 9,840  |
| PLANT—Total.....  | 8,900  | 5,620  | 550   | 495  |
| Land.....   | 1,100  | 3,000  |   |  |
| Buildings.....  | 1,500  | 2,200  |   |  |
| Machinery, tools, and implements.....   | 6,300  | 420  | 550   | 495  |
| LIVE ASSETS—Total.....  | 1,695  | 9,900  | 5,325   | 8,980  |
| Raw materials.....  | 250  | 1,250  | 1,650   | 3,500  |
| Stock in process and finished product.....  | 145  | 4,600  | 1,800   | 2,080  |
| Cash, bills and accounts receivable, and all sundries not elsewhere reported..... | 1,300  | 4,050  | 1,875   | 3,400  |
| WAGES PAID—Aggregate.....   | \$5,202  | \$8,500  | \$8,534   | \$13,167   |
| Average number of hands employed during the year.....                             | 9  | 12   | 14  | 27   |
| Males above 16 years.....   | 9  | 11   | 13  | 11   |
| Females above 15 years.....   |  |  |   | 2  |
| Children.....   |  |  |   | 2  |
| Pieceworkers.....   |  | 1  | 1   | 12   |
| MATERIALS USED—Aggregate cost.....  | \$4,093  | \$11,170   | \$9,259   | \$11,124   |
| Principal materials.....  | 3,393  | 11,050   | 9,241   | 9,366  |
| Fuel.....   |  | 95   | 18  |  |
| Mill supplies.....  |  |  |   |  |
| All other materials.....  | 700  | 25   |   | 1,158  |
| MISCELLANEOUS EXPENSES—Aggregate.....   | \$819  | \$1,001  | \$795   | \$9,642  |
| Amount paid for contract work.....  |  |  |   | 5,460  |
| Rent.....   |  | 360  | 570   | 799  |
| Power and heat.....   |  |  |   |  |
| Taxes.....  | 67   | 106  | 75  | 63,010   |
| Insurance.....  | 42   | 130  | 60  | 115  |
| Repairs, ordinary, of buildings and machinery.....                                | 410  | 100  | 90  | 40   |
| Interest on cash used in the business.....  |  | 220  |   |  |
| All sundries not elsewhere reported.....  | 300  | 85   |   | 218  |
| GOODS MANUFACTURED—Aggregate value.....   | \$21,822   | \$21,600   | \$19,100  | \$33,585   |
| Principal product.....  | 21,822   | 21,600   | 10,100  | 33,585   |
| All other products, including receipts from custom work and repairing.....        |  |  | 9,000   |  |

a Includes internal revenue taxes.

ROBERT P. PORTER,  
Superintendent of Census.

# CENSUS BULLETIN.

No. 294.

WASHINGTON, D. C.

November 1, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF CHELSEA, MASSACHUSETTS.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 29, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Chelsea for the year ended May 31, 1890, prepared under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry with the returns of 1880 it will be observed that the item of "Miscellaneous expenses" is given for 1890 only. No previous census inquiry has embraced the cost incurred in manufacturing operations other than wages paid and materials used. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: illuminating gas; millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

### TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

|   |           |
|---|-----------|
| Number of establishments reported ..... | 62        |
| Capital invested.....                   | \$356,336 |
| Number of hands employed .....          | 183       |
| Wages paid.....                         | \$83,039  |
| Cost of materials used .....            | \$38,822  |
| Miscellaneous expenses.....             | \$21,201  |
| Value of product at works .....         | \$211,439 |

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

| PERCENTAGES OF INCREASE.                |        |
|---|--------|
| Number of establishments reported ..... | 75.48  |
| Capital invested .....                  | 268.32 |
| Number of hands employed .....          | 96.60  |
| Wages paid .....                        | 165.09 |
| Cost of materials used.....             | 71.50  |
| Value of product at works.....          | 104.37 |
| Population of city.....                 | 28.13  |
| Assessed valuation of city.....         | 34.88  |

Decrease of municipal debt less sinking fund, 17.38 per cent.

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$411 in 1880 to \$555 in 1890, or 35.04 per cent.

Part of this increase is undoubtedly due to the fact that in many industries relatively more men were employed in 1890 and less children; that the percentage of increase in the number of women employed has been less in many industries than in the number of adult males; and also to the fact that in 10 years many branches of industry have improved the grades of their products, and for this reason require more skilled and higher paid employés. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

Attention is called to the presentation of labor and wage statistics. The "average wages" paid to all classes employed has always proved a stumbling block in census reports. It is believed the Eleventh Census, in obtaining data to show the classification of labor employed, the average term of employment, the various rates of wages per week, and the average number of men, women, and children, respectively, employed at each rate in the various classes, has taken a step in advance, which will be shown in detail in final reports, and appreciated by students of these data.

*Robert T. Porter*

*Superintendent of Census.*

# STATISTICS OF MANUFACTURES: 1890.

## CITY OF CHELSEA, MASSACHUSETTS.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

The instructions issued by this office to enumerators and special agents relating to the collection of statistics of manufactures were as follows:

It shall be their duty personally to visit every establishment of productive industry in their respective districts (except as noted) and to obtain the required information in the case of each manufacturing establishment.

The term "establishment of productive industry" must be understood in its broadest sense to embrace not only mills and factories but also the operation of all small establishments and the mechanical trades.

Restaurants, saloons, barber shops, the compounding of individual prescriptions by druggists and apothecaries, the operations of mercantile establishments, transportation corporations and lines, and professional services (except mechanical dentistry) are not considered as coming within the meaning of the law in this connection.

Great care must be taken by special agents and enumerators to guard against the omission from their returns of any establishment that comes properly within the scope of this investigation. \* \* \* They should have their eyes open to every indication of the presence of productive industry and should supplement personal observation by frequent and persistent inquiry.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

| INDUSTRIES. | Number industries reported. | Number establishments reporting. | Capital. (a) | Hands employed. | Wages paid. | Cost of materials used. |                     |
|-------------|-----------------------------|----------------------------------|--------------|-----------------|-------------|-------------------------|---------------------|
|             |                             |                                  |              |                 |             |                         | All industries..... |

  

| INDUSTRIES.         | Miscellaneous expenses. (b) | Value of product.        | MUNICIPAL DATA.  |                            |                          |
|---------------------|-----------------------------|--------------------------|------------------|----------------------------|--------------------------|
|                     |                             |                          | Population.      | Assessed valuation.        | Municipal debt. (c)      |
| All industries..... | { 1880<br>1890              | \$3,846,250<br>8,072,048 | 21,782<br>27,909 | \$15,419,499<br>20,798,339 | \$1,554,496<br>1,284,400 |

<sup>a</sup> The value of hired property is not included for 1890, because it was not reported in 1880.

<sup>b</sup> No inquiry in 1890 relating to "Miscellaneous expenses".

<sup>c</sup> The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 presents the statistics of 1880 and 1890 in the form of publication used in the reports for 1880. In comparing industrial statistics for 1880 and 1890 it should be borne in mind, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

The form of question respecting capital used at the census of 1880 was as follows: "Capital (real and personal) invested in the business". It became evident from the results then obtained that this question was neither sufficiently comprehensive nor properly understood, and therefore the full

amount of capital employed in productive industry was not reported, thus forming an erroneous basis for deductions.

The present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

#### TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

#### LABOR EMPLOYED AND WAGES PAID.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

It should be noted that the first class includes all operatives, that is, those directly engaged in productive labor as well as skilled mechanics, while the second class includes all unskilled workmen other than operatives. The questions required a statement of the average number of men, women, and children, respectively, employed during the year in each class, also the actual amount of wages paid to each number.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

#### MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

| CLASSIFICATION OF INQUIRIES.  | Foundry and<br>machine shop<br>products.<br>(5 establish-<br>ments.) | Grease and<br>tallow.<br>(4 establish-<br>ments.) | Leather-<br>tanned and<br>curried.<br>(3 establish-<br>ments.) | Rubber and<br>elastic goods.<br>(8 establish-<br>ments.) |
|---|--|---|--|--|
| CAPITAL EMPLOYED—Aggregate.....   | \$741,560  | \$63,637  | \$29,800   | \$2,709,814  |
| HIRED PROPERTY—Total.....   | 27,100   | 22,840  |  | 156,460  |
| PLANT—Total.....  | 218,700  | 14,200  | 24,300   | 797,109  |
| Land.....   | 103,000  | 5,800   | 2,800  | 108,600  |
| Buildings.....  | 47,000   | 3,200   | 12,900   | 189,237  |
| Machinery, tools, and implements.....   | 68,700   | 5,200   | 8,600  | 499,272  |
| LIVE ASSETS—Total.....  | 495,760  | 26,597  | 5,500  | 1,756,245  |
| Raw materials.....  | 56,960   | 10,100  | 1,000  | 446,680  |
| Stock in process and finished product.....  | 82,300   | 4,250   | 3,000  | 687,238  |
| Cash, bills and accounts receivable, and all sundries not elsewhere reported..... | 356,500  | 12,247  | 1,500  | 622,327  |
| WAGES PAID—Aggregate.....   | \$217,999  | \$15,724  | \$20,820   | \$482,877  |
| Average number of hands employed during the year.....                             | 341  | 25  | 30   | 945  |
| Males above 16 years.....   | 165  | 25  | 30   | 556  |
| Females above 15 years.....   | 1  |   |  | 177  |
| Children.....   |  |   |  |  |
| Pieceworkers.....   | 175  |   |  | 212  |
| MATERIALS USED—Aggregate cost.....  | \$134,970  | \$88,266  | \$63,450   | \$1,891,102  |
| Principal materials.....  | 106,647  | 87,261  | 61,750   | 1,502,480  |
| Fuel.....   | 17,598   | 645   | 1,250  | 25,569   |
| Mill supplies.....  | 25   |   |  | 11,025   |
| All other materials.....  | 10,700   | 360   | 450  | 352,028  |
| MISCELLANEOUS EXPENSES—Aggregate.....   | \$36,478   | \$3,225   | \$1,285  | \$213,034  |
| Amount paid for contract work.....  |  |   |  |  |
| Rent.....   | 2,200  | 1,380   |  | 10,967   |
| Power and heat.....   | 150  |   |  | 325  |
| Taxes.....  | 7,143  | 152   | 285  | 12,477   |
| Insurance.....  | 2,795  | 373   | 390  | 11,241   |
| Repairs, ordinary, of buildings and machinery.....                                | 1,315  | 120   | 535  | 47,556   |
| Interest on cash used in the business.....  | 2,500  | 200   | 75   | 76,254   |
| All sundries not elsewhere reported.....  | 20,375   | 1,000   |  | 54,214   |
| GOODS MANUFACTURED—Aggregate value.....   | \$472,300  | \$124,828   | \$36,060   | \$2,796,649  |
| Principal product.....  | 457,200  | 124,828   | 33,760   | 2,564,372  |
| All other products, including receipts from custom work and repairing.....        | 15,100   |   | 2,300  | 232,277  |

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.

# CENSUS BULLETIN.

No. 295.

WASHINGTON, D. C.

November, 1, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF HOUSTON, TEXAS.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 29, 1892.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Houston for the year ended May 31, 1890, prepared under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins in a form similar to this for principal cities not separately reported in 1880, to be followed by final reports containing data in detail respecting all industries for each city. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A statement is presented for 1890 in Table 1, showing the totals under general heads of the inquiry. The statements presented therewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

In 1880 the data relating to the manufactures of Houston were included in the totals published for Harris county, therefore it is not practicable to present a comparative statement indicating the growth of manufacturing industry in the city during the decade, but the totals for the entire county at that date were as follows:

### HARRIS COUNTY: 1880.

|  |             |
|--|-------------|
| Number of establishments reported..... | 85          |
| Capital invested.....                  | \$683,625   |
| Number of hands employed.....          | 742         |
| Wages paid.....                        | \$296,369   |
| Value of materials used.....           | \$687,204   |
| Value of product.....                  | \$1,303,293 |

TABLE 1.—STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY.

| INDUSTRIES.             | Number industries reported. | Number establishments reporting. | Capital. | Hands employed. | Wages paid. | Cost of materials used. |             |
|-------------------------|-----------------------------|----------------------------------|----------|-----------------|-------------|-------------------------|-------------|
|                         |                             |                                  |          |                 |             |                         |             |
| All industries (a)..... | { 1880<br>1890              | 36                               | 68       | \$2,437,282     | 1,904       | \$849,107               | \$2,298,311 |

  

| INDUSTRIES.             | Miscellaneous expenses. | Value of product. | MUNICIPAL DATA. |                     |                           |                          |
|-------------------------|-------------------------|-------------------|-----------------|---------------------|---------------------------|--------------------------|
|                         |                         |                   | Population.     | Assessed valuation. | Municipal debt. (b)       |                          |
| All industries (a)..... | { 1880<br>1890          | \$218,019         | \$3,948,502     | 16,513<br>27,657    | \$5,352,314<br>12,946,485 | \$1,501,592<br>1,645,200 |

<sup>a</sup> Statistics of manufactures for 1880 were included in totals published for Harris county.

<sup>b</sup> The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries. To avoid disclosure of the operations of individual establishments, only such important or characteristic industries as have 3 or more establishments engaged therein are included in this table. Among other important industries, in which less than 3 establishments are reported, may be mentioned clothing, men's, wholesale, 1 establishment; coffee and spices, roasting and grinding, 1 establishment; confectionery, 2 establishments; cooperage, 1 establishment; cotton, compressing, 1 establishment; lumber, and other mill products from logs or bolts, 1 establishment; mattresses and spring beds, 2 establishments; oil, cotton seed and cake, 2 establishments. The 11 establishments referred to report invested capital, \$1,564,872; hands employed, 1,078, and value of products, \$2,380,283.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employés performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate in each class, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES.

| CLASSIFICATION OF INQUIRIES.   | Carriages and<br>wagons.<br>—<br>(5 establish-<br>ments.) | Foundry and<br>machine shop<br>products.<br>—<br>(4 establish-<br>ments.) | Ice—artificial.<br>—<br>(3 establish-<br>ments.) | Lumber—<br>planing mill<br>products.<br>—<br>(4 establish-<br>ments.) | Printing and<br>publishing.<br>—<br>(3 establish-<br>ments.) |
|--|---|---|--|---|--|
| CAPITAL EMPLOYED—Aggregate.....  | \$83,050  | \$209,950   | \$83,675   | \$217,486   | \$72,719   |
| HIRED PROPERTY—Total.....  | 21,150  | 24,450  | 20,323   | 3,600   | 35,150   |
| PLANT—Total.....   | 47,250  | 128,357   | 54,000   | 83,000  | 27,700   |
| Land.....  | 37,000  | 45,000  | 500  | 26,500  |  |
| Buildings.....   | 7,000   | 21,500  | 500  | 13,300  |  |
| Machinery, tools, and implements.....  | 3,250   | 61,857  | 53,000   | 43,200  | 27,700   |
| LIVE ASSETS—Total.....   | 14,650  | 57,143  | 9,350  | 130,886   | 9,869  |
| Raw materials.....   | 3,400   | 5,578   | 350  | 65,800  | 7,350  |
| Stock in process and finished product.....   | 1,050   | 17,877  | 500  | 17,000  | 150  |
| Cash, bills and accounts receivable, and all sundries not<br>elsewhere reported..... | 9,300   | 33,688  | 8,500  | 48,086  | 2,369  |
| WAGES PAID—Aggregate.....  | \$37,956  | \$58,069  | \$20,460   | \$128,270   | \$26,528   |
| Average number of hands employed during the year.....                                | 52  | 96  | 34   | 250   | 38   |
| Males above 16 years.....  | 50  | 56  | 34   | 250   | 30   |
| Females above 15 years.....  |   | 2   |  |   | 3  |
| Children.....  | 1   | 31  |  |   | 5  |
| Pieceworkers.....  | 1   | 7   |  |   |  |
| MATERIALS USED—Aggregate cost.....   | \$27,962  | \$118,305   | \$13,000   | \$303,590   | \$24,421   |
| Principal materials.....   | 25,766  | 105,558   | 2,500  | 288,990   | 23,862   |
| Fuel.....  | 1,406   | 1,650   | 10,500   |   | 420  |
| Mill supplies.....   |   | 625   |  | 1,100   |  |
| All other materials.....   | 790   | 10,472  |  | 13,500  | 139  |
| MISCELLANEOUS EXPENSES—Aggregate.....  | \$3,458   | \$5,975   | \$4,049  | \$21,212  | \$3,850  |
| Amount paid for contract work.....   |   |   |  |   |  |
| Rent.....  | 1,800   | 2,200   | 1,900  | 312   | 3,110  |
| Power and heat.....  |   |   |  |   |  |
| Taxes.....   | 499   | 570   | 550  | 1,505   | 235  |
| Insurance.....   | 393   | 395   | 399  | 3,910   | 270  |
| Repairs, ordinary, of buildings and machinery.....                                   | 125   |   | 1,200  | 4,785   | 25   |
| Interest on cash used in the business.....   | 81  | 2,810   |  | 5,600   | 210  |
| All sundries not elsewhere reported.....   | 560   |   |  | 5,100   |  |
| GOODS MANUFACTURED—Aggregate value.....  | \$75,271  | \$232,654   | \$49,800   | \$522,680   | \$68,354   |
| Principal product.....   | 15,261  | 232,654   | 49,800   | 510,080   | 68,354   |
| All other products, including receipts from custom work and<br>repairing.....        | 60,010  |   |  | 12,600  |  |

ROBERT P. PORTER,  
Superintendent of Census.

# CENSUS BULLETIN.

No. 296.

WASHINGTON, D. C.

November 1, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF HAVERHILL, MASSACHUSETTS.

