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CENSUS BULLETIN.

No. 236. WASHINGTON, D. C. October 13, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF AUGUSTA, GEORGIA.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,
WASHINGTON, D. C., October 10, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Augusta 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: 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	137
Capital invested	$38,475
Number of hands employed	305
Wages paid	$82,189
Cost of materials used	$364,687
Miscellaneous expenses	$19,304
Value of product at works	$702,471

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	366.67
Capital invested	240.10
Number of hands employed	230.71
Wages paid	302.08
Cost of materials used	105.10
Value of product at works	152.61
Population of city	52.12
Assessed valuation of city	52.64

Decrease of municipal debt less sinking fund, 11.00 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 $267 in 1880 to $325 in 1890, or 21.72 per cent.

Part of this increase is undoubtedly due 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.

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.

STATISTICS OF MANUFACTURES: 1890.

CITY OF AUGUSTA, GEORGIA.

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 denistry) 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	27	60	$2,069,275	1,680	$448,825	$2,247,065
	1890	48	417	7,075,996	5,861	1,880,807	4,974,610

INDUSTRIES.		Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
				Population.	Assessed valuation.	Municipal debt. (c)
All industries	1880	----------	$3,139,029	21,891	$13,730,681	$1,059,510
	1890	$483,138	8,031,888	33,300	20,058,882	1,744,010

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 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.

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.	Brick and tile. (3 establishments.)	Carriages and wagons. (9 establishments.)	Clothing—men's, wholesale. (3 establishments.)	Confectionery. (3 establishments.)	Cotton goods. (9 establishments.)
CAPITAL EMPLOYED—Aggregate	$62,500	$129,560	$15,225	$35,200	$5,337,362
HIRED PROPERTY—Total	3,500	37,560	1,600	10,500	
PLANT—Total	54,800	31,400	8,350	4,300	4,031,000
Land	16,500	7,000	4,500		339,500
Buildings	20,300	10,500	3,500		1,486,204
Machinery, tools, and implements	18,000	13,900	350	4,300	2,205,296
LIVE ASSETS—Total	4,200	60,600	5,275	11,400	1,306,362
Raw materials		14,350	1,025	2,100	520,758
Stock in process and finished product	1,500	25,300	2,700	5,100	541,085
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	2,700	20,950	1,550	4,200	235,519
WAGES PAID—Aggregate	$20,515	$43,880	$9,162	$9,523	$709,525
Average number of hands employed during the year	167	109	25	25	2,982
Males above 16 years	167	105	5	23	1,034
Females above 16 years			1	2	1,093
Children					482
Pieceworkers		4	19		373
MATERIALS USED—Aggregate cost	$15,102	$79,111	$15,585	$28,000	$2,673,607
Principal materials	6,000	68,871	14,010	27,027	2,581,828
Fuel	9,000	2,690	25	338	19,093
Mill supplies					61,882
All other materials	102	7,550	1,550	635	10,804
MISCELLANEOUS EXPENSES—Aggregate	$1,000	$8,507	$715	$1,775	$284,365
Amount paid for contract work					
Rent	400	2,810	180	1,600	
Power and heat					44,204
Taxes	350	2,502	250	100	97,812
Insurance	100	405	60	25	23,903
Repairs, ordinary, of buildings and machinery	150	275	100	50	12,365
Interest on cash used in the business		400			71,269
All sundries not elsewhere reported		2,115	125		34,812
GOODS MANUFACTURED—Aggregate value	$53,830	$174,241	$30,481	$83,190	$3,979,042
Principal product	53,830	106,241	30,481	83,190	3,979,042
All other products, including receipts from custom work and repairing		68,000			

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.	Flouring and grist mill products. — (3 establishments.)	Lumber. (a) — (3 establishments.)	Marble and stone work. — (3 establishments.)	Mattresses and spring beds. — (6 establishments.)	Musical instruments and materials. (Not specified.) — (4 establishments.)
CAPITAL EMPLOYED—Aggregate	$126,500	$216,061	$29,900	$6,030	$14,675
HIRED PROPERTY—Total	11,000	25,000	7,500	3,350	10,625
PLANT—Total	60,000	82,926	3,500	1,150	1,700
Land	10,000	15,000	1,000	450	
Buildings	26,000	11,326	200	100	
Machinery, tools, and implements	24,000	56,600	2,300	600	1,700
LIVE ASSETS—Total	55,500	108,135	18,000	1,530	2,350
Raw materials	11,500	16,500	2,900	785	1,000
Stock in process and finished product	14,500	17,500	13,300	520	1,050
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	29,500	74,135	2,700	225	300
WAGES PAID—Aggregate	$20,374	$79,999	$20,694	$6,570	$9,224
Average number of hands employed during the year	38	238	30	17	15
Males above 16 years	38	233	29	10	13
Females above 15 years				4	
Children		5	1		1
Pieceworkers				3	1
MATERIALS USED—Aggregate cost	$349,603	$109,900	$26,950	$23,510	$1,975
Principal materials	328,000	101,700	26,200	22,610	1,600
Fuel	358				
Mill supplies		2,500	350		
All other materials	21,245	5,700	400	900	375
MISCELLANEOUS EXPENSES—Aggregate	$7,992	$25,576	$1,377	$664	$1,090
Amount paid for contract work					
Rent	780	2,240	700	269	850
Power and heat	1,600				
Taxes	2,260	5,078	317	25	40
Insurance	1,337	2,463			
Repairs, ordinary, of buildings and machinery	1,015	2,500	60		
Interest on cash used in the business		1,669	200	20	
All sundries not elsewhere reported	1,000	11,626	100	350	200
GOODS MANUFACTURED—Aggregate value	$391,600	$238,500	$64,050	$49,899	$13,175
Principal product	381,600	231,000	60,550	47,799	12,125
All other products, including receipts from custom work and repairing	10,000	7,500	3,500	2,100	1,050

a Includes the manufacture of sash, doors, and blinds, and other planing mill products; also the manufacture of lumber and other mill products from logs or bolts.

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CENSUS BULLETIN.

No. 237. WASHINGTON, D. C. October 14, 1892.

MANUFACTURES—THE COTTON INDUSTRY.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,
WASHINGTON, D. C., October 1, 1892.

Herewith is presented a preliminary report on the manufacture of cotton in the United States, prepared by Mr. EDWARD STANWOOD, special agent, under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics relating to all branches of manufactures. The inquiry made for the Eleventh Census respecting this important industry has been much more comprehensive than at any previous census and, as such, will have corresponding value. The figures, however, are not final, but will be held subject to revision.

The growth of the cotton manufacturing industry of the United States has been constant. One of the most gratifying features of the situation is the great extension of this industry in the south, where a marked addition is shown in the number of cotton mills established and successfully operated. The magnitude of this movement is demonstrated by the fact that the consumption of raw cotton in the southern states in 1890 exceeded that of 1880 by 166,308,889 pounds, while in New England, the chief seat of this manufacture, the excess of consumption of 1890 over that of 1880 was only 173,317,834 pounds. Nevertheless, the development of cotton manufacture throughout the country, measured by any test, was large and healthy. Inasmuch as the manufacture of cotton is one of the principal industries to which the factory system is applied, its condition, as herein exhibited, throws much light upon the industrial situation.