DEPARTMENT OF THE INTERIOR,  
CENSUS OFFICE,

WASHINGTON, D. C., October 29, 1892.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Haverhill for the year ended May 31, 1890, prepared under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins in a form similar to this for principal cities not separately reported in 1880, to be followed by final reports containing data in detail respecting all industries for each city. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A statement is presented for 1890 in Table 1, showing the totals under general heads of the inquiry. The statements presented therewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

In 1880 the data relating to the manufactures of Haverhill were included in the totals published for Essex county, therefore it is not practicable to present a comparative statement indicating the growth of manufacturing industry in the city during the decade, but the totals for the entire county at that date, after subtracting the totals published for the cities of Lawrence, Lynn, and Salem, were as follows:

### ESSEX COUNTY: 1880.

|  |              |
|--|--------------|
| Number of establishments reported..... | 1,158        |
| Capital invested.....                  | \$13,145,747 |
| Number of hands employed.....          | 26,549       |
| Wages paid.....                        | \$9,074,804  |
| Value of materials used.....           | \$26,262,133 |
| Value of product.....                  | \$41,346,606 |

TABLE 1.—STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY.

| INDUSTRIES.             | Number<br>industries<br>reported. | Number<br>establish-<br>ments<br>reporting. | Capital. | Hands<br>employed. | Wages paid. | Cost of mate-<br>rials used. |              |
|-------------------------|-----------------------------------|---|----------|--------------------|-------------|------------------------------|--------------|
|                         |                                   |   |          |                    |             |                              |              |
| All industries (a)..... | { 1880<br>1890                    | 64  | 722      | \$7,925,810        | 14,988      | \$6,815,474                  | \$13,561,592 |

  

| INDUSTRIES.             | Miscellaneous<br>expenses. | Value of<br>product. | MUNICIPAL DATA. |                        |                           |                      |
|-------------------------|----------------------------|----------------------|-----------------|------------------------|---------------------------|----------------------|
|                         |                            |                      | Population.     | Assessed<br>valuation. | Municipal<br>debt. (b)    |                      |
| All industries (a)..... | { 1880<br>1890             | \$1,805,430          | \$25,340,361    | 18,472<br>27,412       | \$9,861,955<br>17,870,772 | \$393,428<br>300,485 |

<sup>a</sup> Statistics of manufactures for 1880 were included in totals published for Essex county.  
<sup>b</sup> The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries. To avoid disclosure of the operations of individual establishments, only such important or characteristic industries as have 3 or more establishments engaged therein are included in this table. Among other important industries, in which less than 3 establishments are reported, may be mentioned flouring and grist mill products, 2 establishments, and leather, morocco, 1 establishment. The 3 establishments referred to report invested capital, \$84,910; hands employed, 69, and value of products, \$387,881.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate in each class, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES.

| CLASSIFICATION OF INQUIRIES.   | Boot and<br>shoe cut<br>stock. (a) | Boot and<br>shoe findings. | Boots and<br>shoes—factory<br>product. | Slippers—<br>factory prod-<br>uct. | Boxes—fancy<br>and paper. |
|--|------------------------------------|----------------------------|--|------------------------------------|---------------------------|
|  | (82 establish-<br>ments.)          | (13 establish-<br>ments.)  | (201 establish-<br>ments.)             | (25 establish-<br>ments.)          | (5 establish-<br>ments.)  |
| CAPITAL EMPLOYED—Aggregate.....  | \$1,525,865                        | \$177,351                  | \$5,926,222                            | \$440,353                          | \$239,484                 |
| HIRED PROPERTY—Total.....  | 395,600                            | 50,000                     | 1,450,000                              | 134,500                            | 73,250                    |
| PLANT—Total.....   | 81,327                             | 22,515                     | 673,184                                | 28,875                             | 58,828                    |
| Land.....  |                                    |                            | 37,600                                 |                                    | 20,000                    |
| Buildings.....   |                                    |                            | 72,200                                 |                                    | 5,000                     |
| Machinery, tools, and implements.....  | 81,327                             | 22,515                     | 563,384                                | 28,875                             | 33,828                    |
| LIVE ASSETS—Total.....   | 1,048,938                          | 104,836                    | 3,803,038                              | 276,978                            | 102,406                   |
| Raw materials.....   | 109,827                            | 50,461                     | 835,742                                | 48,410                             | 42,378                    |
| Stock in process and finished product.....   | 438,957                            | 3,675                      | 627,886                                | 53,694                             | 3,633                     |
| Cash, bills and accounts receivable, and all sundries not<br>elsewhere reported..... | 500,154                            | 50,700                     | 2,339,410                              | 174,874                            | 56,395                    |
| WAGES PAID—Aggregate.....  | \$402,962                          | \$64,308                   | \$4,445,164                            | \$342,252                          | \$79,236                  |
| Average number of hands employed during the year.....                                | 799                                | 429                        | 9,803                                  | 1,007                              | 165                       |
| Males above 16 years.....  | 484                                | 58                         | 1,833                                  | 134                                | 32                        |
| Females above 15 years.....  | 8                                  | 160                        | 395                                    | 39                                 | 4                         |
| Children.....  |                                    | 1                          | 1                                      |                                    |                           |
| Pieceworkers.....  | 307                                | 210                        | 7,574                                  | 834                                | 129                       |
| MATERIALS USED—Aggregate cost.....   | \$3,109,686                        | \$261,852                  | \$7,339,815                            | \$612,914                          | \$180,899                 |
| Principal materials.....   | 3,104,261                          | 261,705                    | 6,782,227                              | 563,203                            | 177,675                   |
| Fuel.....  | 3,257                              | 97                         | 12,669                                 | 631                                | 104                       |
| Mill supplies.....   |                                    |                            |  |                                    | 2,400                     |
| All other materials.....   | 2,168                              | 50                         | 544,919                                | 49,080                             | 720                       |
| MISCELLANEOUS EXPENSES—Aggregate.....  | \$92,014                           | \$10,979                   | \$1,167,460                            | \$168,139                          | \$13,092                  |
| Amount paid for contract work.....   | 300                                |                            | 781,350                                | 134,100                            |                           |
| Rent.....  | 27,480                             | 3,734                      | 101,449                                | 9,483                              | 5,454                     |
| Power and heat.....  | 7,750                              | 1,080                      | 34,415                                 | 2,224                              | 1,158                     |
| Taxes.....   | 4,591                              | 563                        | 15,881                                 | 1,439                              | 895                       |
| Insurance.....   | 8,923                              | 1,392                      | 30,124                                 | 2,791                              | 1,555                     |
| Repairs, ordinary, of buildings and machinery.....                                   | 2,460                              | 627                        | 22,462                                 | 1,485                              | 1,340                     |
| Interest on cash used in the business.....   | 8,118                              | 540                        | 27,917                                 | 1,025                              | 230                       |
| All sundries not elsewhere reported.....   | 32,392                             | 3,038                      | 153,862                                | 15,592                             | 2,460                     |
| GOODS MANUFACTURED—Aggregate value.....  | \$3,854,043                        | \$347,588                  | \$14,963,642                           | \$1,273,710                        | \$374,598                 |
| Principal product.....   | 3,854,043                          | 347,588                    | 14,875,192                             | 1,261,210                          | 313,498                   |
| All other products, including receipts from custom work and<br>repairing.....        |                                    |                            | 88,450                                 | 12,500                             | 61,100                    |

a Includes several branches of this industry, which will be specifically stated in final reports.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

| CLASSIFICATION OF INQUIRIES.  | Brick and tile.          | Foundry and<br>machine shop<br>products. | Lasts.                   | Printing and<br>publishing. | Wool hats.               |
|---|--------------------------|--|--------------------------|-----------------------------|--------------------------|
|   | (3 establish-<br>ments.) | (8 establish-<br>ments.)                 | (3 establish-<br>ments.) | (3 establish-<br>ments.)    | (3 establish-<br>ments.) |
| CAPITAL EMPLOYED—Aggregate.....   | \$54,550                 | \$159,167                                | \$41,725                 | \$59,600                    | \$460,919                |
| HIRED PROPERTY—Total.....   | 20,000                   | 30,500                                   | 18,975                   | 30,400                      | 45,000                   |
| PLANT—Total.....  | 9,450                    | 50,151                                   | 7,500                    | 21,000                      | 123,439                  |
| Land.....   | 3,500                    | 2,000                                    |                          |                             | 9,000                    |
| Buildings.....  | 2,500                    | 5,429                                    |                          |                             | 35,705                   |
| Machinery, tools, and implements.....   | 3,450                    | 42,722                                   | 7,500                    | 21,000                      | 78,734                   |
| LIVE ASSETS—Total.....  | 25,100                   | 78,516                                   | 15,250                   | 8,200                       | 292,480                  |
| Raw materials.....  | 4,000                    | 18,150                                   | 5,400                    | 2,835                       | 72,268                   |
| Stock in process and finished product.....  | 7,100                    | 25,766                                   | 850                      |                             | 150,065                  |
| Cash, bills and accounts receivable, and all sundries not elsewhere reported..... | 14,000                   | 39,600                                   | 9,000                    | 5,365                       | 70,147                   |
| WAGES PAID—Aggregate.....   | \$20,710                 | \$65,163                                 | \$19,830                 | \$33,940                    | \$232,498                |
| Average number of hands employed during the year.....                             | 96                       | 96                                       | 28                       | 49                          | 491                      |
| Males above 16 years.....   | 46                       | 95                                       | 24                       | 34                          | 215                      |
| Females above 15 years.....   |                          | 1  |                          | 3                           | 35                       |
| Children.....   |                          |  |                          |                             |                          |
| Pieceworkers.....   | 50                       |  | 4                        | 12                          | 241                      |
| MATERIALS USED—Aggregate cost.....  | \$12,700                 | \$69,863                                 | \$9,463                  | \$13,832                    | \$361,757                |
| Principal materials.....  | 12,700                   | 69,100                                   | 9,355                    | 13,432                      | 199,423                  |
| Fuel.....   |                          | 763                                      | 108                      | 50                          | 11,245                   |
| Mill supplies.....  |                          |  |                          | 350                         | 151,089                  |
| All other materials.....  |                          |  |                          |                             |                          |
| MISCELLANEOUS EXPENSES—Aggregate.....   | \$3,845                  | \$8,711                                  | \$3,028                  | \$7,394                     | \$25,455                 |
| Amount paid for contract work.....  |                          |  |                          |                             |                          |
| Rent.....   | 1,500                    | 2,174                                    | 1,310                    | 2,200                       | 3,350                    |
| Power and heat.....   |                          | 761                                      | 691                      | 495                         | 2,250                    |
| Taxes.....  | 95                       | 896                                      | 142                      | 198                         | 2,140                    |
| Insurance.....  |                          | 910                                      | 335                      | 362                         | 4,455                    |
| Repairs, ordinary, of buildings and machinery.....                                |                          |  | 300                      | 450                         | 1,600                    |
| Interest on cash used in the business.....  |                          | 2,030                                    |                          | 140                         | 2,500                    |
| All sundries not elsewhere reported.....  | 2,250                    | 1,940                                    | 250                      | 3,549                       | 9,160                    |
| GOODS MANUFACTURED—Aggregate value.....   | \$50,100                 | \$160,500                                | \$46,632                 | \$60,488                    | \$853,028                |
| Principal product.....  | 50,100                   | 139,500                                  | 46,632                   | 60,488                      | 853,028                  |
| All other products, including receipts from custom work and repairing.....        |                          | 21,000                                   |                          |                             |                          |

ROBERT P. PORTER,  
Superintendent of Census.

# CENSUS BULLETIN.

No. 297.

WASHINGTON, D. C.

November 2, 1892.

## STATISTICS OF MANUFACTURES: 1890.

BAY CITY, MICHIGAN.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 31, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of Bay city for the year ended May 31, 1890, prepared under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry with the returns of 1880 it will be observed that the item of "Miscellaneous expenses" is given for 1890 only. No previous census inquiry has embraced the cost incurred in manufacturing operations other than wages paid and materials used. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

### TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

|  |          |
|--|----------|
| Number of establishments reported..... | 21       |
| Capital invested.....                  | \$26,292 |
| Number of hands employed.....          | 109      |
| Wages paid.....                        | \$32,692 |
| Cost of materials used.....            | \$40,259 |
| Miscellaneous expenses.....            | \$3,585  |
| Value of product at works.....         | \$89,723 |

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

PERCENTAGES OF INCREASE.

|  |        |
|--|--------|
| Number of establishments reported..... | 247.50 |
| Capital invested .....                 | 111.72 |
| Number of hands employed.....          | 89.77  |
| Wages paid.....                        | 128.96 |
| Cost of materials used.....            | 24.83  |
| Value of product at works.....         | 53.80  |
| Population of city.....                | 34.53  |
| Assessed valuation of city .....       | 2.31   |

Decrease of municipal debt less sinking fund, 4.18 per cent.

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$359 in 1880 to \$433 in 1890, or 20.61 per cent.

Part of this increase is undoubtedly due to the fact that in many industries relatively more men were employed in 1890 and less children; also to the fact that in 10 years many branches of industry have improved the grades of their products, and for this reason require more skilled and higher paid employes. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

Attention is called to the presentation of labor and wage statistics. The "average wages" paid to all classes employed has always proved a stumbling block in census reports. It is believed the Eleventh Census, in obtaining data to show the classification of labor employed, the average term of employment, the various rates of wages per week, and the average number of men, women, and children, respectively, employed at each rate in the various classes, has taken a step in advance, which will be shown in detail in final reports, and appreciated by students of these data.

*Robert S. Porter.*  
 Superintendent of Census.

# STATISTICS OF MANUFACTURES: 1890.

## BAY CITY, MICHIGAN.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

The instructions issued by this office to enumerators and special agents relating to the collection of statistics of manufactures were as follows:

It shall be their duty personally to visit every establishment of productive industry in their respective districts (except as noted) and to obtain the required information in the case of each manufacturing establishment.

The term "establishment of productive industry" must be understood in its broadest sense to embrace not only mills and factories but also the operation of all small establishments and the mechanical trades.

Restaurants, saloons, barber shops, the compounding of individual prescriptions by druggists and apothecaries, the operations of mercantile establishments, transportation corporations and lines, and professional services (except mechanical dentistry) are not considered as coming within the meaning of the law in this connection.

Great care must be taken by special agents and enumerators to guard against the omission from their returns of any establishment that comes properly within the scope of this investigation. \* \* \* They should have their eyes open to every indication of the presence of productive industry and should supplement personal observation by frequent and persistent inquiry.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

| INDUSTRIES. | Number industries reported. | Number establishments reporting. | Capital. (a) | Hands employed. | Wages paid. | Cost of materials used. |
|-------------|-----------------------------|----------------------------------|--------------|-----------------|-------------|-------------------------|
|             |                             |                                  |              |                 |             |                         |

  

| INDUSTRIES.             | Miscellaneous expenses. (c) | Value of product.        | MUNICIPAL DATA.  |                          |                      |
|-------------------------|-----------------------------|--------------------------|------------------|--------------------------|----------------------|
|                         |                             |                          | Population.      | Assessed valuation.      | Municipal debt. (d)  |
| All industries (b)..... | .....                       | \$5,533,621<br>8,600,385 | 20,693<br>27,839 | \$7,651,130<br>7,827,775 | \$438,470<br>420,127 |

<sup>a</sup> The value of hired property is not included for 1890, because it was not reported in 1880.

<sup>b</sup> The totals stated for 1890 do not include returns from those manufacturers of "timber products not made in mill" having offices in Bay city. This industry is reported as of the place where the office of the establishment is located, because it is not practicable to exactly locate its operations within the limits of a county or municipality. The totals of such reports obtained in Bay city are as follows:

|  |             |
|--|-------------|
| Number of establishments reported..... | 9           |
| Capital invested.....                  | \$1,583,840 |
| Number of hands employed.....          | 1,261       |
| Wages paid.....                        | \$272,681   |
| Cost of materials used.....            | \$302,926   |
| Miscellaneous expenses.....            | \$210,364   |
| Value of product at works.....         | \$980,142   |

<sup>c</sup> No inquiry in 1880 relating to "Miscellaneous expenses".

<sup>d</sup> The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 presents the statistics of 1880 and 1890 in the form of publication used in the reports for 1880. In comparing industrial statistics for 1880 and 1890 it should be borne in mind, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

The form of question respecting capital used at the census of 1880 was as follows: "Capital (real and personal) invested in the business". It became evident from the results then obtained that this question was neither sufficiently comprehensive nor properly understood, and therefore the full amount of capital employed in productive industry was not reported, thus forming an erroneous basis for deductions.

The present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

#### TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

#### LABOR EMPLOYED AND WAGES PAID.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

It should be noted that the first class includes all operatives, that is, those directly engaged in productive labor as well as skilled mechanics, while the second class includes all unskilled workmen other than operatives. The questions required a statement of the average number of men, women, and children, respectively, employed during the year in each class, also the actual amount of wages paid to each number.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

#### MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

| CLASSIFICATION OF INQUIRIES.   | Carriages and<br>wagons.<br>(4 establish-<br>ments.) | Foundry and<br>machine shop<br>products.<br>(9 establish-<br>ments.) | Lumber and<br>other mill<br>products from<br>logs or bolts.<br>(b)<br>(22 establish-<br>ments.) | Lumber—<br>planing mill<br>products. (b)<br>(10 establish-<br>ments.) | Printing and<br>publishing.<br>(b)<br>(4 establish-<br>ments.) | Saws.<br>(3 establish-<br>ments.) |
|--|--|--|---|---|--|-----------------------------------|
| CAPITAL EMPLOYED—Aggregate.....  | \$56,847   | \$657,833  | \$6,715,493   | \$534,903   | \$70,425   | \$23,900                          |
| HIRE PROPERTY—Total.....   | 8,500  | 21,000   | 7,200   | 14,250  | 21,200   | 1,650                             |
| PLANT—Total.....   | 13,250   | 319,551  | 3,699,151   | 167,600   | 27,575   | 13,800                            |
| Land.....  | 1,500  | 47,198   | 2,713,800   | 52,100  | .....  | 4,100                             |
| Buildings.....   | 9,100  | 99,500   | 270,800   | 24,500  | .....  | 4,000                             |
| Machinery, tools, and implements.....  | 2,650  | 172,853  | 714,551   | 91,000  | 27,575   | 5,700                             |
| LIVE ASSETS—Total.....   | 35,097   | 317,232  | 3,009,142   | 353,053   | 21,650   | 8,450                             |
| Raw materials.....   | 13,262   | 73,952   | 794,794   | 112,934   | 5,100  | 450                               |
| Stock in process and finished product.....                                       | 12,081   | 62,541   | 920,641   | 24,450  | 400  | 3,000                             |
| Cash, bills and accounts receivable, and all<br>sundries not elsewhere reported. | 9,754  | 180,739  | 1,293,707   | 215,669   | 16,150   | 5,000                             |
| WAGES PAID—Aggregate.....  | \$31,054   | \$198,766  | \$606,383   | \$142,993   | \$68,912   | \$13,542                          |
| Average number of hands employed during<br>the year.                             | 49   | 323  | 1,985   | 333   | 108  | 21                                |
| Males above 16 years.....  | 38   | 322  | 1,848   | 314   | 58   | 21                                |
| Females above 15 years.....  | 1  | 1  | 20  | 2   | 2  | .....                             |
| Children.....  | .....  | .....  | .....   | 14  | 27   | .....                             |
| Pieceworkers.....  | 10   | .....  | 117   | 5   | 21   | .....                             |
| MATERIALS USED—Aggregate cost.....   | \$46,216   | \$204,919  | \$2,611,892   | \$606,591   | \$18,821   | \$5,970                           |
| Principal materials.....   | 41,279   | 184,786  | 2,489,527   | 599,216   | 16,876   | 4,388                             |
| Fuel.....  | 666  | 5,802  | .....   | 1,600   | 855  | 527                               |
| Mill supplies.....   | .....  | 1,775  | 122,365   | 4,675   | .....  | 30                                |
| All other materials.....   | 4,271  | 12,556   | .....   | 1,100   | 1,090  | 1,025                             |
| MISCELLANEOUS EXPENSES—Aggregate.....  | \$8,022  | \$31,739   | \$256,590   | \$40,918  | \$22,531   | \$1,362                           |
| Amount paid for contract work.....   | .....  | .....  | .....   | .....   | .....  | .....                             |
| Rent.....  | 700  | 1,810  | 600   | 1,167   | 1,834  | 144                               |
| Power and heat.....  | .....  | 650  | .....   | .....   | .....  | .....                             |
| Taxes.....   | 475  | 3,687  | 48,732  | 2,601   | 240  | 310                               |
| Insurance.....   | 775  | 2,713  | 45,135  | 5,070   | 417  | 22                                |
| Repairs, ordinary, of buildings and machinery.                                   | 255  | 14,075   | 66,981  | 8,090   | 700  | 330                               |
| Interest on cash used in the business.....                                       | 4,020  | 2,889  | 58,307  | 7,751   | 800  | .....                             |
| All sundries not elsewhere reported.....   | 1,797  | 5,915  | 38,785  | 15,339  | 18,510   | 556                               |
| GOODS MANUFACTURED—Aggregate value.....  | \$91,694   | \$554,622  | \$4,300,053   | \$921,356   | \$118,400  | \$29,492                          |
| Principal product.....   | 74,751   | 470,103  | 3,719,148   | 887,045   | 118,400  | 28,185                            |
| All other products, including receipts from cus-<br>tom work and repairing.      | 16,943   | 84,519   | 580,905   | 34,311  | .....  | 1,307                             |

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.

b Includes several branches of this industry, which will be specifically stated in final reports.