The tables herewith given do not include the returns of special mills employed in working raw cotton, waste, or yarn into hose, webbing, tapes, mixed goods, or fabrics which are not classed as specific manufactures of cotton.

The general facts attending the increase, as indicated by the accompanying tables, are shown in the following comparative statement; but the caution must be repeated touching certain items that the more thorough inquiries employed at the present census will cause the increase to appear greater than it really is.

COMPARATIVE STATEMENT OF THE COTTON MANUFACTURE.

GENERAL HEADS.	1890	1880	Percentage of increase.
Number of establishments reported	904	756	19.58
Capital invested	$354,020,843	$208,280,346	69.97
Number of hands employed (officers and clerks included)	221,585	174,659	26.87
Amount of wages paid (amount paid officers and clerks not included)	$66,024,538	$42,040,510	57.05
Amount of wages paid to officers and clerks	$3,464,734	.....	.....
Miscellaneous expenses	$17,036,135	.....	.....
Cost of materials used	$154,593,368	$102,206,347	51.26
Value of product	$267,981,721	$192,090,110	39.51
Number of spindles	14,088,103	10,653,435	32.21
Number of looms	324,866	225,759	43.90
Pounds of raw cotton consumed	1,117,945,776	750,343,981	48.99

Especially is this the case in regard to wages, which have increased 57.05 per cent, while the number of hands employed has increased 26.85 per cent. In both instances the number of and amount paid to officers and clerks are excluded. When compared with all hands employed, not including officers and clerks, it will be seen that the annual earnings in 1890 were $301.65 as against $243.65 in 1880, an increase of $58.00 a year, or 23.80 per cent. There has undoubtedly been a positive increase in these earnings during the decade. The increase in wages may not have been so great as indicated by this comparison, as the excess of increase in the number of operatives between 1880 and 1890 was, in a large measure, in the class earning the highest rate of wages, namely, the men, while the number of children employed has happily decreased. Nevertheless, the figures show a gratifying increase of wages, the employment of higher grade workmen, and a decrease in the employment of children.

It will be observed that the items of "amount of wages paid to officers and clerks" and "miscellaneous expenses" are reported for 1890 only. No previous census inquiry has embraced the cost incurred in manufacturing operations other than of "wages paid" and "materials used", a fact that should be constantly borne in mind in comparing all industrial statistics of previous census periods with those of the Eleventh Census.

It is not presumed that the facts obtained by the Census Office in regard to manufactures will show, except in a general way, that difference between receipts and expenditures which may be classed as profits of manufacture. However, so far as these figures can be taken as a full statement of the financial results of the manufacture of cotton, it appears that of every dollar received for goods made and sold, 43.81 cents represent the cost of cotton consumed in the manufacture, 13.88 cents the cost of other materials, 6.36 cents the amount of miscellaneous expenses, and 25.93 cents the cost of labor, including the amount paid to officers and clerks. The sum of 10.02 cents remains as residue to cover the depreciation of plant (a large item in cotton mills), as well as the visible profits of the manufacture.

Robert P. Porter.

Superintendent of Census.

STATISTICS OF COTTON MANUFACTURES.

BY EDWARD STANWOOD.

The decade which ended with the census year of 1890 was a period of large development in the cotton manufacturing industries. The number of producing spindles in cotton mills in the United States in operation during the census year, as reported in the accompanying tables, shows an increase from 10,653,435 in 1880 to 14,088,103 in 1890. The numerical increase is 3,434,668, the percentage of increase being 32.24.

The spindle is the unit universally employed in measuring capacity of production of cotton goods; but the history of the 10 years under consideration includes the introduction, on a large scale, of improved spindles, with a much greater capacity for work than any previously in use. The number of spindles, consequently, is by no means a perfect measure of the increase, although it is the best that can be devised, for it would lead to much greater error than results from the use of the spindle as a unit to measure capacity either by the quantity of cotton consumed or by the quantity or value of the product, but in stating the increase in terms of spindles, the greater efficiency of modern spindles must be taken into account.

Table 1 exhibits the leading general facts regarding the cotton manufacturing establishments of the United States during the census years of 1880 and 1890. The establishments reported are those engaged in spinning or weaving cotton, together with those which convert the waste of cotton mills into a commercial product. This table does not embrace any establishments for the production of cotton hosiery and knit goods, all of which have been reported in Census Bulletin No. 169, Statistics of Wool Manufacture, nor does it include the manufacture of elastic fabrics or cotton cordage and twine, which will be reported hereafter. The table shows the number of establishments reporting, capital invested, number of hands employed, amount of wages paid, miscellaneous expenses, cost of materials consumed, and value of product.

NUMBER OF ESTABLISHMENTS.

The increase in the total number of establishments reporting is 148. The increase of 78 in the number of establishments in the southern states indicates the growth of cotton manufacture in that section during the past decade. While a small decrease is shown in the number of establishments in New England, a very large increase is reported in all other items concerning the industry in that section. The statistics relating to the western states are unimportant, since cotton manufacture has not as yet obtained a foothold west of the state of New York.

CAPITAL INVESTED.

Owing to the changed form of inquiry employed at the Eleventh Census, the amount of capital invested in land, buildings, and machinery is separately shown for the first time, and an additional column provided giving the value of all other property or assets used in manufacturing operations. The increase of capital invested is about 70 per cent over that of 1880, but this increase is more apparent than real, because the invested capital returned at the census of 1880 did not take cognizance of all items which properly embrace "live assets". The more exact and perfect method employed at the Eleventh Census of ascertaining the amount of invested capital has brought into the capital account large sums of which no cognizance has been taken heretofore, and hence, in this respect, a comparison of the figures of 1890 with those of 1880 is not a comparison between like conditions and facts. No facts are developed which warrant the conclusion that investment in cotton manufacture has increased at a ratio more rapid than has the number of spindles.

TABLE 1.—COMPARATIVE STATEMENT: 1890-1880.