# CENSUS BULLETIN.

No. 298.

WASHINGTON, D. C.

November 2, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF TAUNTON, MASSACHUSETTS.

DEPARTMENT OF THE INTERIOR.

CENSUS OFFICE,

WASHINGTON, D. C., October 31, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Taunton for the year ended May 31, 1890, prepared under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry with the returns of 1880 it will be observed that the item of "Miscellaneous expenses" is given for 1890 only. No previous census inquiry has embraced the cost incurred in manufacturing operations other than wages paid and materials used. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: druggists' preparations, not including prescriptions; illuminating gas; millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

### TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

|  |           |
|--|-----------|
| Number of establishments reported..... | 39        |
| Capital invested.....                  | \$137,087 |
| Number of hands employed.....          | 145       |
| Wages paid.....                        | \$55,234  |
| Cost of materials used.....            | \$121,814 |
| Miscellaneous expenses.....            | \$10,702  |
| Value of product at works.....         | \$238,030 |

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

PERCENTAGES OF INCREASE.

|  |       |
|--|-------|
| Number of establishments reported..... | 83.11 |
| Capital invested .....                 | 86.43 |
| Number of hands employed.....          | 20.95 |
| Wages paid.....                        | 46.35 |
| Cost of materials used.....            | 8.82  |
| Value of product at works.....         | 25.96 |
| Population of city.....                | 19.96 |
| Assessed valuation of city.....        | 25.41 |
| Municipal debt less sinking fund.....  | 33.51 |

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$404 in 1880 to \$489 in 1890, or 21.04 per cent.

Part of this increase is undoubtedly due to the fact that in many industries relatively more men were employed in 1890 and less children; and also to the fact that in 10 years many branches of industry have improved the grades of their products, and for this reason require more skilled and higher paid employes. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

Attention is called to the presentation of labor and wage statistics. The "average wages" paid to all classes employed has always proved a stumbling block in census reports. It is believed the Eleventh Census, in obtaining data to show the classification of labor employed, the average term of employment, the various rates of wages per week, and the average number of men, women, and children, respectively, employed at each rate in the various classes, has taken a step in advance, which will be shown in detail in final reports, and appreciated by students of these data.

*Robert P. Torles*

Superintendent of Census.

# STATISTICS OF MANUFACTURES: 1890.

## CITY OF TAUNTON, MASSACHUSETTS.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

The instructions issued by this office to enumerators and special agents relating to the collection of statistics of manufactures were as follows:

It shall be their duty personally to visit every establishment of productive industry in their respective districts (except as noted) and to obtain the required information in the case of each manufacturing establishment.

The term "establishment of productive industry" must be understood in its broadest sense to embrace not only mills and factories but also the operation of all small establishments and the mechanical trades.

Restaurants, saloons, barber shops, the compounding of individual prescriptions by druggists and apothecaries, the operations of mercantile establishments, transportation corporations and lines, and professional services (except mechanical dentistry) are not considered as coming within the meaning of the law in this connection.

Great care must be taken by special agents and enumerators to guard against the omission from their returns of any establishment that comes properly within the scope of this investigation. \* \* \* They should have their eyes open to every indication of the presence of productive industry and should supplement personal observation by frequent and persistent inquiry.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

| INDUSTRIES. | Number industries reported. | Number establishments reporting | Capital. (a) | Hands employed. | Wages paid. | Cost of materials used. |
|-------------|-----------------------------|---------------------------------|--------------|-----------------|-------------|-------------------------|
|             |                             |                                 |              |                 |             |                         |

  

| INDUSTRIES.          | Miscellaneous expenses. (b) | Value of product.        | MUNICIPAL DATA.  |                            |                      |
|----------------------|-----------------------------|--------------------------|------------------|----------------------------|----------------------|
|                      |                             |                          | Population.      | Assessed valuation.        | Municipal debt. (c)  |
| All industries ..... | \$692,682                   | \$7,618,953<br>9,834,584 | 21,213<br>25,448 | \$14,212,330<br>17,823,032 | \$449,715<br>600,399 |

<sup>a</sup> The value of hired property is not included for 1890 because it was not reported in 1880.

<sup>b</sup> No inquiry in 1880 relating to "Miscellaneous expenses."

<sup>c</sup> The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 presents the statistics of 1880 and 1890 in the form of publication used in the reports for 1880. In comparing industrial statistics for 1880 and 1890 it should be borne in mind, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

The form of question respecting capital used at the census of 1880 was as follows: "Capital (real and personal) invested in the business". It became evident from the results then obtained that this question was neither sufficiently comprehensive nor properly understood, and therefore the full

amount of capital employed in productive industry was not reported, thus forming an erroneous basis for deductions.

The present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

#### TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

#### LABOR EMPLOYED AND WAGES PAID.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

It should be noted that the first class includes all operatives, that is, those directly engaged in productive labor as well as skilled mechanics, while the second class includes all unskilled workmen other than operatives. The questions required a statement of the average number of men, women, and children, respectively, employed during the year in each class, also the actual amount of wages paid to each number.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

#### MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

| CLASSIFICATION OF INQUIRIES.  | Brick and tile.     | Clay and pottery products. | Cotton goods.       | Foundry and machine shop products. | Iron and steel—nails and spikes, cut and wrought. |
|---|---------------------|----------------------------|---------------------|------------------------------------|---|
|   | (8 establishments.) | (6 establishments.)        | (8 establishments.) | (15 establishments.)               | (4 establishments.)                               |
| CAPITAL EMPLOYED—Aggregate.....   | \$136,998           | \$221,376                  | \$2,599,694         | \$1,824,603                        | \$543,925   |
| HIRED PROPERTY—Total.....   | 8,500               |                            |                     | 39,250                             | 7,000   |
| PLANT—Total.....  | 46,935              | 121,900                    | 1,440,507           | 727,625                            | 242,325   |
| Land.....   | 16,315              | 10,500                     | 96,500              | 146,000                            | 37,200  |
| Buildings.....  | 11,930              | 61,100                     | 446,264             | 217,519                            | 100,300   |
| Machinery, tools, and implements.....   | 18,690              | 50,300                     | 897,743             | 364,106                            | 105,325   |
| LIVE ASSETS—Total.....  | 81,563              | 99,976                     | 1,159,187           | 1,057,728                          | 294,100   |
| Raw materials.....  | 4,000               | 10,350                     | 227,131             | 173,121                            | 109,500   |
| Stock in process and finished product.....  | 29,700              | 43,100                     | 583,984             | 402,749                            | 163,000   |
| Cash, bills and accounts receivable, and all sundries not elsewhere reported..... | 47,863              | 46,526                     | 348,072             | 481,858                            | 21,600  |
| WAGES PAID—Aggregate.....   | \$71,558            | \$72,025                   | \$708,825           | \$852,066                          | \$150,996   |
| Average number of hands employed during the year.....                             | 221                 | 121                        | 2,000               | 1,505                              | 301   |
| Males above 16 years.....   | 221                 | 89                         | 895                 | 1,423                              | 127   |
| Females above 15 years.....   |                     | 1                          | 993                 | 10                                 | 60  |
| Children.....   |                     |                            | 59                  |                                    | 4   |
| Pieceworkers.....   |                     | 81                         | 53                  | 72                                 | 110   |
| MATERIALS USED—Aggregate cost.....  | \$25,720            | \$40,483                   | \$1,629,595         | \$672,262                          | \$362,375   |
| Principal materials.....  |                     | 26,029                     | 1,478,738           | 518,770                            | 341,575   |
| Fuel.....   | 25,609              | 11,252                     | 58,776              | 38,242                             | 7,400   |
| Mill supplies.....  |                     | 1,177                      | 19,420              | 18,221                             | 2,000   |
| All other materials.....  | 111                 | 2,025                      | 72,661              | 97,029                             | 11,600  |
| MISCELLANEOUS EXPENSES—Aggregate.....   | \$15,301            | \$15,351                   | \$149,527           | \$134,286                          | \$17,891  |
| Amount paid for contract work.....  | 2,600               |                            |                     |                                    |   |
| Rent.....   | 600                 |                            |                     | 2,736                              | 500   |
| Power and heat.....   |                     |                            |                     |                                    | 250   |
| Taxes.....  | 695                 | 1,552                      | 17,293              | 15,904                             | 5,671   |
| Insurance.....  | 195                 | 1,176                      | 10,624              | 5,871                              | 3,285   |
| Repairs, ordinary, of buildings and machinery.....                                | 2,735               | 3,950                      | 23,764              | 8,020                              | 600   |
| Interest on cash used in the business.....  | 1,232               | 1,673                      | 76,381              | 20,172                             | 6,945   |
| All sundries not elsewhere reported.....  | 7,244               | 7,000                      | 21,465              | 81,583                             | 640   |
| GOODS MANUFACTURED—Aggregate value.....   | \$126,412           | \$161,700                  | \$2,747,816         | \$1,995,966                        | \$575,720   |
| Principal product.....  | 126,412             | 128,700                    | 2,744,097           | 1,927,582                          | 569,220   |
| All other products, including receipts from custom work and repairing.....        |                     | 33,000                     | 3,719               | 68,384                             | 6,500   |

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.

# CENSUS BULLETIN.

No. 299.

WASHINGTON, D. C.

November 2, 1892.

## MANUFACTURES—DYEING AND FINISHING TEXTILES.

DEPARTMENT OF THE INTERIOR,  
CENSUS OFFICE,  
WASHINGTON, D. C., October 26, 1892.

Herewith is presented a report on dyeing and finishing textiles as a distinct industry, prepared by Mr. PETER T. WOOD, special agent, under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures.

The following table presents for this industry the percentages of increase or decrease under the principal heads of inquiry during the past decade. The more thorough inquiry employed at the present census may have, in a measure, affected the increase shown in some of the items, especially that of capital.

### COMPARATIVE STATEMENT OF THE INDUSTRY OF DYEING AND FINISHING TEXTILES.

| GENERAL HEADS.                         | 1890                      | 1880         | Percent-<br>age of<br>increase. |
|--|---------------------------|--------------|---------------------------------|
| Number of establishments reported..... | 248                       | 191          | 29.84                           |
| Capital invested.....                  | <sup>a</sup> \$38,450,800 | \$26,223,981 | 46.62                           |
| Number of hands employed.....          | 20,267                    | 16,698       | 21.37                           |
| Wages paid.....                        | \$9,717,011               | \$6,474,364  | 50.08                           |
| Miscellaneous expenses.....            | \$3,154,219               |              |                                 |
| Cost of materials.....                 | \$12,362,082              | \$13,664,295 | 69.53                           |
| Total value work done.....             | \$28,900,560              | \$32,297,420 | 610.52                          |

<sup>a</sup> Does not include hired property to the value of \$1,819,779, which is omitted for comparative purposes, as this item was not reported at the census of 1880.

<sup>b</sup> Decrease.

It will be observed that the item of miscellaneous expenses is reported for 1890 only. No previous census inquiry has embraced the cost incurred in manufacturing operations other than that of wages paid and materials used, hence comparison of this item can not be made.

Although a decrease is shown in the amount received for work done in the dyehouses, an average increase is exhibited in the wages paid and in the number of hands employed. At the census of 1880 there were 16,698 hands employed, receiving \$6,474,364 in wages; at the present census 20,267 hands were employed, earning \$9,717,011 in wages, the average annual earnings for men, women, and children being \$479.45 as compared with \$387.73 in 1880, an increase of 23.66 per cent. This increase is evidently due to more regular employment, the large increase in the number of males earning the higher rate of wages, the small increase in the number of women, and the marked but gratifying diminution in the number of children employed.

The number of males employed in 1890 was 17,146 as compared with 12,788 in 1880 an increase of 4,358, or 34.08 per cent; the number of females employed in 1890 was 2,328; in 1880 there were 2,038, an increase of 290, or 14.23 per cent; the number of children employed in 1890 was 793 as compared with 1,872 in 1880, a diminution of 1,079, or a decrease of 57.64 per cent.

*Robert T. Porter*  
Superintendent of Census.

# STATISTICS OF MANUFACTURES.

## THE INDUSTRY OF DYEING AND FINISHING TEXTILES.

BY P. T. WOOD.

The dyeing and finishing of textiles are integral parts of the manufacture of textile fabrics.

The tables exhibited in this report do not embrace the statistics of establishments connected with cotton, woolen, or silk factories, but show only the operations of independent dye works, bleacheries, and print works, the value of the products reported being merely the values added to the fabrics by the processes of dyeing and finishing. Much of the dyeing and finishing is done by the manufacturers themselves, the data showing that, while chemicals and dyestuffs to the value of \$8,407,693 were consumed during the census year in the establishments devoted exclusively to this industry, the silk, cotton, and woolen mills, in which dyeing and finishing is done, used chemicals and dyestuffs valued at \$11,278,970, divided as follows: in woolen mills \$6,453,665, in cotton mills \$4,266,773, and in silk mills \$558,532. It will thus be seen that more dyeing and finishing was done in textile mills than in the 248 establishments devoted exclusively to this industry.

A curious anomaly is presented by the statistics compiled from the reports made to the Census Office by dyers and finishers, which probably does not occur in any other industry. While there was an increase in all the expenses in the present census year over those reported at the census of 1880, the returns show that the value of the work done in the dyehouses, bleacheries, and print works has decreased. Thus, while there were 248 establishments engaged in this industry in 1890, and 191 in 1880, an increase of 29.84 per cent, the value of the work done during the present census year was \$28,900,560 as compared with \$32,297,420 in 1880, a decrease of \$3,396,860, or 10.52 per cent. This decrease is all the more marked because of the increase in the products of silk, cotton, and woolen mills during the decade. At the same time a marked increase is shown in the amount paid for wages, a slight difference in cost of materials, and an apparently large increase in the amount of capital invested. The total capital employed (not including \$1,819,779 value of property hired) in the industry of dyeing and finishing textiles for 1890 was \$38,450,800, an apparent but not an actual increase of \$12,226,819 over that employed as reported at the census of 1880. The large increase shown in this item for the past decade is partly due to the fact that invested capital, as returned at the census of 1880, did not take cognizance of all items that properly embrace "Live assets", which, it is believed, are for the first time fully included at the census of 1890. Hence, in making comparison between the returns of capital invested at the two census periods, these facts should be carefully borne in mind.

Dyers and finishers explain that the decrease in value of the work done, as reported for 1890, is due to the fact that competition and improved processes have reduced their charges for work at least 25 per cent. The market cost of chemicals and dyestuffs remains about the same, but it is not necessary to use as much of these articles now, in a given quantity of goods, as was employed at the census period of 1880. This is particularly noticeable in the manufactures of silk, as by the introduction of machinery operated by power it is now possible to do work that 10 years ago could only be performed by hand. Therefore, the decrease in the value of work done is not due to an increase in the number of manufacturers of textiles doing their own dyeing and finishing, since the proportion of such manufacturers in 1890 is about the same as in 1880.

Notwithstanding the decrease in amount received for work done in the dyehouses, an average increase is shown in the wages paid. In 1880 there were 16,698 hands employed, receiving \$6,474,364 in wages, while 20,267 hands earned \$9,717,011 in wages during the census year ended May 31, 1890. The percentage of increase in the number of hands employed is 21.37 and in wages paid 50.08. In 1880, the dyehouse employés received an average of \$387.73 per annum, while in 1890 the average

increased to \$479.45, an increase of \$91.72 per capita, which is due in a large measure to more regular employment and the increase in the proportion of male adults employed earning the higher rates of wages.

In this connection it should be stated that the larger proportion of the labor employed is practically unskilled, and the figures given do not represent the wages paid to expert dyers and finishers, which are necessarily much greater than those paid to unskilled workmen.

At the census of 1880 the cost of materials and wages was \$20,138,659 to give a product of \$32,297,420, while at the census of 1890 the cost of these two principal items was \$22,079,093 to give a product of \$28,900,560. Thus materials and wages cost 62.35 per cent of the value of work done at the former census year, while at the present census the percentage has risen to 76.40.

The work done, both in quantity and value, is principally in dyeing, bleaching, and printing cotton yarns and piece goods.

The amount of \$28,900,560, given as value of product of dyehouses, bleacheries, and print works, does not show the full value added to textile manufactures by these processes. In the woolen mills chemicals and dyestuffs costing \$6,453,665 were used. From the returns made by manufacturers it is found that the cost of these materials is 36.18 per cent of the added value. Applying this basis of compilation it would appear that the added value of work done in woolen mills is \$17,837,659. Chemicals and dyestuffs costing \$4,266,773 were used in cotton mills. The cost of these chemicals and dyestuffs, according to the returns of establishments dyeing, printing, and bleaching cotton goods, is 26.61 per cent of the value added by these processes, which would make the value of the work done \$16,034,472. In silk mills the chemicals and dyestuffs cost 37.21 per cent of the value added by their use. The cost of these materials is \$558,532, and the value of the work done, which means the cost of the dyestuffs plus the value added by their use, is \$1,501,027. The value of this work done in mills engaged in textile manufactures is therefore, approximately, as follows: cotton, \$16,034,472; woolen, \$17,837,659; silk, \$1,501,027; total, \$35,373,158. Adding this total to the value of work done in establishments devoted exclusively to dyeing and finishing textiles, the gross value added by dyeing, bleaching, and printing is shown to be \$64,273,718.

Table 1 shows by states, with totals for the United States, the amount of capital invested, miscellaneous expenses, number of hands employed by classes, aggregate wages paid, power, materials used, total value of work done, and classes of goods operated upon:

TABLE 1.—DYEING AND FINISHING TEXTILES.  
CAPITAL INVESTED.

| STATES.               | Number of establishments. | Aggregate capital. | VALUE OF PLANT. |             |             |                                   | LIVE ASSETS. |                |   |   | Value of property hired. |
|-----------------------|---------------------------|--------------------|-----------------|-------------|-------------|-----------------------------------|--------------|----------------|---|---|--------------------------|
|                       |                           |                    | Total.          | Land.       | Buildings.  | Machinery, tools, and implements. | Total.       | Raw materials. | Stock in process and finished products. | Cash, bills receivable, accounts receivable, and all sundries not elsewhere reported. |                          |
| Total.....            | 248                       | \$40,270,579       | \$19,879,039    | \$2,579,114 | \$7,596,641 | \$9,703,284                       | \$18,571,761 | \$3,586,358    | \$7,213,281                             | \$7,772,122   | \$1,819,779              |
| Connecticut.....      | 5                         | 775,352            | 821,096         | 58,700      | 331,184     | 231,212                           | 154,256      | 61,864         | 4,300                                   | 88,092  | .....                    |
| Illinois.....         | 3                         | 39,500             | 20,500          | 3,500       | 6,000       | 11,000                            | 6,000        | 2,000          | 1,000                                   | 3,000   | 13,000                   |
| Massachusetts.....    | 33                        | 12,135,654         | 5,187,513       | 673,931     | 2,010,687   | 2,502,895                         | 6,808,641    | 717,428        | 2,773,877                               | 3,317,336   | 139,500                  |
| New Jersey.....       | 41                        | 5,503,703          | 2,996,209       | 333,936     | 879,577     | 1,782,696                         | 2,201,194    | 442,430        | 713,998                                 | 1,044,771   | 306,300                  |
| New York.....         | 49                        | 5,479,961          | 2,225,566       | 366,300     | 721,700     | 1,137,566                         | 2,737,529    | 1,143,419      | 1,358,789                               | 230,321   | 516,866                  |
| Pennsylvania.....     | 83                        | 6,543,965          | 3,791,968       | 598,647     | 1,354,200   | 1,839,121                         | 2,504,372    | 372,193        | 918,148                                 | 1,214,031   | 247,625                  |
| Rhode Island.....     | 22                        | 6,318,480          | 3,763,321       | 432,600     | 1,832,398   | 1,498,323                         | 1,976,371    | 491,809        | 621,048                                 | 863,514   | 578,788                  |
| All other states (a). | 12                        | 3,473,964          | 1,272,866       | 111,500     | 460,895     | 700,471                           | 2,183,398    | 350,215        | 822,126                                 | 1,011,057   | 17,700                   |

a See note a, Table 1, page 7.

TABLE 1.—DYEING AND FINISHING TEXTILES—Continued.  
MISCELLANEOUS EXPENSES.

| STATES.                 | Number of establishments. | Total.      | Rent.     | Power and heat. | Taxes.    | Insurance. | Repairs, ordinary, of buildings and machinery. | Interest on cash used. | Sundries not elsewhere reported. |
|-------------------------|---------------------------|-------------|-----------|-----------------|-----------|------------|--|------------------------|----------------------------------|
| Total .....             | 248                       | \$3,154,219 | \$168,646 | \$23,138        | \$214,464 | \$158,996  | \$866,211                                      | \$697,503              | \$1,025,261                      |
| Connecticut .....       | 5                         | 77,336      |           |                 | 7,618     | 2,443      | 35,851   | 5,785                  | 25,639                           |
| Illinois .....          | 3                         | 1,426       | 920       |                 | 61        | 120        | 125  |                        | 200                              |
| Massachusetts .....     | 33                        | 876,082     | 23,530    | 6,413           | 82,524    | 32,675     | 251,799  | 250,013                | 229,128                          |
| New Jersey .....        | 41                        | 754,961     | 38,267    | 2,500           | 23,507    | 23,471     | 145,834  | 136,041                | 385,341                          |
| New York .....          | 49                        | 372,710     | 42,270    | 4,775           | 22,947    | 28,630     | 95,045   | 133,667                | 45,376                           |
| Pennsylvania .....      | 83                        | 425,706     | 45,343    | 6,250           | 21,742    | 37,357     | 134,325  | 30,176                 | 150,513                          |
| Rhode Island .....      | 22                        | 394,749     | 17,206    | 1,200           | 27,982    | 24,213     | 113,746  | 87,761                 | 122,641                          |
| All other states (a) .. | 12                        | 251,249     | 1,110     | 2,000           | 28,083    | 10,087     | 89,486   | 54,060                 | 66,423                           |

## LABOR AND WAGES, INCLUDING PIECEWORK.

| STATES.                 | Number of establishments. | Average number of hands employed. | Total wages paid. | OFFICERS AND CLERKS. |          |              | SKILLED LABOR. |          |           |              | UNSKILLED LABOR. |          |           |              |
|-------------------------|---------------------------|-----------------------------------|-------------------|----------------------|----------|--------------|----------------|----------|-----------|--------------|------------------|----------|-----------|--------------|
|                         |                           |                                   |                   | Males.               | Females. | Total wages. | Males.         | Females. | Children. | Total wages. | Males.           | Females. | Children. | Total wages. |
| Total .....             | 248                       | 20,267                            | \$9,717,011       | 636                  | 30       | \$805,291    | 14,697         | 2,178    | 711       | \$8,186,947  | 1,813            | 120      | 82        | \$724,773    |
| Connecticut .....       | 5                         | 489                               | 251,352           | 12                   |          | 14,250       | 368            | 72       | 2         | 223,064      | 22               | 13       |           | 14,038       |
| Illinois .....          | 3                         | 21                                | 10,424            | 4                    | 1        | 2,532        | 12             | 3        |           | 7,392        | 1                |          |           | 500          |
| Massachusetts .....     | 33                        | 4,352                             | 1,909,107         | 78                   | 4        | 99,320       | 3,164          | 516      | 197       | 1,668,627    | 363              | 23       | 7         | 141,160      |
| New Jersey .....        | 41                        | 3,864                             | 2,057,562         | 129                  |          | 179,425      | 2,976          | 346      | 35        | 1,744,466    | 359              |          | 19        | 133,671      |
| New York .....          | 49                        | 2,839                             | 1,481,723         | 112                  | 2        | 137,473      | 1,973          | 390      | 121       | 1,250,774    | 201              | 25       | 15        | 93,476       |
| Pennsylvania .....      | 83                        | 3,545                             | 1,803,822         | 184                  | 6        | 207,257      | 2,590          | 211      | 164       | 1,446,157    | 374              | 1        | 15        | 150,408      |
| Rhode Island .....      | 22                        | 3,720                             | 1,593,055         | 88                   | 13       | 130,059      | 2,518          | 513      | 119       | 1,308,696    | 386              | 57       | 26        | 154,300      |
| All other states (a) .. | 12                        | 1,437                             | 609,966           | 29                   | 4        | 34,975       | 1,096          | 127      | 73        | 537,771      | 107              | 1        |           | 37,220       |

## POWER.

| STATES.                 | Number of establishments. | STEAM.   |          |              | WATER.        |              |                 |              | ALL OTHER MACHINERY. |              |                    |
|-------------------------|---------------------------|----------|----------|--------------|---------------|--------------|-----------------|--------------|----------------------|--------------|--------------------|
|                         |                           | Boilers. | Engines. | Horse power. | Water wheels. |              | Turbine wheels. |              | Motors.              | Horse power. | Printing machines. |
|                         |                           |          |          |              | Number.       | Horse power. | Number.         | Horse power. |                      |              |                    |
| Total .....             | 248                       | 927      | 1,011    | 54,370       | 11            | 630          | 30              | 2,397        | 4                    | 45.5         | 287                |
| Connecticut .....       | 5                         | 14       | 13       | 725          | 5             | 350          | 4               | 111          |                      |              | 4                  |
| Illinois .....          | 3                         | 3        | 3        | 57           |               |              |                 |              |                      |              |                    |
| Massachusetts .....     | 33                        | 202      | 132      | 11,533       | 3             | 160          | 7               | 668          | 1                    | 5.0          | 77                 |
| New Jersey .....        | 41                        | 139      | 199      | 7,005        | 1             | 20           | 3               | 335          | 1                    | 10.0         | 56                 |
| New York .....          | 49                        | 156      | 186      | 12,545       |               |              | 5               | 225          |                      |              | 70                 |
| Pennsylvania .....      | 83                        | 226      | 259      | 8,663        | 1             | 70           |                 |              |                      |              | 17                 |
| Rhode Island .....      | 22                        | 135      | 182      | 10,535       | 1             | 30           | 4               | 258          |                      |              | 44                 |
| All other states (a) .. | 12                        | 52       | 37       | 3,307        |               |              | 7               | 805          | 2                    | 30.5         | 19                 |

a See note a, Table 1, page 7.

TABLE 1.—DYEING AND FINISHING TEXTILES—Continued.

## MATERIALS.

| STATES.                 | Number of establishments. | Total materials. |             | Chemicals and dye-stuffs. |           | Starch.   |           | Soap.       |             | Fuel. | All other materials used. |
|-------------------------|---------------------------|------------------|-------------|---------------------------|-----------|-----------|-----------|-------------|-------------|-------|---------------------------|
|                         |                           | Cost.            | Cost.       | Pounds.                   | Cost.     | Pounds.   | Cost.     | Cost.       | Cost.       | Cost. |                           |
| Total .....             | 248                       | \$12,362,082     | \$8,407,693 | 18,649,606                | \$660,577 | 6,766,696 | \$279,272 | \$1,617,848 | \$1,366,692 |       |                           |
| Connecticut .....       | 5                         | 300,360          | 114,126     | 556,763                   | 17,815    | 32,318    | 2,049     | 58,711      | 107,659     |       |                           |
| Illinois .....          | 3                         | 6,346            | 4,270       | .....                     | .....     | 8,200     | 504       | 1,072       | 1,000       |       |                           |
| Massachusetts .....     | 33                        | 2,794,951        | 1,950,550   | 4,538,183                 | 125,288   | 753,860   | 25,599    | 404,778     | 288,736     |       |                           |
| New Jersey .....        | 41                        | 2,708,621        | 2,068,192   | 3,184,240                 | 109,466   | 1,730,738 | 83,775    | 239,329     | 207,859     |       |                           |
| New York .....          | 49                        | 1,449,344        | 889,577     | 2,242,012                 | 73,836    | 995,683   | 44,321    | 216,618     | 224,992     |       |                           |
| Pennsylvania .....      | 83                        | 2,389,232        | 1,808,041   | 3,517,503                 | 107,269   | 2,160,788 | 80,793    | 284,546     | 108,538     |       |                           |
| Rhode Island .....      | 22                        | 1,818,151        | 1,064,475   | 3,138,601                 | 129,050   | 809,774   | 32,205    | 351,521     | 240,900     |       |                           |
| All other states (a) .. | 12                        | 894,577          | 508,462     | 1,472,304                 | 97,833    | 275,335   | 10,026    | 91,273      | 186,963     |       |                           |

## WORK DONE.

| STATES.                 | Number of establishments. | Total value of work done. | WOOLEN YARNS DYED.      |           | WORSTED YARNS DYED. |           | COTTON YARNS DYED. |             | SPUN SILK YARNS DYED. |           |
|-------------------------|---------------------------|---------------------------|-------------------------|-----------|---------------------|-----------|--------------------|-------------|-----------------------|-----------|
|                         |                           |                           | Pounds.                 | Value.    | Pounds.             | Value.    | Pounds.            | Value.      | Pounds.               | Value.    |
| Total .....             | 248                       | \$28,900,560              | 17,999,651              | \$751,801 | 9,342,157           | \$493,974 | 48,762,759         | \$2,036,127 | 311,830               | \$119,810 |
| Connecticut .....       | 5                         | 715,388                   | .....                   | .....     | .....               | .....     | 110,000            | 11,500      | .....                 | .....     |
| Illinois .....          | 3                         | 26,741                    | 1,031                   | 206       | 30,000              | 3,000     | 81,720             | 7,535       | 10,000                | 5,000     |
| Massachusetts .....     | 33                        | 6,496,215                 | 102,400                 | 9,800     | 500,000             | 42,500    | 5,172,909          | 242,356     | .....                 | .....     |
| New Jersey .....        | 41                        | 6,183,397                 | 138,926                 | 6,043     | 10,615              | 1,331     | 1,486,400          | 27,140      | 8,400                 | 5,000     |
| New York .....          | 49                        | 3,636,051                 | 459,700                 | 69,352    | 62,000              | 23,162    | 871,100            | 76,368      | 180,200               | 85,520    |
| Pennsylvania .....      | 83                        | 5,240,761                 | <sup>b</sup> 17,216,404 | 660,657   | 3,498,342           | 398,935   | 33,499,727         | 1,346,942   | 111,730               | 23,090    |
| Rhode Island .....      | 22                        | 4,743,561                 | 29,190                  | 2,543     | 241,000             | 20,030    | 6,522,037          | 291,161     | 1,500                 | 1,200     |
| All other states (a) .. | 12                        | 1,858,446                 | 52,000                  | 3,200     | 200                 | 16        | 1,018,866          | 33,125      | .....                 | .....     |

## WORK DONE—Continued.

| STATES.                 | Number of establishments. | THROWN SILK DYED. |             | WOOL STOCK. |          | COTTON STOCK. |           | WOOL AND WORSTED PIECE GOODS. |           | COTTON PIECE GOODS DYED. |             |
|-------------------------|---------------------------|-------------------|-------------|-------------|----------|---------------|-----------|-------------------------------|-----------|--------------------------|-------------|
|                         |                           | Pounds.           | Value.      | Pounds.     | Value.   | Pounds.       | Value.    | Square yards.                 | Value.    | Square yards.            | Value.      |
| Total .....             | 248                       | 3,322,017         | \$2,346,387 | 1,160,666   | \$48,828 | 4,676,344     | \$204,827 | 20,779,034                    | \$652,998 | 446,496,822              | \$5,671,488 |
| Connecticut .....       | 5                         | 15,600            | 15,600      | .....       | .....    | 165,000       | 5,400     | .....                         | .....     | 22,398,076               | 340,201     |
| Illinois .....          | 3                         | .....             | .....       | .....       | .....    | .....         | .....     | .....                         | .....     | .....                    | .....       |
| Massachusetts .....     | 33                        | .....             | .....       | 280,000     | 5,600    | 32,000        | 4,650     | 7,685,654                     | 92,853    | 113,430,837              | 1,388,927   |
| New Jersey .....        | 41                        | 2,366,937         | 2,120,318   | 75,399      | 5,770    | 848,466       | 28,079    | .....                         | .....     | 87,748,170               | 976,956     |
| New York .....          | 49                        | 272,815           | 125,571     | 125,000     | 4,500    | 230,000       | 7,200     | 1,250,150                     | 25,022    | 30,177,807               | 399,593     |
| Pennsylvania .....      | 83                        | 166,665           | 84,898      | 587,267     | 25,008   | 1,525,528     | 47,446    | 10,793,880                    | 496,509   | 93,056,440               | 1,359,002   |
| Rhode Island .....      | 22                        | .....             | .....       | 90,000      | 7,200    | 1,875,000     | 112,000   | 1,002,550                     | 34,964    | 50,727,100               | 734,522     |
| All other states (a) .. | 12                        | .....             | .....       | 3,000       | 750      | 350           | 52        | 46,800                        | 3,650     | 48,958,392               | 472,287     |

a See note a, Table 1, page 7.

b Includes 400,000 pounds woolen and worsted.

TABLE 1.—DYEING AND FINISHING TEXTILES—Continued.  
WORK DONE—Continued.

| STATES.                 | Number of establishments. | COTTON PIECE GOODS BLEACHED. |             | COTTON PIECE GOODS PRINTED. |              | SILK PIECE GOODS. |           | MIXED TEXTILE PIECE GOODS. |             | All other work done. |
|-------------------------|---------------------------|------------------------------|-------------|-----------------------------|--------------|-------------------|-----------|----------------------------|-------------|----------------------|
|                         |                           | Square yards.                | Value.      | Square yards.               | Value.       | Square yards.     | Value.    | Square yards.              | Value.      |                      |
| Total .....             | 248                       | 454,357,758                  | \$3,369,940 | 579,667,368                 | \$10,355,032 | 7,405,399         | \$394,777 | 60,716,250                 | \$2,069,765 | \$384,806            |
| Connecticut .....       | 5                         | 33,126,636                   | 242,504     | 4,358,016                   | 68,192       |                   |           |                            |             | 31,991               |
| Illinois .....          | 3                         |                              |             |                             |              |                   |           |                            |             | 11,000               |
| Massachusetts.....      | 33                        | 118,891,995                  | 640,375     | 184,198,408                 | 3,997,087    | 60,000            | 6,000     | 50,000                     | 5,000       | 61,067               |
| New Jersey .....        | 41                        | 25,980,644                   | 216,365     | 94,862,907                  | 1,625,617    | 4,705,012         | 116,373   | 19,790,000                 | 1,029,400   | 25,000               |
| New York.....           | 49                        | 21,316,000                   | 195,762     | 94,622,693                  | 1,508,307    | 2,516,787         | 269,839   | 14,295,150                 | 691,015     | 149,840              |
| Pennsylvania.....       | 83                        | 58,760,980                   | 175,000     | 24,187,753                  | 268,206      | 120,100           | 1,210     | 24,167,900                 | 267,225     | 86,633               |
| Rhode Island.....       | 22                        | 192,163,959                  | 1,440,921   | 140,054,180                 | 2,004,890    |                   |           | 2,409,200                  | 75,805      | 18,325               |
| All other states (a) .. | 12                        | 54,117,544                   | 459,013     | 37,383,411                  | 882,733      | 3,500             | 1,350     | 4,000                      | 1,320       | 950                  |

<sup>a</sup>Includes states having less than 3 establishments, so that the operations of individual establishments may not be disclosed. These establishments are distributed as follows: Delaware, 1; Iowa, 1; Maine, 1; Maryland, 2; Minnesota, 1; Missouri, 1; New Hampshire, 2; Ohio, 2; West Virginia, 1.

<sup>b</sup>Dyed, bleached, and printed.

Table 2 shows by states, with totals for the United States, the returns of establishments exclusively engaged in dyeing and finishing woolen and worsted, cotton, silk, and mixed goods and yarns, respectively.

TABLE 2.—DYEING AND FINISHING TEXTILES.  
WOOLEN AND WORSTED GOODS AND YARNS.

| STATES.               | Number of establishments. | Aggregate capital. | Miscellaneous expenses. | LABOR AND WAGES.                  |        |          |           |                   |
|-----------------------|---------------------------|--------------------|-------------------------|-----------------------------------|--------|----------|-----------|-------------------|
|                       |                           |                    |                         | Average number of hands employed. |        |          |           | Total wages paid. |
|                       |                           |                    |                         | Total.                            | Males. | Females. | Children. |                   |
| United States..       | 39                        | \$2,299,537        | \$153,908               | 1,543                             | 1,482  | 58       | 3         | \$1,046,304       |
| Massachusetts.....    | 3                         | 65,500             | 3,171                   | 29                                | 27     | 2        |           | 15,550            |
| New Jersey.....       | 3                         | 475,667            | 39,999                  | 340                               | 333    | 2        |           | 297,337           |
| New York.....         | 5                         | 453,550            | 45,507                  | 322                               | 322    |          |           | 278,003           |
| Pennsylvania.....     | 24                        | 1,271,206          | 62,194                  | 819                               | 765    | 52       | 2         | 436,541           |
| All other states (a). | 4                         | 33,614             | 3,037                   | 33                                | 30     | 2        | 1         | 18,868            |

COTTON GOODS AND YARNS.

|                       |     |            |           |        |        |       |     |           |
|-----------------------|-----|------------|-----------|--------|--------|-------|-----|-----------|
| United States...      | 113 | 30,136,149 | 2,469,412 | 14,491 | 11,894 | 1,844 | 753 | 6,440,408 |
| Connecticut.....      | 4   | 771,652    | 76,686    | 483    | 396    | 85    | 2   | 243,752   |
| Massachusetts.....    | 24  | 9,002,357  | 713,017   | 3,279  | 2,750  | 342   | 137 | 1,413,333 |
| New Jersey.....       | 13  | 3,290,980  | 577,655   | 2,079  | 1,740  | 287   | 52  | 938,166   |
| New York.....         | 16  | 4,009,968  | 261,364   | 1,958  | 1,472  | 352   | 134 | 874,975   |
| Pennsylvania.....     | 31  | 3,892,146  | 230,467   | 1,814  | 1,539  | 102   | 173 | 885,952   |
| Rhode Island.....     | 17  | 5,722,464  | 361,164   | 3,460  | 2,784  | 544   | 132 | 1,480,684 |
| All other states (a). | 8   | 3,446,632  | 249,059   | 1,418  | 1,213  | 132   | 73  | 598,546   |

SILK GOODS AND YARNS.

|                       |    |           |         |       |       |     |   |           |
|-----------------------|----|-----------|---------|-------|-------|-----|---|-----------|
| United States...      | 52 | 2,368,157 | 182,608 | 1,745 | 1,639 | 102 | 4 | 1,013,325 |
| New Jersey.....       | 24 | 1,507,106 | 124,207 | 1,292 | 1,233 | 57  | 2 | 744,059   |
| New York.....         | 21 | 751,638   | 51,781  | 391   | 344   | 45  | 2 | 230,034   |
| All other states (a). | 7  | 109,413   | 6,620   | 62    | 62    |     |   | 39,232    |

MIXED GOODS AND YARNS.

|                       |    |           |         |       |       |     |    |           |
|-----------------------|----|-----------|---------|-------|-------|-----|----|-----------|
| United States...      | 44 | 5,466,736 | 348,291 | 2,488 | 2,131 | 324 | 33 | 1,216,974 |
| Massachusetts.....    | 6  | 3,067,797 | 159,894 | 1,044 | 828   | 199 | 17 | 480,224   |
| New York.....         | 7  | 264,805   | 14,058  | 163   | 148   | 20  |    | 98,706    |
| Pennsylvania.....     | 23 | 1,285,900 | 127,400 | 862   | 794   | 64  | 4  | 446,425   |
| All other states (a). | 8  | 848,234   | 46,939  | 414   | 361   | 41  | 12 | 191,619   |

a See note a, Table 2, page 9.