	STATES.	Year.	Number of establishments reporting.	CAPITAL. Total. (a)	Value of land, buildings, and machinery.	Live assets.	Miscellaneous expenses. (b)
1	United States	1890	904	$354,020,843	$230,993,567	$123,027,276	$17,036,135
2		1880	756	208,280,346			
3	New England states	1890	402	243,153,249	156,612,532	86,540,717	12,268,995
4		1880	439	156,754,690			
5	Maine	1890	23	20,850,754	13,335,358	7,515,396	1,224,710
6		1880	21	15,292,078			
7	New Hampshire	1890	27	26,801,933	16,369,652	10,432,281	1,365,087
8		1880	36	19,877,084			
9	Vermont	1890	6	1,431,986	1,026,200	405,786	63,033
10		1880	7	936,096			
11	Massachusetts	1890	187	128,838,837	80,892,202	47,946,635	6,769,193
12		1880	175	72,291,001			
13	Rhode Island	1890	91	38,798,161	27,778,643	11,019,518	1,884,695
14		1880	115	28,047,331			
15	Connecticut	1890	65	26,431,578	17,210,477	9,221,101	962,277
16		1880	82	20,310,500			
17	Middle states	1890	239	51,676,249	33,011,849	18,664,400	2,163,829
18		1880	139	31,014,759			
19	New York	1890	42	13,290,745	10,236,876	3,053,869	733,663
20		1880	36	11,399,638			
21	New Jersey	1890	17	13,519,972	7,152,467	6,367,505	291,649
22		1880	17	3,807,750			
23	Pennsylvania	1890	158	15,884,936	9,248,088	6,636,848	765,320
24		1880	59	10,331,985			
25	Delaware	1890	7	1,683,803	1,132,118	551,685	103,819
26		1880	8	874,570			
27	Maryland	1890	15	7,296,793	5,242,300	2,054,493	359,378
28		1880	19	4,600,816			
29	Southern states	1890	239	53,827,303	37,919,840	15,907,463	2,318,358
30		1880	161	17,375,897			
31	Virginia	1890	9	2,966,889	2,253,693	713,196	104,909
32		1880	8	1,190,100			
33	North Carolina	1890	91	10,775,134	8,102,104	2,673,030	421,874
34		1880	40	2,855,800			
35	South Carolina	1890	34	11,141,833	7,388,700	3,753,133	530,708
36		1880	14	2,776,100			
37	Georgia	1890	53	17,664,675	12,003,806	5,660,869	779,026
38		1880	40	6,348,657			
39	Alabama	1890	13	2,853,015	1,852,950	1,000,065	154,893
40		1880	16	1,246,500			
41	Mississippi	1890	9	2,053,743	1,313,020	740,723	57,622
42		1880	8	1,122,140			
43	Kentucky	1890	5	1,376,132	930,708	445,424	60,200
44		1880	3	360,000			
45	Tennessee	1890	20	2,928,657	2,221,703	706,954	173,953
46		1880	16	1,145,600			
47	All other states	1890	c5	2,067,225	1,853,156	214,069	32,173
48		1880	f7	331,000			
49	Western states	1890	24	5,364,042	3,449,346	1,914,696	284,953
50		1880	17	3,135,000			
51	Ohio	1890	7	1,213,217	530,394	682,823	106,899
52		1880	4	670,000			
53	Indiana	1890	6	1,744,720	1,158,447	586,273	73,941
54		1880	4	1,090,000			
55	Illinois	1890	4	766,405	613,483	152,922	18,986
56		1880	(f)				
57	Missouri	1890	(e)				
58		1880	3	890,000			
59	Wisconsin	1890	4	892,509	667,022	225,487	53,127
60		1880	(f)				
61	All other states	1890	c3	747,191	480,000	267,191	32,000
62		1880	f6	485,000			

a Capital invested in 1890 does not include property hired to the amount of $8,301,464, which is omitted for comparative purposes, as this item was not reported in 1880.
b This item was not reported in 1880; it includes the rent of hired property.
c The salary of officers and clerks was not reported in 1880.
d The total wages for 1890 includes salaries paid officers and clerks.

TABLE 1.—COMPARATIVE STATEMENT: 1890-1880.

LABOR AND WAGES.											
Average number of hands employed.				Officers and clerks.				Total amount paid in wages. (d)	Cost of materials used.	Value of products.	
Total.	Males.	Females.	Children.	Males.	Females.	Children.	Wages, (e)				
221,585	88,837	106,607	23,432	2,627	82	.....	$3,464,734	$69,489,272	$154,593,368	$267,981,724	1
174,659	59,685	81,539	28,320	2,075	19	21	.....	42,010,510	102,206,347	192,090,110	2
148,718	63,749	73,445	10,165	1,308	51	.....	2,075,648	49,908,591	100,918,881	181,112,453	3
127,185	45,521	62,554	17,704	1,376	14	16	.....	32,170,861	74,290,026	143,363,030	4
13,992	5,193	7,856	863	80	.....	.....	158,950	4,372,473	8,407,362	15,316,909	5
11,864	3,858	6,481	1,420	104	.....	1	.....	2,936,640	7,320,152	13,319,363	6
19,533	8,144	10,345	894	146	4	.....	186,880	6,429,084	12,938,074	21,958,002	7
16,529	5,104	9,594	1,697	131	2	1	.....	4,290,960	10,146,904	17,953,403	8
737	325	309	90	13	.....	.....	16,204	220,742	538,925	914,685	9
735	200	350	171	14	.....	.....	.....	161,748	508,297	855,864	10
76,213	33,101	38,352	4,091	629	40	.....	1,112,302	26,230,667	56,492,375	100,202,882	11
61,844	22,180	31,496	7,570	594	1	3	.....	15,828,571	35,991,109	72,289,518	12
21,832	10,507	10,887	3,182	254	2	.....	316,375	8,131,142	14,334,034	27,310,499	13
21,474	8,045	9,199	3,930	299	.....	1	.....	5,320,303	12,291,437	22,875,111	14
13,411	6,479	5,696	1,045	186	5	.....	284,937	4,524,483	8,208,111	15,409,476	15
14,739	6,434	5,434	2,916	234	11	10	.....	3,632,639	8,029,127	16,069,771	16
32,344	11,580	16,240	4,024	490	13	.....	579,284	10,763,873	22,968,895	40,664,476	17
28,367	8,919	13,185	6,014	212	3	4	.....	6,613,269	16,191,758	29,389,286	18
8,401	3,246	4,034	1,036	85	.....	.....	115,699	2,503,730	5,554,993	9,777,295	19
9,305	2,937	4,201	2,089	75	.....	3	.....	1,994,755	4,652,745	8,266,836	20
5,083	1,828	3,391	413	44	7	.....	69,623	2,054,282	3,021,758	5,902,615	21
4,222	1,180	2,291	708	43	.....	.....	.....	1,156,961	2,018,175	4,548,275	22
12,960	4,991	6,258	1,417	289	5	.....	299,071	4,687,088	10,450,052	18,431,773	23
9,957	3,339	4,454	2,086	74	3	1	.....	2,502,688	6,105,700	11,021,054	24
987	266	488	217	16	.....	.....	15,982	324,328	568,976	1,095,001	25
797	237	362	192	6	.....	.....	.....	192,727	527,205	871,007	26
4,313	1,249	2,069	938	56	1	.....	78,909	1,134,445	3,373,116	5,457,792	27
4,086	1,226	1,877	939	44	.....	.....	.....	766,129	2,887,933	4,682,114	28
37,168	12,517	15,083	8,815	737	16	.....	700,204	7,817,069	27,703,357	41,513,711	29
16,741	4,633	7,587	4,097	423	.....	1	.....	2,759,986	9,999,145	16,356,598	30
2,019	563	951	476	29	.....	.....	32,831	406,824	1,197,234	1,732,648	31
1,112	274	530	281	27	.....	.....	.....	169,789	640,391	1,040,962	32
8,742	2,788	3,656	2,071	226	1	.....	170,264	1,646,196	6,238,352	9,563,443	33
3,343	764	1,727	741	111	.....	.....	.....	439,659	1,463,645	2,554,482	34
8,192	2,849	3,070	2,152	116	5	.....	136,080	1,646,574	6,816,820	9,800,798	35
2,053	661	772	585	35	.....	.....	.....	380,844	1,808,300	2,895,769	36
10,530	3,849	4,005	2,460	212	4	.....	199,019	2,366,085	7,778,026	12,035,629	37
6,349	1,853	2,051	1,411	134	.....	.....	.....	1,135,184	4,019,673	6,481,894	38
2,137	795	852	501	48	1	.....	44,265	447,173	1,459,048	2,190,771	39
1,490	384	631	433	42	.....	.....	.....	239,998	783,711	1,228,019	40
1,181	450	398	306	30	.....	.....	26,984	290,981	871,970	1,333,398	41
722	176	313	206	27	.....	.....	.....	133,214	337,149	679,093	42
834	268	372	178	16	.....	.....	18,466	189,039	613,949	1,000,668	43
352	121	91	133	4	.....	.....	.....	63,850	253,818	418,286	44
2,174	670	997	457	47	3	.....	50,865	495,438	1,765,062	2,507,749	45
1,014	283	502	230	28	.....	1	.....	161,071	553,761	874,717	46
1,356	345	782	214	13	2	.....	21,400	328,759	932,896	1,318,637	47
276	114	70	77	15	.....	.....	.....	27,377	138,697	183,376	48
3,355	991	1,839	431	92	2	.....	109,598	999,739	3,002,235	4,691,084	49
2,366	612	1,213	505	34	2	.....	.....	505,403	1,725,418	2,981,196	50
584	235	342	7	29	1	.....	32,141	193,757	902,946	1,468,204	51
484	124	320	37	2	1	.....	.....	101,500	286,692	637,000	52
1,325	325	749	235	16	.....	.....	22,334	332,676	919,566	1,350,425	53
720	193	391	124	12	.....	.....	.....	162,829	g651,434	1,155,029	54
454	112	280	38	23	1	.....	26,400	150,386	337,773	563,988	55
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	56
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	57
515	120	207	181	7	.....	.....	.....	97,680	376,081	522,980	58
501	198	240	63	11	.....	.....	11,300	142,470	382,183	620,196	59
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	60
491	121	259	98	13	.....	.....	17,420	180,450	459,767	688,271	61
647	175	295	163	13	1	.....	.....	140,394	411,211	666,187	62