TABLE 2.—DYEING AND FINISHING TEXTILES—Continued.  
WOOLEN AND WORSTED GOODS AND YARNS—Continued.

| STATES.               | Number of establishments. | POWER.       |              |              | Printing machines. | MATERIALS.       |                          |           |                      | Total value work done. |
|-----------------------|---------------------------|--------------|--------------|--------------|--------------------|------------------|--------------------------|-----------|----------------------|------------------------|
|                       |                           | Steam.       | Water.       | All other.   |                    | Total materials. | Chemicals and dyestuffs. | Fuel.     | All other materials. |                        |
|                       |                           | Horse power. | Horse power. | Horse power. |                    | Cost.            | Cost.                    | Cost.     | Cost.                |                        |
| United States...      | 39                        | 3,794        | 103          | .....        | 41                 | \$1,237,227      | \$1,009,537              | \$132,215 | \$95,475             | \$2,790,405            |
| Massachusetts.....    | 3                         | 154          | 18           | .....        | .....              | 11,268           | 5,875                    | 2,700     | 2,693                | 41,252                 |
| New Jersey.....       | 3                         | 1,183        | 85           | .....        | 20                 | 332,039          | 277,759                  | 30,600    | 23,680               | 771,665                |
| New York.....         | 5                         | 1,065        | .....        | .....        | 21                 | 290,590          | 247,360                  | 29,880    | 13,350               | 662,425                |
| Pennsylvania.....     | 24                        | 1,357        | .....        | .....        | .....              | 585,357          | 463,665                  | 66,615    | 55,077               | 1,261,163              |
| All other states (a). | 4                         | 35           | .....        | .....        | .....              | 17,973           | 14,878                   | 2,420     | 675                  | 53,900                 |

## COTTON GOODS AND YARNS—Continued.

|                       |     |        |       |       |     |           |           |           |           |            |
|-----------------------|-----|--------|-------|-------|-----|-----------|-----------|-----------|-----------|------------|
| United States...      | 113 | 44,708 | 2,863 | 35.5  | 212 | 8,346,933 | 5,289,783 | 1,187,035 | 1,870,115 | 19,876,364 |
| Connecticut.....      | 4   | 715    | 440   | ..... | 4   | 294,120   | 109,126   | 58,111    | 126,883   | 699,788    |
| Massachusetts.....    | 24  | 10,454 | 765   | 5.0   | 49  | 2,189,546 | 1,573,749 | 305,671   | 310,126   | 5,264,241  |
| New Jersey.....       | 13  | 4,845  | 270   | ..... | 36  | 1,183,716 | 752,476   | 126,147   | 305,093   | 2,878,016  |
| New York.....         | 16  | 10,654 | 225   | ..... | 43  | 952,755   | 489,263   | 168,483   | 295,009   | 2,262,412  |
| Pennsylvania.....     | 31  | 5,631  | 70    | ..... | 17  | 1,226,558 | 927,971   | 131,973   | 163,614   | 2,621,107  |
| Rhode Island.....     | 17  | 9,120  | 288   | ..... | 44  | 1,615,997 | 937,826   | 303,223   | 374,948   | 4,320,707  |
| All other states (a). | 8   | 3,289  | 805   | 30.5  | 19  | 884,241   | 499,372   | 90,427    | 294,442   | 1,830,093  |

## SILK GOODS AND YARNS—Continued.

|                       |    |       |       |       |       |           |           |        |        |           |
|-----------------------|----|-------|-------|-------|-------|-----------|-----------|--------|--------|-----------|
| United States...      | 52 | 1,513 | 21    | 10.0  | ..... | 1,272,251 | 1,092,192 | 83,475 | 96,584 | 2,935,101 |
| New Jersey.....       | 24 | 777   | ..... | 10.0  | ..... | 1,126,746 | 987,957   | 70,582 | 68,207 | 2,333,716 |
| New York.....         | 21 | 545   | ..... | ..... | ..... | 107,054   | 75,012    | 9,498  | 22,544 | 478,637   |
| All other states (a). | 7  | 191   | 21    | ..... | ..... | 38,451    | 29,223    | 3,395  | 5,833  | 122,748   |

## MIXED GOODS AND YARNS—Continued.

|                       |    |       |       |       |       |           |           |         |         |           |
|-----------------------|----|-------|-------|-------|-------|-----------|-----------|---------|---------|-----------|
| United States...      | 44 | 4,355 | 40    | ..... | 34    | 1,505,671 | 1,016,181 | 245,123 | 244,367 | 3,298,690 |
| Massachusetts.....    | 6  | 925   | 40    | ..... | 28    | 594,137   | 370,926   | 96,407  | 126,804 | 1,190,722 |
| New York.....         | 7  | 281   | ..... | ..... | 6     | 98,945    | 77,942    | 8,757   | 12,246  | 232,577   |
| Pennsylvania.....     | 23 | 1,529 | ..... | ..... | ..... | 546,706   | 393,182   | 80,343  | 73,181  | 1,255,343 |
| All other states (a). | 8  | 1,620 | ..... | ..... | ..... | 265,883   | 174,131   | 59,616  | 32,136  | 620,048   |

a All other states includes in wool, Rhode Island, 3; Missouri, 1. In cotton, Delaware, 1; Iowa, 1; Maine, 1; Maryland, 1; New Hampshire, 2; Ohio, 1; West Virginia, 1. In silk, Pennsylvania, 5; Illinois, 1; Connecticut, 1. In mixed, Illinois, 2; Maryland, 1; Minnesota, 1; New Jersey, 1; Ohio, 1; Rhode Island, 2, so that the operations of individual establishments may not be disclosed.

# CENSUS BULLETIN.

No. 300.

WASHINGTON, D. C.

November 7, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF BIRMINGHAM, ALABAMA.

DEPARTMENT OF THE INTERIOR,  
CENSUS OFFICE,

WASHINGTON, D. C., November 4, 1892.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Birmingham for the year ended May 31, 1890, prepared under direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins in a form similar to this for principal cities not separately reported in 1880, to be followed by final reports containing data in detail respecting all industries for each city. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A statement is presented for 1890 in Table I, showing the totals under general heads of the inquiry. The statements presented therewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

In 1880 the data relating to the manufactures of Birmingham were included in the totals published for Jefferson county, therefore it is not practicable to present a comparative statement indicating the growth of manufacturing industry in the city during the decade, but the totals for the entire county at that date were as follows:

### JEFFERSON COUNTY: 1880.

|                                   |             |
|-----------------------------------|-------------|
| Number of establishments reported | 36          |
| Capital invested                  | \$1,420,125 |
| Number of hands employed          | 301         |
| Wages paid                        | \$96,314    |
| Value of materials used           | \$361,879   |
| Value of product                  | \$757,741   |

TABLE 1.—STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY.

| INDUSTRIES.             | Number industries reported. | Number establishments reporting. | Capital. | Hands employed. | Wages paid. | Cost of materials used. |             |
|-------------------------|-----------------------------|----------------------------------|----------|-----------------|-------------|-------------------------|-------------|
|                         |                             |                                  |          |                 |             |                         |             |
| All industries (a)..... | { 1880<br>1890              | 34                               | 223      | \$3,401,835     | 2,869       | \$1,523,375             | \$2,503,443 |

  

| INDUSTRIES.             | Miscellaneous expenses. | Value of product | MUNICIPAL DATA. |                     |                         |           |
|-------------------------|-------------------------|------------------|-----------------|---------------------|-------------------------|-----------|
|                         |                         |                  | Population.     | Assessed valuation. | Municipal debt. (b)     |           |
| All industries (a)..... | { 1880<br>1890          | \$438,997        | \$5,236,909     | 3,086<br>26,178     | \$698,160<br>17,000,000 | \$680,000 |

<sup>a</sup> Statistics of manufactures for 1880 were included in totals published for Jefferson county.

<sup>b</sup> The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries. To avoid disclosure of the operations of individual establishments, only such important or characteristic industries as have 3 or more establishments engaged therein are included in this table. Among other important industries, in which less than 3 establishments are reported, may be mentioned clothing, men's, wholesale, 1 establishment; confectionery, 2 establishments. The 3 establishments referred to report invested capital, \$93,500; hands employed, 63, and value of products, \$188,560.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate in each class, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES.

| CLASSIFICATION OF INQUIRIES.   | Carriages<br>and<br>wagons. | Foundry and<br>machine shop<br>products. | Iron and steel—<br>manufactured<br>from ore or<br>blooms. | Lumber—<br>planing mill<br>products. | Printing and<br>publishing. |
|--|-----------------------------|--|---|--------------------------------------|-----------------------------|
|  | (4 establish-<br>ments.)    | (7 establish-<br>ments.)                 | (3 establish-<br>ments.)                                  | (8 establish-<br>ments.)             | (15 establish-<br>ments.)   |
| CAPITAL EMPLOYED—Aggregate.....  | \$51,250                    | \$486,717                                | \$1,558,975   | \$244,610                            | \$389,855                   |
| HIRED PROPERTY—Total.....  | 18,900                      | 19,940                                   |   | 28,210                               | 92,780                      |
| PLANT—Total.....   | 11,300                      | 348,270                                  | 1,325,000   | 116,300                              | 252,850                     |
| Land.....  | 5,000                       | 228,700                                  | 245,000   | 60,000                               |                             |
| Buildings.....   | 2,300                       | 37,362                                   | 665,000   | 22,500                               |                             |
| Machinery, tools, and implements.....  | 4,000                       | 82,208                                   | 415,000   | 33,800                               | 252,850                     |
| LIVE ASSETS—Total.....   | 21,050                      | 118,507                                  | 233,975   | 100,100                              | 44,225                      |
| Raw materials.....   | 6,300                       | 27,519                                   | 48,343  | 17,700                               | 7,535                       |
| Stock in process and finished product.....   | 4,355                       | 35,775                                   | 66,376  | 23,550                               | 840                         |
| Cash, bills and accounts receivable, and all sundries not<br>elsewhere reported..... | 10,395                      | 55,213                                   | 119,256   | 58,850                               | 35,850                      |
| WAGES PAID—Aggregate.....  | \$28,450                    | \$167,681                                | \$416,773   | \$96,506                             | \$155,684                   |
| Average number of hands employed during the year.....                                | 48                          | 269                                      | 1,020   | 179                                  | 198                         |
| Males above 16 years.....  | 48                          | 251                                      | 1,020   | 179                                  | 160                         |
| Females above 15 years.....  |                             | 1  |   |                                      | 4                           |
| Children.....  |                             | 12                                       |   |                                      | 24                          |
| Pieceworkers.....  |                             | 5  |   |                                      | 10                          |
| MATERIALS USED—Aggregate cost.....   | \$15,750                    | \$151,057                                | \$745,779   | \$181,180                            | \$83,806                    |
| Principal materials.....   | 14,493                      | 136,370                                  | 425,944   | 177,940                              | 77,088                      |
| Fuel.....  | 657                         | 12,465                                   | 270,333   | 1,160                                | 1,153                       |
| Mill supplies.....   |                             | 1,266                                    |   | 750                                  | 100                         |
| All other materials.....   | 600                         | 956                                      | 49,502  | 1,330                                | 5,465                       |
| MISCELLANEOUS EXPENSES—Aggregate.....  | \$2,877                     | \$11,331                                 | \$210,852   | \$4,806                              | \$58,504                    |
| Amount paid for contract work.....   |                             |  |   |                                      |                             |
| Rent.....  | 1,910                       | 2,320                                    |   | 3,130                                | 8,385                       |
| Power and heat.....  |                             |  |   | 80                                   | 460                         |
| Taxes.....   | 127                         | 1,020                                    | 5,504   | 726                                  | 452                         |
| Insurance.....   | 440                         | 1,868                                    | 2,867   | 292                                  | 1,067                       |
| Repairs, ordinary, of buildings and machinery.....                                   |                             | 3,795                                    | 63,725  | 332                                  | 710                         |
| Interest on cash used in the business.....   | 400                         | 2,328                                    | 6,462   | 196                                  | 1,200                       |
| All sundries not elsewhere reported.....   |                             |  | 132,293   | 50                                   | 41,230                      |
| GOODS MANUFACTURED—Aggregate value.....  | \$54,363                    | \$385,229                                | \$1,618,201   | \$345,330                            | \$359,249                   |
| Principal product.....   | 18,213                      | 378,229                                  | 1,585,801   | 332,830                              | 359,249                     |
| All other products, including receipts from custom work and<br>repairing.....        | 36,150                      | 7,000                                    | 32,400  | 12,500                               |                             |

ROBERT P. PORTER,  
Superintendent of Census.



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# PRELIMINARY RESULTS.

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# LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR.

CENSUS OFFICE.

WASHINGTON, D. C., June 23, 1894.

SIR:

To enable the public to realize the benefits of the compilation of census statistics at an earlier date than would be possible with the publication of the complete reports of the Eleventh Census, bulletins, touching nearly every subject authorized by law, have been published from time to time. The bulletins printed to date number 380, exclusive of 70 Extra Census Bulletins, and a sufficient portion of each edition has been retained for use of members of Congress.

Herewith is presented the eleventh volume of the series. The present volume contains 50 bulletins, bound for ready reference, with a table of contents by subjects.

CARROLL D. WRIGHT,

*Commissioner of Labor in charge.*

THE SECRETARY OF THE INTERIOR.

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# CENSUS BULLETIN.

No. 301. *2*

WASHINGTON, D. C.

November 7, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF BROCKTON, MASSACHUSETTS.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., November 4, 1892.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Brockton for the year ended May 31, 1890, prepared under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins in a form similar to this for principal cities not separately reported in 1880, to be followed by final reports containing data in detail respecting all industries for each city. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A statement is presented for 1890 in Table 1, showing the totals under general heads of the inquiry. The statements presented therewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

In 1880 the data relating to the manufactures of Brockton were included in the totals published for Plymouth county, therefore it is not practicable to present a comparative statement indicating the growth of manufacturing industry in the city during the decade, but the totals for the entire county at that date were as follows:

### PLYMOUTH COUNTY: 1880.

|  |              |
|--|--------------|
| Number of establishments reported..... | 676          |
| Capital invested.....                  | \$8,566,141  |
| Number of hands employed.....          | 13,817       |
| Wages paid.....                        | \$5,755,003  |
| Value of materials used.....           | \$14,885,665 |
| Value of product.....                  | \$23,771,677 |

TABLE 1.—STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY.

| INDUSTRIES.             | Number<br>industries<br>reported. | Number<br>establish-<br>ments<br>reporting. | Capital. | Hands<br>employed. | Wages paid. | Cost of mate-<br>rials used. |              |
|-------------------------|-----------------------------------|---|----------|--------------------|-------------|------------------------------|--------------|
|                         |                                   |   |          |                    |             |                              |              |
| All industries (a)..... | { 1880<br>1890                    | 64  | 530      | \$7,538,399        | 11,141      | \$6,566,314                  | \$11,157,552 |

  

| INDUSTRIES.             | Miscellaneous<br>expenses. | Value of<br>product. | MUNICIPAL DATA. |                        |                           |                     |
|-------------------------|----------------------------|----------------------|-----------------|------------------------|---------------------------|---------------------|
|                         |                            |                      | Population.     | Assessed<br>valuation. | Municipal<br>debt. (b)    |                     |
| All industries (a)..... | { 1880<br>1890             | \$1,146,169          | \$20,944,705    | 13,608<br>27,294       | \$6,252,413<br>17,477,847 | \$71,200<br>530,476 |

<sup>a</sup>Statistics of manufactures for 1880 were included in totals published for Plymouth county. The totals for 1890 include a return from 1 establishment engaged in the manufacture of "Timber products not made in mill". This industry is reported as of the place where the office of the establishment is situated, because it is not practicable to exactly locate its operations within the limits of a county or municipality.