e Includes states in which there were less than 3 establishments in operation during the census year 1890, in order that the operations of individual establishments may not be disclosed. These establishments were distributed as follows: Southern states—Louisiana, 2; Texas, 1; Arkansas, 2. Western states—California, 1; Iowa, 1; Missouri, 1.

f Includes states in which there were less than 3 establishments in operation during the census year 1880, in order that the operations of individual establishments may not be disclosed. These establishments were distributed as follows: Southern states—Florida, 1; Louisiana, 2; Texas, 2; Arkansas, 2. Western states—Illinois, 2; Michigan, 1; Minnesota, 1; Wisconsin, 1; Utah, 1.

g See note *e*, Table 3.

LABOR AND WAGES.

The results shown by the table of labor and wages are interesting. The number of hands employed (including officers and clerks) has increased from 174,659 to 221,585, or 26.87 per cent. It will be observed that while the number of men has increased nearly one-half, 48.10 per cent, the increase in the number of women has been 26.17 per cent, almost identical with that of operatives generally, while the number of children employed exhibits a perceptible decrease.

The total wages reported as paid during the census year reach the sum of $66,024,538, exclusive of the amount paid to officers and clerks. This is an increase of $23,984,028 over the amount reported for 1880, or 57.05 per cent. A division of the total amount paid in wages, as reported at the census of 1880, by the number of hands employed (exclusive of officers and clerks), indicates an average sum of $243.65 earned by each during the year. A similar division of the wages reported in 1890 by the number of hands, with the same exceptions, indicates an average annual earning of $301.65, an increase of $58.00 a year, or 23.80 per cent. An explanation of a part of the difference may be found in the change just noted in the proportion of men, women, and children employed.

The total wages paid in 1890 are divided as follows:

EMPLOYÉS.	Number	Wages.	Average.
Men	91,464	$37,221,879	$406.99
Women	106,689	29,202,458	273.72
Children	23,432	3,061,935	130.67

No similar division of wages was made at the census of 1880 and, hence, comparison is not possible. But it will be understood that the excess of increase in the class of operatives earning the highest rate of wages, accompanied by a decrease in the number of those who earn the least, makes it necessary to use with great caution the facts ascertained by the census as indicating an absolute average increase of wages. In tables to be presented hereafter a full statement will be made of the number of persons, classified as men, women, and children, earning different rates of weekly wages.

MACHINERY—SPINDLES AND LOOMS.

Table 2 presents in detail the facts relating to the spindles and looms in cotton mills in 1880 and 1890. The division between mule and frame spindles, made at the census of 1870, was not made at the census of 1880; hence only the total number of spindles in 1880 can be reported.

TABLE 2.—COMPARATIVE STATEMENT OF ACTIVE MACHINERY: 1890-1880.

STATES.	Years.	Number of establishments reporting.	SPINDLES.			Looms.
			Total.	Mule.	Frame.	
United States	1890	904	14,088,103	5,263,486	8,824,617	324,866
	1880	756	10,653,435	.....	.....	225,759
New England states	1890	402	10,736,155	4,291,895	6,444,260	250,116
	1880	439	8,632,087	.....	.....	184,701
Maine	1890	23	885,762	344,697	541,065	21,825
	1880	24	695,921	.....	.....	15,971
New Hampshire	1890	27	1,095,643	264,234	831,409	31,850
	1880	36	944,053	.....	.....	24,299
Vermont	1890	6	71,591	42,735	28,856	1,175
	1880	7	55,081	.....	.....	1,180
Massachusetts	1890	187	5,824,518	2,430,719	3,393,799	133,227
	1880	175	4,236,084	.....	.....	95,321
Rhode Island	1890	94	1,924,486	811,869	1,112,617	43,106
	1880	115	1,764,569	.....	.....	29,669
Connecticut	1890	65	934,155	397,641	536,514	18,933
	1880	82	936,376	.....	.....	18,261
Middle states	1890	239	1,633,722	822,613	811,109	35,074
	1880	139	1,391,164	.....	.....	27,318
New York	1890	42	606,796	334,210	272,586	13,466
	1880	36	561,658	.....	.....	12,403
New Jersey	1890	17	374,442	304,480	69,962	3,673
	1880	17	232,221	.....	.....	3,180
Pennsylvania	1890	158	439,638	175,687	263,951	13,974
	1880	59	425,391	.....	.....	8,488
Delaware	1890	7	53,916	2,880	51,036	996
	1880	8	46,188	.....	.....	822
Maryland	1890	15	158,930	5,356	153,574	2,965
	1880	19	125,706	.....	.....	2,425
Southern states	1890	239	1,554,000	108,474	1,445,526	36,266
	1880	161	542,048	.....	.....	11,898
Virginia	1890	9	94,294	13,198	81,096	2,517
	1880	8	44,340	.....	.....	1,322
North Carolina	1890	91	337,786	30,920	306,866	7,254
	1880	49	92,385	.....	.....	1,790
South Carolina	1890	34	332,784	4,000	328,784	8,546
	1880	14	82,334	.....	.....	1,676
Georgia	1890	53	445,452	20,524	424,928	10,459
	1880	40	198,656	.....	.....	4,493
Alabama	1890	13	79,234	9,460	69,774	1,692
	1880	16	49,432	.....	.....	863
Mississippi	1890	9	57,004	.....	57,004	1,352
	1880	8	18,568	.....	.....	644
Kentucky	1890	5	42,942	8,784	34,158	677
	1880	3	9,022	.....	.....	73
Tennessee	1890	20	97,524	21,588	75,936	2,043
	1880	16	35,796	.....	.....	818
All other states	1890	*a*5	66,980	.....	66,980	1,726
	1880	*b*7	11,575	.....	.....	219
Western states	1890	24	164,226	40,504	123,722	3,410
	1880	17	88,136	.....	.....	1,842
Ohio	1890	7	16,560	8,152	8,408	40
	1880	4	13,328	.....	.....	42
Indiana	1890	6	74,604	16,320	58,284	1,649
	1880	4	33,396	.....	.....	776
Illinois	1890	4	21,800	8,000	13,800	465
	1880	(*b*)	.....	.....	.....	.....
Missouri	1890	(*a*)	.....	.....	.....	.....
	1880	3	19,312	.....	.....	431
Wisconsin	1890	4	32,592	5,632	26,960	870
	1880	(*b*)	.....	.....	.....	.....
All other states	1890	*a*3	18,670	2,400	16,270	386
	1880	*b*6	22,100	.....	.....	593

a Includes states in which there were less than 3 establishments in operation during the census year 1890, in order that the operations of individual establishments may not be disclosed. These establishments were distributed as follows: Southern states—Louisiana, 2; Texas, 1; Arkansas, 2. Western states—Illinois, 2; Michigan, 1; Minnesota, 1; Wisconsin, 1; Utah, 1.

b Includes states in which there were less than 3 establishments in operation during the census year 1880, in order that the operations of individual establishments may not be disclosed. These establishments were distributed as follows: Southern states—Florida, 1; Louisiana, 2; Texas, 2; Arkansas, 2. Western states—California, 1; Iowa, 1; Missouri, 1.

INCREASE OF SPINDLES.

The increase in the number of spindles reported is 3,434,668, or 32.24 per cent, and in looms, 99,107, or 43.90 per cent.

The total number of spindles herein exhibited is, for each census, the number operated in cotton mills during the census year. In both cases the number is slightly below that commonly reported in commercial estimates. In order to arrive at the basis of comparison with trade statistics it is necessary to add to the totals the number of spindles in mills not in operation during the year and the number of spindles in certain woolen mills which produce cotton warps for weaving in mixed goods. Careful examination of the trade directories also reveals the fact that, in a few cases, spindles are reported for mills which never passed the stage of projected mills, and in a few other cases mills are reported twice under different names. The number of spindles reported in idle mills is 166,143; the number of cotton spindles in woolen mills proper, not as yet exactly ascertained, is about 196,000. The total number of spindles, active and idle, is therefore about 14,450,000.

The numerical and proportionate increase in the number of spindles, as reported in these tables, by geographical divisions, is as follows:

GEOGRAPHICAL DIVISIONS.	Spindles.	Increase.
	Number.	*Per cent.*
New England states	2,104,068	24.37
Middle states	242,558	17.44
Southern states	1,011,952	186.69
Western states	76,090	86.33

While the numerical increase in New England is more than twice that of the southern states, leaving that section still far in advance of any other, yet the paramount fact concerning the progress of cotton manufacturing between 1880 and 1890 is the prodigious growth of the industry in the south. In each of the states of North Carolina, South Carolina, and Georgia the increase is almost exactly a quarter of a million spindles, which is a larger number by far than that which indicates the increase in any other state except Massachusetts. Nevertheless, the lead obtained in the past by New England is so great that even the extraordinary development of southern cotton manufacturing affected but slightly its percentage of the total increase. In 1880 the two states of Massachusetts and Rhode Island reported 56.33 per cent of all the spindles in the country; the corresponding percentage for 1890 is 55.00.

The statistics showing the number of looms possess but little significance.

MATERIALS CONSUMED.

Table 3 shows in detail the amount of cotton consumed by the cotton mills in each state; also the consumption of yarn spun and waste produced in other mills, the value of dyestuffs, fuel, and mill supplies, and the total cost of all materials entering into the manufacture.

The total consumption of raw cotton in these mills was 2,258,562 bales, of an aggregate weight of 1,117,945,776 pounds. It is interesting to note how closely these figures confirm the accuracy of trade statistics. No commercial statistics regarding any article of human consumption are more carefully compiled than those of the American cotton crop. Inasmuch as the amount exported is accurately known, the quantity left for home consumption is a matter of simple subtraction. The commercial estimate of the crop of 1889–1890 was 7,313,726 bales, of which 2,342,328 bales are supposed to have been consumed by spinners in the United States. Of the cotton reported in the table, 23,283 bales were of the "sea island" variety (which does not form part of the general crop reported by cotton statisticians, but is reported separately) and 8,932 bales were imported Egyptian cotton. The amount of raw cotton reported as consumed in woolen, worsted, and hosiery mills (see Census Bulletin No. 169, page 10) was 75,638,865 pounds, which, at an average of 495 pounds to the bale, aggregates 152,806 bales; therefore a foreign and domestic supply of 2,374,543 bales must be accounted for. The census accounts for the consumption of 2,411,368 bales, an excess of 36,825 bales, or 1.55 per cent. When

the fact is considered that the census year ended on June 1 and the crop year on September 1, and also the fact that many of the southern mills buy their cotton direct, so that it never enters into the visible supply, the coincidence of the two returns is striking.

The increase in the number of bales consumed from 1880 to 1890 is 688,218, or 43.83 per cent, and in weight of cotton 48.99 per cent. This indicates what was also well known, that the average weight of bales in 1890 was greater than in 1880. The cotton used in American mills averaged 478 pounds to the bale in 1880, while in 1890 the average was 495 pounds.

The improvements in spindles during this decade, or rather the large introduction of recent improvements, has already been referred to. This change is reflected in the average consumption of cotton per spindle. In 1870 the average consumption was a little less than 56 pounds a year; in 1880 it had risen to 70.43 pounds, while the average in 1890 was 79.35 pounds.

The total cost of all materials shows an apparent increase of 51.26 per cent. That this increase is in excess of the true rate is evident from the fact that the use of materials of the value of only $15,260,622, other than raw cotton, was reported to the Tenth Census, whereas the value of similar materials reported for 1890 is in excess of $37,000,000.

TABLE 3.—COMPARATIVE STATEMENT OF MATERIALS USED: 1890-1880.