<sup>b</sup>The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries. To avoid disclosure of the operations of individual establishments, only such important or characteristic industries as have 3 or more establishments engaged therein are included in this table. Among other important industries, in which less than 3 establishments are reported, may be mentioned clothing, men's wholesale, 2 establishments; lasts, 2 establishments, and rubber and elastic goods, 2 establishments. The 6 establishments referred to report invested capital, \$408,939; hands employed, 529, and value of products, \$707,357.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate in each class, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES.

| CLASSIFICATION OF INQUIRIES.  | Boot and shoe cut stock. (a)<br>(12 establishments.) | Boot and shoe findings.<br>(14 establishments.) | Boots and shoes—factory products.<br>(73 establishments.) | Boxes—fancy and paper.<br>(4 establishments.) | Confectionery.<br>(5 establishments.) |
|---|--|---|---|---|---------------------------------------|
| <b>CAPITAL EMPLOYED—Aggregate</b> .....   | \$116,929  | \$227,418                                       | \$6,180,188   | \$148,049                                     | \$107,412                             |
| <b>Hired property—Total</b> .....   | 26,200   | 84,250  | 750,100   | 19,300  | 5,350                                 |
| <b>Plant—Total</b> .....  | 11,737   | 31,640  | 1,186,637   | 58,041  | 53,493                                |
| Land.....   | 525  | 3,300   | 182,975   | 23,500  | 36,000                                |
| Buildings.....  | 1,000  | 5,050   | 344,766   | 7,200   | 12,000                                |
| Machinery, tools, and implements.....   | 10,212   | 23,290  | 658,896   | 27,341  | 5,493                                 |
| <b>Live assets—Total</b> .....  | 78,992   | 111,528   | 4,243,451   | 70,708  | 48,569                                |
| Raw materials.....  | 10,025   | 27,396  | 799,875   | 21,763  | 12,573                                |
| Stock in process and finished product.....  | 15,480   | 19,419  | 683,492   | 9,951   | 14,365                                |
| Cash, bills and accounts receivable, and all sundries not elsewhere reported..... | 53,487   | 64,713  | 2,760,084   | 38,994  | 21,631                                |
| <b>WAGES PAID—Aggregate</b> .....   | \$43,875   | \$58,562  | \$4,916,936   | \$92,562                                      | \$27,708                              |
| Average number of hands employed during the year.....                             | 81   | 115   | 8,120   | 211   | 47                                    |
| Males above 16 years.....   | 71   | 72  | 2,925   | 65  | 35                                    |
| Females above 15 years.....   | 5  | 13  | 689   | 16  | 8                                     |
| Children.....   |  |   | 52  | 16  | 1                                     |
| Pieceworkers.....   | 5  | 30  | 4,454   | 114   | 3                                     |
| <b>MATERIALS USED—Aggregate cost</b> .....  | \$195,998  | \$220,430                                       | \$8,944,474   | \$110,806                                     | \$103,394                             |
| Principal materials.....  | 195,448  | 164,371   | 8,044,603   | 105,211                                       | 69,053                                |
| Fuel.....   | 512  | 1,724   | 33,857  | 941   | 1,230                                 |
| Mill supplies.....  | 1  |   | 43  | 170   | 60                                    |
| All other materials.....  | 37   | 54,335  | 765,971   | 4,484   | 33,051                                |
| <b>MISCELLANEOUS EXPENSES—Aggregate</b> .....                                     | \$13,587   | \$16,992  | \$904,326   | \$8,457                                       | \$4,669                               |
| Amount paid for contract work.....  |  |   | 14,912  |   |                                       |
| Rent.....   | 1,797  | 5,016   | 52,428  | 1,345   | 370                                   |
| Power and heat.....   | 423  | 1,244   | 9,666   | 1,142   |                                       |
| Taxes.....  | 388  | 814   | 22,980  | 351   | 902                                   |
| Insurance.....  | 386  | 1,365   | 31,815  | 824   | 534                                   |
| Repairs, ordinary, of buildings and machinery.....                                | 500  | 2,845   | 57,209  | 970   | 1,055                                 |
| Interest on cash used in the business.....  | 3,318  | 810   | 54,687  | 432   | 975                                   |
| All sundries not elsewhere reported.....  | 6,775  | 5,898   | 660,629   | 3,383   | 833                                   |
| <b>GOODS MANUFACTURED—Aggregate value</b> .....                                   | \$275,255  | \$371,942                                       | \$16,171,624  | \$236,000                                     | \$143,150                             |
| Principal product.....  | 241,574  | 301,433   | 16,134,452  | 233,000                                       | 92,100                                |
| All other products, including receipts from custom work and repairing.....        | 33,681   | 70,509  | 37,172  | 3,000   | 51,050                                |

a Includes several branches of this industry, which will be specifically stated in final reports.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

| CLASSIFICATION OF INQUIRIES.   | Cutlery and<br>edge tools.<br>(6 establish-<br>ments.) | Foundry and<br>machine shop<br>products.<br>(11 establish-<br>ments.) | Iron and<br>steel—nails<br>and spikes,<br>cut and<br>wrought.<br>(4 establish-<br>ments.) | Printing and<br>publishing.<br>(3 establish-<br>ments.) | Slaughtering<br>and meat<br>packing. (a)<br>(3 establish-<br>ments.) |
|--|--|---|---|---|--|
| CAPITAL EMPLOYED—Aggregate.....  | \$44,119   | \$137,974   | \$50,700  | \$74,477  | \$36,900   |
| Hired property—Total.....  | 9,650  | 43,400  | 3,000   | 50,000  | 775  |
| PLANT—Total.....   | 13,800   | 47,550  | 26,800  | 13,100  | 25,000   |
| Land.....  | 1,000  | 2,100   | 2,000   | .....   | 3,000  |
| Buildings.....   | 3,000  | 1,350   | 6,000   | .....   | 17,500   |
| Machinery, tools, and implements.....  | 9,800  | 44,100  | 18,800  | 13,100  | 4,500  |
| LIVE ASSETS—Total.....   | 20,669   | 47,024  | 20,900  | 11,377  | 11,125   |
| Raw materials.....   | 2,015  | 5,300   | 1,700   | 824   | 625  |
| Stock in process and finished product.....   | 9,675  | 12,865  | 6,400   | .....   | 4,475  |
| Cash, bills and accounts receivable, and all sundries not<br>elsewhere reported..... | 8,979  | 28,859  | 12,800  | 10,553  | 6,025  |
| WAGES PAID—Aggregate.....  | \$25,275   | \$59,111  | \$32,074  | \$22,812  | \$8,946  |
| Average number of hands employed during the year.....                                | 41   | 86  | 45  | 38  | 15   |
| Males above 16 years.....  | 29   | 80  | 32  | 32  | 14   |
| Females above 15 years.....  | .....  | 1   | 1   | .....   | 1  |
| Children.....  | .....  | 1   | .....   | 1   | .....  |
| Piceworkers.....   | 12   | 4   | 12  | 5   | .....  |
| MATERIALS USED—Aggregate cost.....   | \$5,339  | \$24,887  | \$43,672  | \$22,132  | \$81,703   |
| Principal materials.....   | 4,252  | 19,587  | 41,013  | 21,832  | 75,583   |
| Fuel.....  | 742  | 1,496   | 1,266   | 50  | 215  |
| Mill supplies.....   | 80   | 424   | 3   | .....   | .....  |
| All other materials.....   | 265  | 3,380   | 1,390   | 250   | 5,905  |
| MISCELLANEOUS EXPENSES—Aggregate.....  | \$2,799  | \$9,107   | \$2,174   | \$10,957  | \$2,855  |
| Amount paid for contract work.....   | .....  | .....   | .....   | .....   | .....  |
| Rent.....  | 675  | 2,988   | 217   | 3,485   | 64   |
| Power and heat.....  | 480  | 1,620   | 654   | 742   | .....  |
| Taxes.....   | 139  | 290   | 347   | 225   | 376  |
| Insurance.....   | 115  | 507   | 425   | 180   | 505  |
| Repairs, ordinary, of buildings and machinery.....                                   | 732  | 460   | 310   | 250   | 585  |
| Interest on cash used in the business.....   | 12   | 1,050   | 51  | 300   | 650  |
| All sundries not elsewhere reported.....   | 646  | 2,192   | 170   | 5,775   | 675  |
| GOODS MANUFACTURED—Aggregate value.....  | \$51,647   | \$100,232   | \$102,048   | \$66,919  | \$97,100   |
| Principal product.....   | 42,847   | 64,599  | 102,048   | 66,919  | 85,585   |
| All other products, including receipts from custom work and<br>repairing.....        | 8,800  | 35,633  | .....   | .....   | 11,515   |

a Includes several branches of this industry, which will be specifically stated in final reports.

ROBERT P. PORTER,  
Superintendent of Census.

# CENSUS BULLETIN.

No. 302.

WASHINGTON, D. C.

November 7, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF SCRANTON, PENNSYLVANIA.

DEPARTMENT OF THE INTERIOR,  
CENSUS OFFICE,

WASHINGTON, D. C., November 4, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Scranton for the year ended May 31, 1890, prepared under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. The statements contained in this bulletin are preliminary and subject to modification for final report, therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry with the returns of 1880 it will be observed that the item of "Miscellaneous expenses" is given for 1890 only. No previous census inquiry has embraced the cost incurred in manufacturing operations other than wages paid and materials used.

The percentages of increase appear as follows:

### PERCENTAGES OF INCREASE.

|  |        |
|--|--------|
| Capital invested .....                 | 238.77 |
| Number of hands employed .....         | 139.45 |
| Wages paid .....                       | 198.63 |
| Cost of materials used .....           | 139.36 |
| Value of product at works .....        | 166.31 |
| Population of city .....               | 64.05  |
| Assessed valuation of city .....       | 236.66 |
| Municipal debt less sinking fund ..... | 11.23  |

Decrease in number of establishments reported, 36.11 per cent.

A striking feature of these returns is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$370 in 1880 to \$462 in 1890, or 24.86 per cent.

The decrease in the number of establishments reporting is found principally in the building and other local trades. This number will no doubt be increased as additional returns are received.

Attention is called to the presentation of labor and wage statistics. The "average wages" paid to all classes employed has always proved a stumbling block in census reports. It is believed the Eleventh Census, in obtaining data to show the classification of labor employed, the average term of employment, the various rates of wages per week, and the average number of men, women, and children, respectively, employed at each rate in the various classes, has taken a step in advance, which will be shown in detail in final reports, and appreciated by students of these data.

A handwritten signature in cursive script, reading "Robert D. Forster". The signature is written in dark ink and is positioned above the printed name.

*Superintendent of Census.*

# STATISTICS OF MANUFACTURES: 1890.

## CITY OF SCRANTON, PENNSYLVANIA.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. By virtue of the authority conferred by section 18 of the said act, the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

The instructions issued by this office to enumerators and special agents relating to the collection of statistics of manufactures were as follows:

It shall be their duty personally to visit every establishment of productive industry in their respective districts (except as noted) and to obtain the required information in the case of each manufacturing establishment.

The term "establishment of productive industry" must be understood in its broadest sense to embrace not only mills and factories but also the operation of all small establishments and the mechanical trades.

Restaurants, saloons, barber shops, the compounding of individual prescriptions by druggists and apothecaries, the operations of mercantile establishments, transportation corporations and lines, and professional services (except mechanical dentistry) are not considered as coming within the meaning of the law in this connection.

Great care must be taken by special agents and enumerators to guard against the omission from their returns of any establishment that comes properly within the scope of this investigation. \* \* \* They should have their eyes open to every indication of the presence of productive industry and should supplement personal observation by frequent and persistent inquiry.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

| INDUSTRIES. | Number industries reported. | Number establishments reporting. | Capital. (a) | Hands employed. | Wages paid. | Cost of materials used. |
|-------------|-----------------------------|----------------------------------|--------------|-----------------|-------------|-------------------------|
|             |                             |                                  |              |                 |             |                         |

  

| INDUSTRIES.         | Miscellaneous expenses. (b) | Value of product.         | MUNICIPAL DATA.  |                           |                      |
|---------------------|-----------------------------|---------------------------|------------------|---------------------------|----------------------|
|                     |                             |                           | Population.      | Assessed valuation.       | Municipal debt. (c)  |
| All industries..... | \$844,927                   | \$8,561,850<br>22,801,028 | 45,850<br>75,215 | \$4,680,805<br>15,758,237 | \$325,202<br>361,735 |

a The value of hired property is not included for 1890, because it was not reported in 1880.

b No inquiry in 1880 relating to "Miscellaneous expenses".

c The amount stated represents the "net debt", or total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 presents the statistics of 1880 and 1890 in the form of publication used in the reports for 1880. In comparing industrial statistics for 1880 and 1890 it should be borne in mind, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

The form of question respecting capital used at the census of 1880 was as follows: "Capital (real and personal) invested in the business". It became evident from the results then obtained that this question was neither sufficiently comprehensive nor properly understood, and therefore the full amount of capital employed in productive industry was not reported, thus forming an erroneous basis for deductions.

The present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically reported for each industry in final reports.

#### TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

#### LABOR EMPLOYED AND WAGES PAID.

In the form of inquiry used in the Eleventh Census respecting labor and wages, the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, as follows:

First. Operatives, engineers, and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

It should be noted that the first class includes all operatives, that is, those directly engaged in productive labor as well as skilled mechanics, while the second class includes all unskilled workmen other than operatives. The questions required a statement of the average number of men, women, and children, respectively, employed during the year in each class, also the actual amounts of wages paid to each number.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

#### MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

Expenses of selling are excluded, because the reported value of product is its selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

| CLASSIFICATION OF INQUIRIES.  | Carriages and<br>wagons. | Flouring and<br>grist mill<br>products. | Iron and steel.<br>(b)   | Liquors—malt.            | Lumber—<br>planed. (b)   |
|---|--------------------------|---|--------------------------|--------------------------|--------------------------|
|   | (9 establish-<br>ments.) | (5 establish-<br>ments.)                | (4 establish-<br>ments.) | (3 establish-<br>ments.) | (8 establish-<br>ments.) |
| CAPITAL EMPLOYED—Aggregate .....  | \$205,000                | \$369,724                               | \$3,840,706              | \$471,700                | \$429,536                |
| HIRED PROPERTY—Total .....  | 10,650                   | 17,100                                  |                          |                          | 24,360                   |
| PLANT—Total .....   | 142,400                  | 186,000                                 | 3,990,625                | 325,000                  | 209,200                  |
| Land .....  | 92,000                   | 87,000                                  | 220,000                  | 47,000                   | 104,500                  |
| Buildings .....   | 32,000                   | 61,000                                  | 1,229,200                | 193,000                  | 42,500                   |
| Machinery, tools, and implements .....  | 18,400                   | 38,000                                  | 2,541,325                | 85,000                   | 63,200                   |
| LIVE ASSETS—Total .....   | 51,950                   | 166,624                                 | 4,850,181                | 146,700                  | 204,976                  |
| Raw materials .....   | 13,150                   | 22,533                                  | 1,888,020                | 22,200                   | 64,150                   |
| Stock in process and finished product .....   | 20,200                   | 27,792                                  | 316,268                  | 70,500                   | 49,851                   |
| Cash, bills and accounts receivable, and all sundries not else-<br>where reported ..... | 18,600                   | 116,299                                 | 2,645,893                | 54,000                   | 90,975                   |
| WAGES PAID—Aggregate .....  | \$66,775                 | \$36,823                                | \$1,726,229              | \$66,140                 | \$135,020                |
| Average number of hands employed during the year .....                                  | 148                      | 56                                      | 3,298                    | 95                       | 229                      |
| Males above 16 years .....  | 147                      | 55                                      | 3,273                    | 95                       | 223                      |
| Females above 16 years .....  |                          | 1                                       |                          |                          |                          |
| Children .....  |                          |   | 25                       |                          |                          |
| Pieceworkers .....  | 1                        |   |                          |                          | 6                        |
| MATERIALS USED—Aggregate cost .....   | \$86,950                 | \$684,302                               | \$10,716,206             | \$289,580                | \$326,985                |
| Principal materials .....   | 83,320                   | 546,772                                 | 9,931,420                | 263,580                  | 306,116                  |
| Fuel .....  | 1,480                    | 2,537                                   | 504,792                  | 5,500                    | 1,794                    |
| Mill supplies .....   |                          | 1,803                                   |                          | 13,000                   | 2,375                    |
| All other materials .....   | 2,150                    | 133,190                                 | 279,994                  | 7,500                    | 16,200                   |
| MISCELLANEOUS EXPENSES—Aggregate .....  | \$5,937                  | \$39,518                                | \$352,136                | \$107,439                | \$12,950                 |
| Amount paid for contract work .....   |                          |   |                          |                          |                          |
| Rent .....  | 975                      | 1,560                                   |                          |                          | 2,220                    |
| Power and heat .....  |                          | 700                                     |                          |                          |                          |
| Taxes .....   | 799                      | 1,470                                   | 45,063                   | c89,120                  | 1,740                    |
| Insurance .....   | 1,383                    | 3,065                                   | 9,113                    | 2,120                    | 3,700                    |
| Repairs, ordinary, of buildings and machinery .....                                     | 1,100                    | 1,040                                   | 266,500                  | 4,600                    | 2,550                    |
| Interest on cash used in the business .....   | 580                      | 3,053                                   | 31,260                   |                          | 840                      |
| All sundries not elsewhere reported .....   | 1,100                    | 28,621                                  | 200                      | 11,599                   | 1,900                    |
| GOODS MANUFACTURED—Aggregate value .....  | \$174,279                | \$777,130                               | \$13,278,299             | \$593,390                | \$661,100                |
| Principal product .....   | 126,679                  | 565,615                                 | 13,233,519               | 575,390                  | 409,600                  |
| All other products, including receipts from custom work and repairing .....             | 47,600                   | 211,515                                 | 44,780                   | 18,000                   | 251,500                  |

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.  
b Includes several branches of this industry, which will be specifically stated in final reports.  
c Includes internal revenue taxes.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

| CLASSIFICATION OF INQUIRIES.   | Silk and silk goods. | Photography.        | Printing and publishing. (a) | Saddlery and harness. |
|--|----------------------|---------------------|------------------------------|-----------------------|
|  | (3 establishments.)  | (9 establishments.) | (10 establishments.)         | (5 establishments.)   |
| CAPITAL EMPLOYED—Aggregate .....   | \$440,660            | \$71,715            | \$178,660                    | \$41,492              |
| HIRED PROPERTY—Total .....   | 31,660               | 54,190              | 37,310                       | 22,100                |
| PLANT—Total .....  | 275,000              | 10,400              | 91,500                       | 2,542                 |
| Land .....   | 12,000               |                     | 12,500                       |                       |
| Buildings .....  | 82,000               |                     | 18,000                       | 1,200                 |
| Machinery, tools, and implements .....   | 181,000              | 10,400              | 61,000                       | 1,342                 |
| LIVE ASSETS—Total .....  | 134,000              | 7,125               | 49,850                       | 16,850                |
| Raw materials .....  | 54,000               | 1,975               | 4,450                        | 1,700                 |
| Stock in process and finished product .....  | 70,000               | 1,000               | 3,600                        | 10,685                |
| Cash, bills and accounts receivable, and all sundries not elsewhere reported ..... | 10,000               | 4,150               | 41,800                       | 4,465                 |
| WAGES PAID—Aggregate .....   | \$170,428            | \$14,892            | \$78,575                     | \$11,592              |
| Average number of hands employed during the year .....                             | 905                  | 34                  | 167                          | 26                    |
| Males above 16 years .....   | 80                   | 23                  | 90                           | 26                    |
| Females above 15 years .....   | 675                  | 11                  | 8                            |                       |
| Children .....   | 150                  |                     | 47                           |                       |
| Pieceworkers .....   |                      |                     | 22                           |                       |
| MATERIALS USED—Aggregate cost .....  | \$1,614,710          | \$16,708            | \$30,262                     | \$27,867              |
| Principal materials .....  | 1,601,950            | 15,869              | 27,387                       | 23,757                |
| Fuel .....   | 2,760                | 367                 | 425                          | 280                   |
| Mill supplies .....  |                      |                     |                              |                       |
| All other materials .....  | 10,000               | 472                 | 2,450                        | 3,860                 |
| MISCELLANEOUS EXPENSES—Aggregate .....   | \$19,250             | \$5,816             | \$23,088                     | \$2,245               |
| Amount paid for contract work .....  |                      |                     |                              |                       |
| Rent .....   | 2,400                | 4,089               | 2,835                        | 1,660                 |
| Power and heat .....   |                      |                     | 1,035                        |                       |
| Taxes .....  | 1,450                | 14                  | 400                          | 83                    |
| Insurance .....  | 2,600                | 163                 | 1,108                        | 102                   |
| Repairs, ordinary, of buildings and machinery .....                                | 3,200                | 300                 | 550                          |                       |
| Interest on cash used in the business .....  | 600                  |                     | 1,300                        | 200                   |
| All sundries not elsewhere reported .....  | 9,000                | 1,250               | 15,850                       | 200                   |
| GOODS MANUFACTURED—Aggregate value .....   | \$2,055,200          | \$52,100            | \$165,265                    | \$47,901              |
| Principal product .....  | 2,055,200            | 51,600              | 162,904                      | 42,276                |
| All other products, including receipts from custom work and repairing .....        |                      | 500                 | 2,361                        | 5,625                 |

a Includes several branches of this industry, which will be specifically stated in final reports.