	STATES.	Year.	Establishments reporting.	COTTON USED.			COTTON YARN NOT MADE IN MILL.	
				Bales.	Pounds.	Cost.	Pounds.	Cost.
1	United States	1890	904	2,258,562	1,117,945,776	$117,392,576	48,779,715	$10,853,536
2		1880	756	1,570,344	750,343,981	86,945,725	.....	.....
3	New England states	1890	402	1,425,958	714,691,714	76,749,130	17,928,077	4,562,936
4		1880	439	1,129,498	541,373,880	63,169,434	.....	.....
5	Maine	1890	23	132,504	65,717,252	7,053,168	864,321	159,150
6		1880	24	112,381	54,185,061	6,234,901	.....	.....
7	New Hampshire	1890	27	214,034	107,319,124	11,203,742	193,255	40,560
8		1880	36	157,673	76,386,499	8,629,063	.....	.....
9	Vermont	1890	6	8,954	4,647,889	498,348	.....	.....
10		1880	7	7,404	3,562,088	458,607	.....	.....
11	Massachusetts	1890	187	772,520	386,767,326	40,870,307	11,247,478	2,785,544
12		1880	175	574,857	273,718,889	31,107,154	.....	.....
13	Rhode Island	1890	94	193,291	97,982,155	11,147,080	3,333,127	852,122
14		1880	115	167,480	81,137,172	10,457,770	.....	.....
15	Connecticut	1890	65	104,655	52,257,968	5,976,485	2,289,896	725,500
16		1880	82	109,703	52,384,171	6,281,939	.....	.....
17	Middle states	1890	239	261,154	128,184,288	13,906,748	26,248,657	5,505,267
18		1880	139	228,729	109,321,428	13,258,526	.....	.....
19	New York	1890	42	78,824	39,522,057	4,270,665	2,551,113	440,934
20		1880	36	64,614	31,656,594	3,981,106	.....	.....
21	New Jersey	1890	17	25,723	12,301,151	1,816,468	1,169,600	353,204
22		1880	17	21,069	9,950,609	1,319,422	.....	.....
23	Pennsylvania	1890	158	92,705	44,629,588	4,371,693	21,822,153	4,651,840
24		1880	59	83,997	40,311,809	4,749,428	.....	.....
25	Delaware	1890	7	8,876	4,465,825	475,490	4,730	868
26		1880	8	7,512	3,236,184	427,855	.....	.....
27	Maryland	1890	15	55,026	27,265,667	2,972,432	701,061	58,421
28		1880	19	51,537	24,166,232	2,780,715	.....	.....
29	Southern states	1890	239	523,818	250,837,646	21,508,776	3,855,882	635,808
30		1880	161	182,349	84,528,757	8,890,408	.....	.....
31	Virginia	1890	9	22,731	10,616,206	1,080,773	5,293	821
32		1880	8	11,461	5,087,519	601,796	.....	.....
33	North Carolina	1890	91	114,371	53,546,289	5,396,974	1,938,261	327,102
34		1880	49	27,642	11,832,641	1,125,984	.....	.....
35	South Carolina	1890	34	133,342	64,000,600	6,242,598	945,482	171,203
36		1880	14	83,624	15,601,005	1,723,187	.....	.....
37	Georgia	1890	53	145,859	69,139,410	6,663,560	865,000	117,677
38		1880	40	71,389	33,757,199	3,591,554	.....	.....
39	Alabama	1890	13	26,924	14,726,454	1,372,058	3,000	315
40		1880	16	14,702	7,271,791	729,202	.....	.....
41	Mississippi	1890	9	17,366	8,449,834	793,600	.....	.....
42		1880	8	6,411	2,881,853	301,226	.....	.....
43	Kentucky	1890	5	11,980	5,751,305	554,206	69,793	13,261
44		1880	3	4,050	1,882,234	188,856	.....	.....
45	Tennessee	1890	20	33,114	15,779,360	1,551,851	26,053	4,779
46		1880	16	10,436	4,944,279	508,305	.....	.....
47	All other states	1890	a5	18,131	8,828,188	850,156	3,000	650
48		1880	b7	2,634	1,270,236	120,298	.....	.....
49	Western states	1890	24	47,632	21,232,128	2,227,922	747,099	149,525
50		1880	17	29,768	15,119,916	1,627,357	.....	.....
51	Ohio	1890	7	11,023	5,840,078	383,556	731,499	146,300
52		1880	4	5,323	2,506,182	258,198	.....	.....
53	Indiana	1890	6	16,306	8,240,434	798,178	.....	.....
54		1880	4	11,558	6,364,887	c679,911	.....	.....
55	Illinois	1890	4	6,405	3,267,188	312,621	.....	.....
56		1880	(b)	.....	.....	.....	.....	.....
57	Missouri	1890	(a)	.....	.....	.....	.....	.....
58		1880	3	6,399	3,082,132	336,984	.....	.....
59	Wisconsin	1890	4	6,924	3,470,388	359,117	15,600	3,225
60		1880	(b)	.....	.....	.....	.....	.....
61	All other states	1890	a3	6,974	3,414,040	374,450	.....	.....
62		1880	b6	6,488	3,166,715	352,264	.....	.....

a Includes states in which there were less than 3 establishments in operation during the census year 1890, in order that the operations of individual establishments may not be disclosed. These establishments were distributed as follows: Southern states—Louisiana, 2; Texas, 1; Arkansas, 2. Western states—California, 1; Iowa, 1; Missouri, 1.

TABLE 3.—COMPARATIVE STATEMENT OF MATERIALS USED: 1890–1880.

ALL OTHER YARNS NOT MADE IN MILL.		WASTE OF OTHER MILLS.		CHEMICALS AND DYESTUFFS.	FUEL.	MILL SUPPLIES.	ALL OTHER MATERIALS.	Total cost of all materials.	
Pounds.	Cost.	Pounds.	Cost.	Cost.	Cost.	Cost.	Cost.		
677,951	$509,682	102,567,306	$4,749,867	$4,266,779	$4,252,088	$4,871,990	$7,696,856	$154,593,308	1
								102,206,347	2
92,322	113,016	71,855,604	3,359,429	3,278,740	3,143,008	3,475,182	6,267,440	100,918,881	3
								74,290,026	4
		4,459,851	309,655	201,962	161,654	364,048	157,725	8,407,362	5
								7,320,152	6
		61,460	3,550	711,540	305,150	285,011	388,521	12,998,074	7
								10,146,004	8
					10,394	25,900	4,283	528,025	9
								508,297	10
41,312	57,353	61,488,846	2,732,548	1,939,679	1,876,222	1,735,245	4,495,477	56,402,375	11
								35,991,109	12
8,710	8,213	4,804,447	240,390	227,336	557,946	585,740	715,207	14,334,034	13
								12,201,437	14
42,300	47,450	1,038,000	73,186	198,323	201,642	479,238	506,327	8,208,111	15
								8,029,127	16
582,597	395,766	10,049,850	618,415	437,837	559,256	640,220	905,386	22,968,895	17
								16,191,758	18
26,752	28,520	7,160,374	414,556	11,388	117,026	97,486	141,418	5,551,903	19
								4,092,745	20
		200,476	10,540	111,665	140,551	234,025	343,296	3,021,758	21
								2,018,175	22
555,845	367,246	2,689,000	163,310	256,041	203,390	191,987	243,642	10,450,052	23
								6,105,700	24
				39,397	20,101	24,630	9,087	568,076	25
								527,205	26
				15,413	69,185	92,602	164,943	3,379,116	27
								2,887,033	28
3,035	900	13,083,544	436,861	507,585	515,599	710,162	387,666	27,703,357	29
								9,999,145	30
				35,870	17,161	48,023	13,977	1,197,231	31
								610,391	32
3,000	800	415,604	26,057	198,585	100,565	121,031	67,238	6,238,352	33
								1,461,645	34
		7,200	360	42,966	111,078	180,855	67,760	6,816,820	35
								1,808,300	36
		12,255,740	326,641	182,406	140,661	189,357	157,718	7,778,026	37
								4,019,973	38
35	100			6,948	23,872	51,157	4,598	1,450,048	39
								784,711	40
				18,000	28,184	15,835	16,351	871,970	41
								337,149	42
		225,000	16,300	15,048	8,704	18,690	17,740	643,949	43
								253,818	44
		1,080,000	67,500	7,053	47,525	53,060	39,294	1,795,962	45
								553,761	46
				700	37,846	31,554	11,990	932,896	47
								138,697	48
		6,678,308	335,162	42,611	64,225	46,420	136,304	3,002,235	49
								1,725,418	50
		5,878,398	285,162	13,993	9,784	6,420	57,731	902,946	51
								286,692	52
		800,000	50,000	17,218	22,170	16,996	14,998	919,366	53
								e651,434	54
				7,500	7,877	8,323	1,452	337,773	55
									56
									57
								376,081	58
					9,496	8,187	2,158	382,183	59
									60
				3,900	14,892	6,500	60,025	459,767	61
								411,211	62