# CENSUS BULLETIN.

No. 303.

WASHINGTON, D. C.

November 8, 1892.

## AGRICULTURE—CEREAL PRODUCTION IN 1889.

NEW YORK, PENNSYLVANIA, NEW JERSEY, MARYLAND, DISTRICT OF COLUMBIA.

### AVERAGE YIELD OF CEREALS PER ACRE.

| STATES.                   | Barley. | Buck-wheat. | Indian corn. | Oats. | Rye.  | Wheat. |
|---------------------------|---------|-------------|--------------|-------|-------|--------|
| New York.....             | 23.53   | 16.70       | 30.63        | 27.44 | 12.94 | 17.95  |
| Pennsylvania.....         | 23.57   | 14.58       | 33.79        | 27.63 | 11.14 | 16.38  |
| New Jersey.....           | 22.19   | 8.48        | 32.27        | 23.39 | 11.32 | 15.00  |
| Maryland.....             | 22.96   | 12.78       | 25.44        | 20.36 | 10.28 | 16.35  |
| District of Columbia..... |         | 10.00       | 30.82        | 21.76 | 9.90  | 20.00  |

### SUMMARY OF CEREAL PRODUCTION.

#### NEW YORK.

| COUNTIES.        | BARLEY. |           | BUCKWHEAT. |           | INDIAN CORN. |            | OATS.     |            | RYE.    |           | WHEAT.  |           |
|------------------|---------|-----------|------------|-----------|--------------|------------|-----------|------------|---------|-----------|---------|-----------|
|                  | Acres.  | Bushels.  | Acres.     | Bushels.  | Acres.       | Bushels.   | Acres.    | Bushels.   | Acres.  | Bushels.  | Acres.  | Bushels.  |
| Total.....       | 349,311 | 8,220,242 | 280,029    | 4,675,735 | 493,320      | 15,109,969 | 1,417,371 | 38,896,479 | 236,874 | 3,065,623 | 462,561 | 8,304,539 |
| Albany.....      | 1,011   | 14,558    | 9,790      | 135,273   | 7,970        | 174,124    | 27,410    | 578,849    | 17,773  | 230,653   | 246     | 4,075     |
| Allegany.....    | 3,789   | 70,686    | 11,423     | 212,248   | 1,822        | 71,223     | 46,417    | 1,190,844  | 530     | 7,103     | 5,270   | 78,180    |
| Broome.....      | 302     | 5,348     | 7,259      | 116,279   | 3,938        | 109,543    | 21,941    | 604,938    | 1,135   | 13,832    | 1,326   | 19,579    |
| Cattaraugus..... | 2,368   | 44,052    | 5,783      | 112,826   | 3,564        | 102,359    | 41,880    | 1,076,525  | 152     | 2,181     | 1,731   | 22,418    |
| Cayuga.....      | 35,249  | 934,543   | 3,647      | 69,418    | 21,352       | 704,668    | 28,003    | 848,773    | 593     | 9,814     | 31,147  | 564,246   |
| Chautauqua.....  | 4,751   | 96,796    | 7,114      | 148,304   | 8,700        | 285,318    | 33,853    | 988,548    | 511     | 10,078    | 2,840   | 44,105    |
| Chemung.....     | 1,903   | 37,871    | 11,604     | 198,157   | 4,524        | 133,434    | 18,060    | 511,890    | 3,325   | 47,271    | 3,274   | 53,713    |
| Chenango.....    | 1,138   | 25,115    | 2,640      | 50,877    | 6,494        | 198,690    | 19,032    | 605,775    | 71      | 1,002     | 741     | 12,896    |
| Columbia.....    | 1,363   | 24,621    | 8,564      | 102,507   | 4,399        | 143,531    | 27,356    | 647,447    | 2,076   | 25,338    | 2,047   | 30,538    |
| Columbia.....    | 81      | 2,015     | 4,604      | 55,710    | 17,042       | 337,372    | 25,593    | 595,777    | 35,012  | 438,818   | 24      | 380       |
| Cortland.....    | 2,582   | 59,173    | 3,537      | 78,800    | 2,550        | 83,169     | 15,502    | 490,777    | 50      | 846       | 651     | 11,320    |
| Delaware.....    | 542     | 13,020    | 9,741      | 185,740   | 2,719        | 90,540     | 27,107    | 743,016    | 433     | 5,565     | 139     | 1,976     |
| Dutchess.....    | 81      | 2,118     | 2,642      | 31,336    | 21,858       | 523,303    | 23,219    | 509,290    | 16,202  | 193,457   | 1,617   | 22,150    |
| Errie.....       | 6,370   | 133,437   | 7,091      | 132,311   | 13,272       | 501,494    | 71,730    | 2,202,840  | 3,212   | 40,954    | 21,129  | 345,474   |
| Essex.....       | 680     | 12,695    | 3,043      | 43,283    | 2,890        | 85,191     | 14,272    | 340,373    | 1,058   | 10,538    | 479     | 7,436     |
| Franklin.....    | 2,668   | 60,516    | 1,727      | 22,935    | 3,207        | 76,369     | 22,732    | 555,954    | 1,591   | 17,009    | 2,600   | 39,262    |
| Fulton.....      | 264     | 5,293     | 2,945      | 40,316    | 8,556        | 87,537     | 10,921    | 232,727    | 851     | 9,402     | 30      | 486       |
| Genesee.....     | 16,230  | 447,851   | 1,142      | 18,219    | 10,931       | 410,199    | 20,977    | 776,562    | 448     | 6,742     | 32,413  | 636,753   |
| Greene.....      | 109     | 2,121     | 5,726      | 77,166    | 6,868        | 128,867    | 13,297    | 287,415    | 8,268   | 100,127   | 151     | 2,216     |
| Hamilton.....    | 5       | 68        | 325        | 4,912     | 146          | 3,996      | 903       | 20,944     | 1       | 5         |         |           |
| Herkimer.....    | 1,813   | 45,157    | 1,651      | 35,106    | 3,591        | 136,496    | 19,426    | 599,891    | 151     | 3,207     | 133     | 3,154     |
| Jefferson.....   | 12,152  | 226,316   | 1,717      | 28,270    | 5,614        | 190,256    | 70,438    | 1,886,712  | 3,223   | 44,569    | 6,190   | 65,736    |
| Kings.....       |         |           | 20         | 362       | 370          | 29,389     | 68        | 1,705      | 53      | 877       | 54      | 925       |
| Lewis.....       | 2,345   | 53,865    | 857        | 14,451    | 1,293        | 38,503     | 23,721    | 615,347    | 372     | 4,405     | 591     | 8,764     |
| Livingston.....  | 17,385  | 390,195   | 3,847      | 72,375    | 9,801        | 330,343    | 26,679    | 852,265    | 3,155   | 47,226    | 36,182  | 692,947   |
| Madison.....     | 7,836   | 177,933   | 3,098      | 55,408    | 8,507        | 274,893    | 25,147    | 731,097    | 378     | 4,375     | 4,554   | 69,803    |
| Monroe.....      | 18,421  | 524,391   | 819        | 12,903    | 18,838       | 593,574    | 33,730    | 1,360,092  | 2,963   | 44,502    | 50,655  | 1,077,229 |
| Montgomery.....  | 2,328   | 39,770    | 4,789      | 73,205    | 8,728        | 252,401    | 27,144    | 637,420    | 1,342   | 21,143    | 951     | 19,314    |
| New York.....    |         |           |            |           |              |            |           |            |         |           |         |           |
| Niagara.....     | 17,436  | 393,208   | 1,360      | 20,971    | 13,547       | 395,970    | 30,385    | 905,385    | 1,224   | 19,302    | 39,571  | 714,879   |

SUMMARY OF CEREAL PRODUCTION—Continued.

NEW YORK—Continued.

| COUNTIES.         | BARLEY. |          | BUCKWHEAT. |          | INDIAN CORN. |          | OATS.  |           | RYE.   |          | WHEAT. |          |
|-------------------|---------|----------|------------|----------|--------------|----------|--------|-----------|--------|----------|--------|----------|
|                   | Acres.  | Bushels. | Acres.     | Bushels. | Acres.       | Bushels. | Acres. | Bushels.  | Acres. | Bushels. | Acres. | Bushels. |
| Oneida.....       | 3,390   | 76,795   | 3,234      | 45,026   | 12,474       | 440,205  | 33,650 | 1,016,496 | 1,442  | 17,656   | 2,728  | 47,088   |
| Ontonago.....     | 23,576  | 630,254  | 5,016      | 92,498   | 21,076       | 723,475  | 37,787 | 1,185,532 | 2,105  | 31,352   | 23,023 | 414,447  |
| Ontario.....      | 26,688  | 676,476  | 2,691      | 42,510   | 20,183       | 706,947  | 30,576 | 956,329   | 2,779  | 40,341   | 36,705 | 691,562  |
| Orange.....       | 11      | 203      | 1,028      | 12,956   | 10,209       | 365,095  | 10,876 | 234,561   | 5,194  | 74,368   | 2,424  | 33,920   |
| Orleans.....      | 15,258  | 375,690  | 908        | 13,271   | 6,858        | 189,895  | 16,716 | 586,715   | 245    | 4,241    | 26,011 | 478,045  |
| Oswego.....       | 1,600   | 31,027   | 5,367      | 73,212   | 12,781       | 351,003  | 26,955 | 739,009   | 1,987  | 22,378   | 2,300  | 31,135   |
| Otsego.....       | 2,705   | 53,810   | 8,114      | 168,060  | 3,339        | 292,469  | 33,453 | 910,418   | 638    | 9,301    | 420    | 7,181    |
| Putnam.....       | 50      | 1,601    | 396        | 4,332    | 2,955        | 93,246   | 1,781  | 39,786    | 783    | 8,666    | 56     | 584      |
| Queens.....       | 2       | 30       | 202        | 1,949    | 9,538        | 332,347  | 2,269  | 51,264    | 3,332  | 45,915   | 2,404  | 43,075   |
| Rensselaer.....   | 203     | 4,183    | 2,750      | 35,449   | 9,735        | 208,823  | 24,460 | 645,181   | 19,715 | 265,893  | 65     | 1,121    |
| Richmond.....     |         |          | 7          | 70       | 562          | 19,241   | 207    | 5,425     | 132    | 2,002    | 9      | 57       |
| Rockland.....     |         |          | 416        | 5,317    | 2,350        | 78,952   | 1,392  | 28,039    | 1,443  | 17,531   | 67     | 859      |
| St. Lawrence..... | 5,535   | 102,233  | 1,760      | 22,409   | 6,904        | 202,260  | 81,384 | 1,819,626 | 1,961  | 25,794   | 9,731  | 122,763  |
| Saratoga.....     | 128     | 1,942    | 6,537      | 84,736   | 15,950       | 359,614  | 20,964 | 504,873   | 12,320 | 137,567  | 529    | 8,956    |
| Schenectady.....  | 633     | 9,419    | 2,655      | 30,568   | 3,480        | 78,013   | 10,549 | 234,180   | 6,161  | 66,160   | 45     | 814      |
| Schoharie.....    | 2,082   | 39,441   | 14,004     | 254,161  | 4,858        | 153,093  | 28,726 | 649,879   | 7,451  | 110,369  | 1,127  | 21,715   |
| Schoharie.....    | 11,052  | 219,417  | 10,172     | 190,793  | 5,684        | 179,881  | 13,843 | 330,139   | 5,596  | 83,858   | 4,183  | 66,216   |
| Seneca.....       | 17,867  | 408,570  | 1,510      | 27,763   | 9,301        | 388,695  | 13,486 | 390,507   | 751    | 10,354   | 18,892 | 335,313  |
| Steuben.....      | 14,880  | 309,275  | 33,230     | 598,262  | 9,367        | 295,407  | 72,706 | 1,903,939 | 9,662  | 134,235  | 10,779 | 158,670  |
| Suffolk.....      | 87      | 2,166    | 271        | 2,414    | 13,391       | 483,584  | 6,335  | 190,471   | 3,357  | 39,637   | 5,458  | 33,551   |
| Sullivan.....     | 5       | 83       | 6,522      | 90,071   | 3,844        | 107,200  | 9,630  | 226,986   | 3,215  | 35,485   | 58     | 563      |
| Tioga.....        | 1,084   | 19,759   | 10,431     | 165,648  | 4,857        | 138,179  | 23,206 | 634,947   | 2,023  | 23,686   | 3,158  | 46,367   |
| Tompkins.....     | 8,570   | 199,560  | 13,381     | 262,637  | 9,134        | 313,049  | 23,796 | 660,495   | 3,025  | 40,802   | 8,534  | 141,706  |
| Ulster.....       | 13      | 191      | 6,239      | 71,801   | 12,960       | 300,152  | 14,918 | 324,243   | 11,844 | 140,312  | 1,467  | 17,643   |
| Warren.....       | 6       | 107      | 3,310      | 49,262   | 3,131        | 72,681   | 4,444  | 100,742   | 1,166  | 10,268   | 16     | 243      |
| Washington.....   | 177     | 3,452    | 2,194      | 30,112   | 12,467       | 350,832  | 29,735 | 718,823   | 10,314 | 133,634  | 244    | 3,756    |
| Wayne.....        | 21,379  | 502,760  | 2,767      | 39,312   | 23,447       | 690,637  | 27,053 | 860,956   | 1,518  | 22,211   | 30,181 | 520,527  |
| Westchester.....  | 87      | 2,429    | 291        | 3,543    | 7,106        | 242,690  | 5,653  | 142,939   | 2,825  | 38,925   | 395    | 5,332    |
| Wyoming.....      | 14,164  | 321,442  | 3,025      | 58,944   | 2,791        | 108,961  | 29,083 | 842,995   | 203    | 3,931    | 10,380 | 191,421  |
| Yates.....        | 16,877  | 379,595  | 3,046      | 53,481   | 9,317        | 323,838  | 14,775 | 411,303   | 6,976  | 108,425  | 14,337 | 269,811  |

PENNSYLVANIA.

|                 |        |         |         |           |           |            |           |            |         |           |           |            |
|-----------------|--------|---------|---------|-----------|-----------|------------|-----------|------------|---------|-----------|-----------|------------|
| Total.....      | 20,950 | 493,893 | 210,488 | 3,069,717 | 1,252,369 | 42,318,279 | 1,310,197 | 36,197,409 | 336,041 | 3,742,164 | 1,318,472 | 21,595,490 |
| Adams.....      | 11     | 161     | 119     | 1,532     | 35,811    | 1,215,682  | 25,159    | 633,705    | 3,782   | 40,979    | 41,450    | 620,460    |
| Allegheny.....  | 24     | 470     | 193     | 2,089     | 23,515    | 757,837    | 31,881    | 964,983    | 4,954   | 63,659    | 19,311    | 316,062    |
| Armstrong.....  | 21     | 310     | 5,065   | 52,128    | 21,031    | 628,955    | 29,716    | 735,516    | 10,510  | 112,420   | 21,301    | 256,628    |
| Beaver.....     | 31     | 792     | 314     | 3,227     | 15,097    | 556,841    | 17,713    | 531,568    | 1,697   | 20,648    | 13,500    | 230,706    |
| Bedford.....    | 251    | 5,075   | 4,783   | 46,467    | 24,245    | 770,594    | 16,938    | 417,181    | 10,476  | 94,506    | 27,598    | 378,088    |
| Berks.....      | 5      | 110     | 89      | 752       | 53,182    | 1,822,767  | 48,806    | 1,193,747  | 31,688  | 387,911   | 56,417    | 942,532    |
| Blair.....      | 1,074  | 27,227  | 1,025   | 10,916    | 13,063    | 481,113    | 9,841     | 282,257    | 3,081   | 34,488    | 18,057    | 293,837    |
| Bradford.....   | 1,575  | 30,044  | 30,099  | 506,412   | 12,884    | 341,277    | 47,830    | 1,325,852  | 5,579   | 68,993    | 6,652     | 96,219     |
| Bucks.....      | 23     | 234     | 116     | 1,074     | 46,495    | 1,533,865  | 34,648    | 924,044    | 16,726  | 194,271   | 30,205    | 548,085    |
| Butler.....     | 55     | 1,129   | 7,352   | 84,382    | 21,869    | 622,241    | 36,620    | 1,024,533  | 11,405  | 135,274   | 16,544    | 213,503    |
| Cambria.....    | 114    | 1,719   | 3,635   | 51,309    | 6,980     | 212,467    | 13,240    | 329,189    | 2,886   | 35,386    | 5,961     | 74,810     |
| Cameron.....    | 1      | 27      | 286     | 4,367     | 163       | 4,856      | 607       | 15,998     | 34      | 374       | 136       | 1,435      |
| Carbon.....     | 6      | 128     | 677     | 8,727     | 4,057     | 92,765     | 4,191     | 96,283     | 5,513   | 56,373    | 1,529     | 20,663     |
| Center.....     | 1,980  | 46,697  | 1,215   | 15,476    | 22,914    | 846,826    | 16,294    | 515,471    | 3,233   | 34,153    | 31,008    | 495,074    |
| Chester.....    | 5      | 190     | 56      | 837       | 45,206    | 1,958,962  | 34,070    | 868,304    | 1,358   | 19,415    | 42,639    | 882,383    |
| Clarion.....    | 62     | 1,560   | 3,941   | 42,638    | 13,297    | 450,458    | 23,480    | 671,321    | 4,711   | 49,686    | 12,876    | 144,403    |
| Clearfield..... | 56     | 955     | 6,044   | 81,594    | 11,008    | 363,050    | 15,066    | 382,058    | 5,490   | 64,145    | 6,142     | 74,787     |
| Clinton.....    | 404    | 9,555   | 1,110   | 15,049    | 8,676     | 288,630    | 7,980     | 242,834    | 1,361   | 15,881    | 9,511     | 161,598    |
| Columbia.....   | 35     | 290     | 6,948   | 91,428    | 20,249    | 529,024    | 18,943    | 513,368    | 11,111  | 117,481   | 17,455    | 289,282    |
| Crawford.....   | 183    | 3,693   | 9,425   | 154,200   | 20,246    | 598,024    | 39,510    | 1,473,274  | 367     | 4,420     | 14,227    | 208,122    |
| Cumberland..... | 4      | 65      | 44      | 393       | 39,170    | 1,389,313  | 35,073    | 986,057    | 2,230   | 23,536    | 53,860    | 986,253    |
| Dauphin.....    |        |         | 238     | 2,853     | 28,045    | 926,898    | 26,028    | 682,151    | 4,957   | 51,137    | 28,692    | 459,256    |
| Delaware.....   | 7      | 230     | 1       | 11        | 3,035     | 401,790    | 3,880     | 95,740     | 384     | 6,729     | 7,010     | 166,186    |
| Elk.....        | 12     | 106     | 546     | 9,600     | 559       | 18,147     | 2,491     | 66,661     | 272     | 5,062     | 167       | 2,072      |
| Erie.....       | 10,622 | 275,944 | 7,188   | 144,998   | 17,598    | 541,921    | 27,434    | 881,539    | 4,398   | 81,217    | 9,293     | 152,549    |
| Fayette.....    | 83     | 1,237   | 1,665   | 19,925    | 23,732    | 799,487    | 16,422    | 405,388    | 397     | 3,728     | 26,336    | 403,447    |
| Forest.....     | 4      | 39      | 829     | 10,540    | 607       | 21,063     | 2,476     | 65,248     | 95      | 988       | 415       | 4,327      |
| Franklin.....   | 17     | 465     | 256     | 2,188     | 45,564    | 1,661,431  | 23,121    | 579,727    | 5,212   | 56,299    | 68,848    | 1,207,781  |
| Fulton.....     | 11     | 195     | 2,377   | 19,901    | 10,616    | 295,782    | 5,004     | 93,550     | 3,717   | 26,285    | 10,654    | 116,497    |
| Greene.....     | 36     | 715     | 90      | 797       | 29,622    | 989,803    | 18,930    | 497,987    | 462     | 4,538     | 23,357    | 300,921    |
| Huntingdon..... | 170    | 3,884   | 2,298   | 18,721    | 20,931    | 721,196    | 13,939    | 339,419    | 4,404   | 37,523    | 26,608    | 350,511    |
| Indiana.....    | 2      | 22      | 8,455   | 105,858   | 23,963    | 672,545    | 30,173    | 740,788    | 9,130   | 99,222    | 22,588    | 286,678    |
| Jefferson.....  | 10     | 123     | 4,599   | 59,358    | 8,441     | 196,917    | 16,221    | 411,098    | 3,855   | 40,928    | 6,421     | 70,253     |
| Juniata.....    |        |         | 527     | 4,797     | 14,443    | 445,954    | 12,719    | 330,077    | 1,437   | 11,935    | 16,916    | 239,452    |
| Lackawanna..... | 11     | 157     | 2,452   | 38,820    | 1,573     | 45,221     | 6,114     | 148,538    | 1,191   | 15,756    | 52        | 611        |
| Lebanon.....    | 6      | 240     | 89      | 978       | 81,949    | 3,260,080  | 45,271    | 1,258,507  | 5,159   | 73,675    | 111,662   | 2,252,590  |
| Lawrence.....   | 42     | 603     | 1,055   | 12,567    | 15,269    | 501,566    | 17,861    | 603,841    | 1,084   | 12,134    | 14,837    | 219,444    |
| Lebanon.....    | 3      | 59      | 5       | 95        | 23,771    | 870,778    | 21,846    | 567,290    | 4,974   | 60,033    | 32,828    | 550,619    |
| Lehigh.....     | 4      | 90      | 151     | 1,194     | 23,343    | 816,263    | 20,334    | 508,338    | 20,846  | 247,797   | 25,747    | 436,322    |
| Luzerne.....    | 18     | 305     | 6,782   | 81,034    | 11,347    | 247,746    | 18,579    | 318,752    | 11,621  | 120,099   | 3,142     | 44,455     |