b Includes states in which there were less than 3 establishments in operation during the census year 1880, in order that the operations of individual establishments may not be disclosed. These establishments were distributed as follows: Southern states—Florida, 1; Louisiana, 2; Texas, 2; Arkansas, 2. Western states—Illinois, 2; Michigan, 1; Minnesota, 1; Wisconsin, 1; Utah, 1.

e Owing to error in the published statistics for 1880 the cost of cotton in Indiana is shown to be in excess of the total cost of all materials used.

PRODUCTS.

In reporting the amount of piece goods manufactured the square yard was adopted as the universal unit. The advantage of uniformity in this respect is obvious. Inasmuch as the census of 1880 did not classify goods, nor reduce to a uniform standard those reported in running yards, there are no elements of comparison as to quantity of product between the results of the Tenth and the Eleventh Censuses, nor does the value present any basis of comparison, owing to the great variation in prices during the decade. The general downward tendency of prices is reflected in the fact that, while the quantity of cotton increased 48.99 per cent, and the total wages paid, exclusive of amount paid to officers and clerks, increased 57.05 per cent, the aggregate value of all products increased only 39.51 per cent. The details of the amounts and values of the various classes of goods manufactured during the year in the several geographical divisions of the country are exhibited in the following table. The respective amounts for each state will be presented hereafter.

TABLE 4.—SUMMARY OF GOODS MANUFACTURED: 1890.

PRODUCTS.	UNITED STATES.		NEW ENGLAND STATES.		MIDDLE STATES.		SOUTHERN STATES.		WESTERN STATES.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Total value of all products	.....	$267,981,724	.....	$181,112,453	.....	$40,664,476	.....	$41,513,711	.....	$4,691,084
Plain cloths for printing or converting (square yards).	955,294,320	43,550,174	811,945,763	36,811,201	119,983,537	5,621,564	23,365,020	1,117,409	.....	.....
Brown or bleached sheetings or shirtings (square yards).	962,238,062	55,193,439	634,487,634	37,784,925	36,012,784	2,672,270	250,526,060	12,729,063	41,211,584	2,007,181
Drills, twills, and sateens (square yards).	334,020,091	23,601,239	258,208,626	18,475,344	18,206,659	1,443,168	57,153,833	3,651,159	450,973	31,568
Ginghams (square yards)	208,996,715	20,686,390	114,092,225	9,975,197	56,200,311	5,126,992	98,481,246	5,570,157	222,933	14,044
Cotton flannels (square yards)	132,524,706	10,574,924	110,106,513	8,887,302	10,809,242	949,761	11,608,951	737,861	.....	.....
Fine or fancy woven fabrics (square yards).	127,373,179	12,545,929	117,000,295	11,102,236	9,968,640	1,405,897	404,244	37,796	.....	.....
Duck (square yards)	55,192,538	8,664,395	16,979,346	2,836,615	22,541,200	4,190,527	15,270,658	1,570,917	401,334	66,336
Ticks, denims, and stripes (square yards).	167,121 426	16,987,546	130,778,135	13,516,387	19,468,275	2,257,953	16,875,016	1,213,206	.....	.....
Upholstery goods	.....	2,070,239	.....	45,000	.....	2,024,839	.....	.....	.....	400
Bags or bagging	.....	3,107,413	.....	1,782,124	.....	139,283	.....	1,105,006	.....	81,000
Tape and webbings	.....	1,759,512	.....	987,535	.....	771,977	.....	.....	.....	.....
Yarns for sale (pounds)	166,397,003	33,247,596	62,779,938	15,380,453	31,532,884	5,699,441	67,752,241	11,311,733	4,331,940	855,969
Sewing cotton (pounds)	13,868,309	11,637,500	9,454,240	7,860,189	3,729,722	3,585,476	684,347	191,835	.....	.....
Twine (pounds)	8,533,730	1,364,300	2,971,413	532,632	2,778,867	385,076	1,787,250	285,649	996,200	160,943
Batting or wadding (pounds)	20,470,556	2,094,232	9,631,309	921,331	1,516,694	166,985	2,383,961	202,655	6,938,592	803,261
Rope (pounds)	3,590,228	479,415	75,000	11,250	120,822	17,358	2,894,406	375,807	500,000	75,000
Waste (pounds)	141,109,597	5,679,701	96,882,997	3,754,271	17,345,471	939,814	20,796,367	656,142	6,084,762	329,474
All other products	.....	14,737,780	.....	10,448,461	.....	3,266,095	.....	757,316	.....	265,908

The total amount of piece goods reported is more than 3,000,000,000 square yards, almost enough to cover an area of 1,000 square miles, and more than enough to encircle the earth at the equator 68 times. The relative magnitude of the several branches of the industry appears clearly from this table. The largest amount appears under the classification of sheetings and shirtings, which represents more than one-fifth of the total value of products reported. Print cloths come closely after sheetings in quantity, although in gross value they stand for much less. All the larger classes of goods are coarse or of medium fineness, while goods woven from the higher counts of yarn make but a small fraction of the whole. The importance which the manufacture of sewing cotton has assumed is one of the striking facts developed in the above table. Substantially, the whole supply of spool thread is now both spun and finished in the United States.

As to the geographical distribution of the production of the several classes of goods, it will be seen that nearly six-sevenths of the print cloths and a much larger proportion of the finest goods are woven in New England. The manufactures of the Middle states run largely to sewing cotton, yarns, and duck, and almost all the upholstery goods are produced in these states. The mills of the south are chiefly devoted to the production of yarns and sheetings.

A statement of the operations of establishments which bleach, dye, and print the products of the cloth mills is essential to a correct understanding of the condition in which piece goods finally enter into consumption. These facts will be presented hereafter in a general report upon all the textile manufactures of the country.

In addition to the establishments herein reported a return was received from 1 penal institution operating 960 spindles and 20 looms, employing 458 hands, paying wages amounting to $6,722, and miscellaneous expenses $872, consuming materials to the value of $19,063, and manufacturing product valued at $22,494.

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CENSUS BULLETIN.