## SUMMARY OF CEREAL PRODUCTION—Continued.

## PENNSYLVANIA—Continued.

| COUNTIES.            | BARLEY. |          | BUCKWHEAT. |          | INDIAN CORN. |           | OATS.  |           | RYE.   |          | WHEAT. |           |
|----------------------|---------|----------|------------|----------|--------------|-----------|--------|-----------|--------|----------|--------|-----------|
|                      | Acres.  | Bushels. | Acres.     | Bushels. | Acres.       | Bushels.  | Acres. | Bushels.  | Acres. | Bushels. | Acres. | Bushels.  |
| Lycoming .....       | 71      | 1,505    | 6,631      | 111,021  | 22,999       | 715,005   | 23,518 | 661,982   | 6,280  | 67,361   | 22,133 | 341,550   |
| McKean .....         | 32      | 439      | 857        | 12,757   | 383          | 8,648     | 5,878  | 134,867   | 58     | 790      | 237    | 2,998     |
| Mercer .....         | 17      | 315      | 5,178      | 61,879   | 22,101       | 697,651   | 32,834 | 1,202,332 | 884    | 9,559    | 21,233 | 324,695   |
| Mifflin .....        | 12      | 257      | 94         | 698      | 12,985       | 496,517   | 10,143 | 301,524   | 267    | 2,623    | 21,691 | 358,351   |
| Monroe .....         | 7       | 73       | 3,749      | 39,690   | 8,638        | 163,895   | 8,166  | 175,539   | 10,678 | 92,287   | 3,246  | 40,826    |
| Montgomery .....     | 14      | 335      | 11         | 75       | 33,703       | 1,270,340 | 23,957 | 602,293   | 14,782 | 184,431  | 22,286 | 435,379   |
| Montour .....        |         |          | 820        | 11,484   | 8,629        | 265,960   | 8,298  | 248,527   | 1,854  | 21,921   | 9,196  | 165,313   |
| Northampton .....    | 27      | 529      | 356        | 3,762    | 24,526       | 739,987   | 20,808 | 575,758   | 18,281 | 222,337  | 31,434 | 509,294   |
| Northumberland ..... |         |          | 1,947      | 29,500   | 22,226       | 710,357   | 20,470 | 567,897   | 7,660  | 80,044   | 21,984 | 397,095   |
| Perry .....          | 16      | 115      | 609        | 5,495    | 20,377       | 656,705   | 18,645 | 474,868   | 2,818  | 24,797   | 23,343 | 335,050   |
| Philadelphia .....   |         |          | 1          | 2        | 2,699        | 115,652   | 610    | 14,862    | 785    | 14,350   | 2,388  | 59,752    |
| Pike .....           | 2       | 12       | 1,655      | 18,643   | 1,944        | 49,670    | 2,091  | 45,544    | 2,042  | 20,011   | 208    | 3,669     |
| Porter .....         | 226     | 4,447    | 4,304      | 84,246   | 714          | 19,996    | 13,000 | 331,410   | 188    | 2,215    | 314    | 3,819     |
| Schuylkill .....     | 4       | 30       | 1,111      | 13,915   | 13,971       | 336,480   | 15,406 | 370,326   | 14,288 | 79,045   | 9,363  | 137,250   |
| Snyder .....         | 3       | 26       | 325        | 2,897    | 15,095       | 484,578   | 14,384 | 373,933   | 3,870  | 36,080   | 20,104 | 278,933   |
| Somerset .....       | 610     | 12,032   | 6,850      | 101,237  | 9,185        | 306,779   | 28,366 | 750,985   | 5,451  | 53,654   | 17,497 | 241,785   |
| Sullivan .....       | 6       | 161      | 2,141      | 37,864   | 1,752        | 62,528    | 4,211  | 117,444   | 403    | 6,167    | 659    | 9,154     |
| Susquehanna .....    | 53      | 813      | 8,341      | 139,435  | 6,439        | 198,742   | 19,832 | 519,703   | 1,909  | 21,563   | 683    | 9,464     |
| Tioga .....          | 1,787   | 32,113   | 17,369     | 300,206  | 4,540        | 137,904   | 31,605 | 870,747   | 454    | 5,953    | 2,371  | 34,766    |
| Union .....          | 11      | 280      | 95         | 952      | 12,219       | 398,784   | 11,853 | 391,698   | 672    | 8,347    | 18,628 | 326,658   |
| Venango .....        | 23      | 656      | 7,386      | 99,269   | 9,234        | 279,839   | 19,391 | 552,841   | 621    | 6,292    | 5,463  | 64,674    |
| Warren .....         | 225     | 5,241    | 2,498      | 42,956   | 2,014        | 97,087    | 11,794 | 372,119   | 272    | 3,643    | 1,482  | 18,957    |
| Washington .....     | 822     | 17,750   | 36         | 694      | 36,106       | 1,476,835 | 30,608 | 999,858   | 775    | 8,910    | 34,256 | 561,280   |
| Wayne .....          | 12      | 188      | 5,535      | 86,624   | 2,573        | 82,411    | 8,280  | 223,196   | 1,110  | 13,846   | 29     | 380       |
| Westmoreland .....   | 36      | 827      | 1,152      | 12,805   | 36,821       | 1,047,978 | 40,169 | 1,139,930 | 1,215  | 13,002   | 52,114 | 903,241   |
| Wyoming .....        | 9       | 99       | 8,540      | 131,082  | 4,715        | 116,717   | 9,409  | 221,423   | 4,354  | 47,290   | 1,392  | 18,391    |
| York .....           | 42      | 755      | 865        | 11,297   | 66,315       | 2,411,699 | 45,466 | 1,222,011 | 12,219 | 166,560  | 86,716 | 1,543,403 |

## NEW JERSEY.

|                  |    |       |        |         |         |           |         |           |        |         |         |           |
|------------------|----|-------|--------|---------|---------|-----------|---------|-----------|--------|---------|---------|-----------|
| Total .....      | 47 | 1,043 | 13,520 | 114,626 | 267,648 | 8,637,011 | 121,327 | 2,837,293 | 77,245 | 874,049 | 121,570 | 1,823,382 |
| Atlantic .....   |    |       | 19     | 172     | 2,751   | 63,970    | 115     | 1,652     | 235    | 2,070   | 89      | 1,152     |
| Bergen .....     | 2  | 20    | 261    | 3,525   | 3,573   | 108,453   | 1,028   | 19,681    | 2,624  | 33,725  | 149     | 2,385     |
| Burlington ..... |    |       | 116    | 1,373   | 27,748  | 951,750   | 4,426   | 122,704   | 16,529 | 156,407 | 10,662  | 193,069   |
| Camden .....     |    |       | 9      | 76      | 6,534   | 243,150   | 345     | 7,988     | 2,825  | 28,811  | 2,984   | 56,183    |
| Cape May .....   |    |       | 15     | 99      | 4,587   | 114,550   | 636     | 9,969     | 42     | 270     | 217     | 2,068     |
| Cumberland ..... |    |       | 20     | 105     | 15,077  | 491,590   | 2,219   | 51,318    | 362    | 2,786   | 7,116   | 117,037   |
| Essex .....      | 20 | 544   | 39     | 332     | 657     | 23,230    | 404     | 10,400    | 296    | 4,580   | 103     | 1,742     |
| Gloucester ..... |    |       | 108    | 995     | 16,657  | 590,602   | 1,261   | 24,610    | 3,773  | 29,358  | 6,958   | 85,027    |
| Hudson .....     |    |       |        |         | 1       | 20        |         |           |        |         |         |           |
| Hunterdon .....  | 11 | 283   | 2,911  | 16,692  | 34,789  | 936,585   | 26,034  | 531,341   | 7,019  | 61,398  | 18,527  | 234,627   |
| Mercer .....     |    |       | 61     | 215     | 18,158  | 604,510   | 11,665  | 296,217   | 4,579  | 52,976  | 11,188  | 181,793   |
| Middlesex .....  | 1  | 16    | 88     | 835     | 13,584  | 432,784   | 7,793   | 194,692   | 4,763  | 61,303  | 6,315   | 103,085   |
| Monmouth .....   |    |       | 48     | 306     | 24,085  | 875,847   | 3,642   | 96,875    | 13,589 | 158,443 | 8,122   | 153,471   |
| Morris .....     | 8  | 120   | 1,959  | 16,703  | 13,751  | 457,832   | 11,290  | 217,133   | 3,434  | 33,944  | 3,738   | 41,956    |
| Ocean .....      |    |       | 59     | 367     | 3,545   | 101,145   | 360     | 7,257     | 2,502  | 18,850  | 203     | 2,590     |
| Passaic .....    |    |       | 695    | 9,143   | 1,690   | 50,226    | 1,014   | 20,302    | 1,023  | 15,427  | 151     | 2,848     |
| Salem .....      |    |       | 30     | 346     | 23,253  | 828,036   | 5,170   | 112,425   | 289    | 2,329   | 16,834  | 232,657   |
| Somerset .....   |    |       | 369    | 2,358   | 20,553  | 590,210   | 18,826  | 467,248   | 5,068  | 51,064  | 11,339  | 145,770   |
| Sussex .....     | 5  | 60    | 3,623  | 35,977  | 11,890  | 398,737   | 9,986   | 232,075   | 6,796  | 70,471  | 1,859   | 18,605    |
| Union .....      |    |       | 13     | 188     | 1,792   | 61,877    | 922     | 20,847    | 446    | 6,737   | 95      | 1,210     |
| Warren .....     |    |       | 3,071  | 24,814  | 22,973  | 716,907   | 14,191  | 321,920   | 1,051  | 83,100  | 14,916  | 225,586   |

## SUMMARY OF CEREAL PRODUCTION—Continued.

## MARYLAND.

| COUNTIES.          | BARLEY. |          | BUCKWHEAT. |          | INDIAN CORN. |            | OATS.  |           | RYE.   |          | WHEAT.  |           |
|--------------------|---------|----------|------------|----------|--------------|------------|--------|-----------|--------|----------|---------|-----------|
|                    | Acres.  | Bushels. | Acres.     | Bushels. | Acres.       | Bushels.   | Acres. | Bushels.  | Acres. | Bushels. | Acres.  | Bushels.  |
| Total .....        | 818     | 18,778   | 7,569      | 96,747   | 586,817      | 14,928,142 | 99,195 | 2,019,658 | 34,302 | 352,596  | 510,727 | 8,348,177 |
| Allegany .....     | 2       | 9        | 512        | 3,811    | 6,513        | 132,750    | 3,900  | 71,769    | 1,573  | 14,813   | 5,086   | 60,111    |
| Anne Arundel.....  | 2       | 20       | 1          | 25       | 24,561       | 510,088    | 2,097  | 30,106    | 239    | 1,736    | 6,287   | 68,204    |
| Baltimore .....    | 84      | 768      | 365        | 3,100    | 33,825       | 1,262,435  | 13,401 | 292,540   | 6,863  | 75,936   | 26,369  | 458,828   |
| Calvert .....      |         |          | 103        | 1,655    | 7,830        | 142,835    | 1,251  | 11,452    | 77     | 428      | 3,527   | 24,744    |
| Caroline .....     |         |          | 96         | 703      | 21,364       | 373,055    | 740    | 8,698     | 295    | 2,001    | 19,617  | 289,437   |
| Carroll .....      | 375     | 9,987    | 245        | 2,086    | 33,624       | 1,260,825  | 10,695 | 273,481   | 6,752  | 82,613   | 44,704  | 795,146   |
| Cecil .....        |         |          | 21         | 265      | 23,905       | 831,298    | 8,687  | 232,484   | 60     | 966      | 28,312  | 542,383   |
| Charles .....      |         |          |            |          | 19,900       | 280,974    | 1,864  | 19,280    | 415    | 2,639    | 8,579   | 82,597    |
| Dorchester .....   | 2       | 60       | 12         | 200      | 27,551       | 367,931    | 877    | 9,660     | 135    | 908      | 16,952  | 210,132   |
| Frederick .....    | 251     | 5,439    | 81         | 514      | 51,782       | 1,990,489  | 7,502  | 184,873   | 6,474  | 59,193   | 76,429  | 1,227,424 |
| Garrett .....      | 6       | 140      | 5,466      | 77,781   | 3,200        | 93,294     | 10,999 | 230,414   | 930    | 8,139    | 2,562   | 30,427    |
| Harford .....      |         |          | 292        | 3,252    | 23,890       | 907,690    | 11,105 | 270,434   | 208    | 2,032    | 20,071  | 363,298   |
| Howard .....       | 21      | 320      | 89         | 1,018    | 18,377       | 628,550    | 3,604  | 66,250    | 1,979  | 22,222   | 17,623  | 301,046   |
| Kent .....         |         |          | 11         | 160      | 27,731       | 788,958    | 1,205  | 18,257    | 45     | 347      | 33,754  | 582,424   |
| Montgomery .....   | 1       | 10       | 118        | 1,040    | 32,840       | 1,194,542  | 2,641  | 50,681    | 4,781  | 45,051   | 30,270  | 480,240   |
| Prince George..... |         |          | 12         | 179      | 23,836       | 590,660    | 2,919  | 40,527    | 1,575  | 12,222   | 8,250   | 74,229    |
| Queen Anne .....   |         |          | 10         | 51       | 34,639       | 729,725    | 715    | 9,138     | 153    | 1,308    | 49,313  | 835,478   |
| St. Mary .....     | 10      | 100      | 7          | 25       | 20,630       | 318,458    | 1,535  | 14,118    | 171    | 1,088    | 12,444  | 133,696   |
| Somerset .....     | 7       | 100      | 1          | 10       | 19,108       | 255,340    | 3,149  | 39,191    | 38     | 346      | 6,050   | 89,411    |
| Talbot .....       | 25      | 200      |            |          | 20,133       | 547,819    | 244    | 4,556     | 15     | 112      | 33,239  | 663,671   |
| Washington .....   | 78      | 1,560    | 82         | 582      | 32,832       | 986,767    | 2,651  | 66,572    | 1,429  | 17,926   | 55,648  | 973,513   |
| Wicomico .....     | 1       | 5        | 45         | 200      | 36,452       | 284,735    | 1,074  | 11,601    | 68     | 371      | 2,008   | 20,565    |
| Worcester .....    | 3       | 60       |            |          | 42,204       | 448,924    | 6,340  | 63,576    | 27     | 199      | 3,661   | 36,173    |

## DISTRICT OF COLUMBIA.

|                   |   |    |     |        |    |       |     |       |    |     |
|-------------------|---|----|-----|--------|----|-------|-----|-------|----|-----|
| The District..... | 2 | 20 | 349 | 10,755 | 63 | 1,371 | 111 | 1,099 | 30 | 600 |
|-------------------|---|----|-----|--------|----|-------|-----|-------|----|-----|

In the state of New York the total area devoted to the cultivation of cereals in 1889 was 3,239,466 acres, as compared with 3,669,834 acres in 1879, a decrease of 430,368 acres, or 11.73 per cent. There was a decrease of 285,952 acres in the area in corn, of 274,050 acres in that in wheat, of 11,199 acres in buckwheat, of 8,049 acres in rye, and of 7,318 acres in barley, partially offset by an increase of 156,200 acres in the area in oats.

In Pennsylvania the total area in cereals in 1889 was 4,448,517 acres, as compared with 4,724,503 acres in 1879, a decrease of 275,986 acres, or 5.84 per cent. In this state likewise oats are the only cereal showing any increase whatever in the area under cultivation, the acreage having increased from 1,237,593 in 1879 to 1,310,197 in 1889. The areas in wheat, corn, rye, buckwheat, and barley show a decrease of 126,912, 120,901, 62,424, 35,711, and 2,642 acres, respectively.

In New Jersey the total area in cereals in 1889 was 601,357 acres, as compared with 773,375 acres in 1879, a decrease of 172,018 acres, or 22.24 per cent. In this state all the cereals show a reduced acreage, the decrease in the area in corn being 76,907 acres, in rye 28,780 acres, in wheat 28,190 acres, in buckwheat 21,853 acres, in oats 16,095 acres, and in barley 193 acres.

In Maryland the total area in cereals in 1889 was 1,239,428 acres, as compared with 1,378,276 acres in 1879, a decrease of 138,848 acres, or 10.07 per cent. There was a decrease of 78,111 acres in the area in corn, of 58,569 acres in that in wheat, of 2,725 acres in buckwheat, and of 1,932 acres in oats. On the other hand, there was an increase in the areas in rye and barley of 1,897 acres and 592 acres, respectively.

In the District of Columbia the total area in cereals in 1889 was 555 acres, as compared with 1,384 acres in 1879, a decrease of 1,329 acres, or 70.54 per cent. In addition to the causes that have operated to reduce the area devoted to the cultivation of cereals in the surrounding states, the gradual encroachment of the city of Washington upon the rural portion of the District of Columbia and the excellent market for fruits and vegetables afforded by its increasing population have also contributed materially to that abandonment of cereal production which now appears to be within measurable distance.

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Superintendent of Census.