No. 238. WASHINGTON, D. C. October 14, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF BRIDGEPORT, CONNECTICUT.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,
WASHINGTON, D. C., October 10, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Bridgeport 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 items 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; 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	51
Capital invested	$77,322
Number of hands employed	208
Wages paid	$90,565
Cost of materials used	$71,873
Miscellaneous expenses	$16,545
Value of product at works	$190,266

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	196.47
Capital invested	95.01
Number of hands employed	67.22
Wages paid	121.41
Cost of materials used	109.57
Value of product at works	106.91
Population of city	76.78
Assessed valuation of city	87.21
Municipal debt less sinking fund	102.10

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 $445 in 1880 to $590 in 1890, or 32.58 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 P. Porter

Superintendent of Census.

STATISTICS OF MANUFACTURES: 1890.

CITY OF BRIDGEPORT, CONNECTICUT.

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	61	170	$9,751,785	7,508	$3,342,935	$4,819,939
	1890	85	555	19,094,180	12,763	7,492,092	10,173,212

INDUSTRIES.		Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA. Population.	Assessed valuation.	Municipal debt. (c)
All industries	1880		$10,458,212	27,643	(d) $11,720,503	(d) $740,268
	1890	1,448,898	21,829,776	48,866	21,942,282	1,406,113

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.
d Town and city combined.

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 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.

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 wagons. (b) (14 establishments.)	Corsets. (5 establishments.)	Foundry and machine shop products. (10 establishments.)	Hardware and tools. (b) (15 establishments.)	Liquors—malt. (4 establishments.)
CAPITAL EMPLOYED—Aggregate	$643,740	$2,551,840	$1,802,598	$974,867	$319,339
HIRED PROPERTY—Total	43,450	76,840	125,170	202,530	2,950
PLANT—Total	260,900	316,000	911,432	376,755	218,000
Land	139,000	50,000	157,699	28,000	65,000
Buildings	91,000	130,000	315,000	52,000	82,000
Machinery, tools, and implements	36,000	136,000	438,733	296,755	71,000
LIVE ASSETS—Total	339,390	2,159,000	765,006	395,522	98,389
Raw materials	54,575	266,000	167,155	51,315	7,700
Stock in process and finished product	67,450	840,000	186,072	180,727	31,780
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	217,305	1,053,000	412,769	163,480	58,900
WAGES PAID—Aggregate	$286,097	$921,138	$717,655	$287,287	$38,710
Average number of hands employed during the year	394	2,172	1,257	605	44
Males above 16 years	276	258	966	443	44
Females above 15 years		1,076	5	48	
Children		17	68	2	
Pieceworkers	118	821	218	112	
MATERIALS USED—Aggregate cost	$233,697	$1,270,850	$746,529	$310,110	$102,891
Principal materials	203,056	1,076,000	544,906	282,053	96,279
Fuel	9,841	9,850	71,107	7,937	6,512
Mill supplies		15,500	49,965	6,335	
All other materials	20,200	169,500	80,401	13,786	100
MISCELLANEOUS EXPENSES—Aggregate	$16,399	$446,392	$218,994	$55,458	$50,942
Amount paid for contract work					
Rent	3,220	4,600	10,640	15,104	200
Power and heat	1,690	560	1,645	2,678	
Taxes	3,358	25,187	5,630	2,230	634,112
Insurance	3,971	9,045	4,571	4,029	900
Repairs, ordinary, of buildings and machinery	750	24,600	21,828	5,945	6,015
Interest on cash used in the business	1,000	30,200	32,149	4,438	1,488
All sundries not elsewhere reported	2,500	352,200	172,625	20,944	8,128
GOODS MANUFACTURED—Aggregate value	$590,667	$3,007,000	$1,922,805	$805,357	$249,000
Principal product	515,967	3,007,000	1,858,864	805,157	249,000
All other products, including receipts from custom work and repairing	74,700		63,941	200	

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.	Printing and publishing. (a) — (16 establishments.)	Rubber and elastic goods. — (4 establishments.)	Silk and silk goods. — (3 establishments.)	Slaughtering and meat packing—wholesale. — (4 establishments.)	Steam-fittings and heating apparatus. — (3 establishments.)
CAPITAL EMPLOYED—Aggregate	$303,975	$306,200	$171,963	$108,950	$1,227,022
HIRED PROPERTY—Total	105,185	64,300	26,670		27,600
PLANT—Total	127,750	107,532	60,000	71,000	443,661
Land	20,000		3,000	30,000	60,000
Buildings	20,000	334	2,000	31,500	130,000
Machinery, tools, and implements	87,750	107,198	55,000	9,500	253,661
LIVE ASSETS—Total	71,040	134,368	85,293	37,950	755,761
Raw materials	7,385	59,006	13,500	4,400	41,643
Stock in process and finished product	1,435	35,030	52,850	21,000	289,704
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	62,220	40,332	18,943	12,550	424,414
WAGES PAID—Aggregate	$102,146	$156,048	$18,898	$40,300	$539,068
Average number of hands employed during the year	148	287	117	52	807
Males above 16 years	122	155	25	52	149
Females above 15 years	1	78	48		33
Children			5		
Pieceworkers	25	54	39		625
MATERIALS USED—Aggregate cost	$62,137	$323,695	$72,070	$414,424	$524,387
Principal materials	58,453	209,761	66,325	413,281	508,031
Fuel	2,091	1,978	1,245	143	9,356
Mill supplies	77	250			5,000
All other materials	1,516	111,706	4,500	1,000	2,000
MISCELLANEOUS EXPENSES—Aggregate	$26,743	$15,838	$13,884	$4,320	$43,142
Amount paid for contract work	1,500				
Rent	6,308	5,150	1,700		1,704
Power and heat	300	1,760	1,000		100
Taxes	973	1,065	387	1,150	3,746
Insurance	1,202	2,250	776	770	2,369
Repairs, ordinary, of buildings and machinery	310	3,035		250	18,482
Interest on cash used in the business	250	720	125	150	15,720
All sundries not elsewhere reported	15,900	1,849	9,896	2,000	931
GOODS MANUFACTURED—Aggregate value	$218,175	$567,098	$160,500	$582,818	$1,208,820
Principal product	217,475	501,648	160,000	580,893	1,208,820
All other products, including receipts from custom work and repairing	700	65,450	500	1,925	

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

[7-010]

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CENSUS BULLETIN.

No. 239. WASHINGTON, D. C. October 14, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF MEMPHIS, TENNESSEE.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,
WASHINGTON, D. C., October 11, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Memphis 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; cotton cleaning and rehandling; 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	20
Capital invested	$257,545
Number of hands employed	396
Wages paid	$208,689
Cost of materials used	$359,248
Miscellaneous expenses	$9,502
Value of product at works	$607,729

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	104.35
Capital invested	233.99
Number of hands employed	128.09
Wages paid	215.23
Cost of materials used	140.21
Value of product at works	153.61
Population of city	92.00
Assessed valuation of city	135.68

Decrease of municipal debt less sinking fund, 28.82 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 $373 in 1880 to $515 in 1890, or 38.07 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.

STATISTICS OF MANUFACTURES: 1890.

CITY OF MEMPHIS, TENNESSEE.

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	48	138	$2,313,975	2,268	$845,672	$2,410,341
	1890	71	302	7,985,888	5,569	2,874,526	6,170,670

INDUSTRIES.		Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
				Population.	Assessed valuation.	Municipal debt. (c)
All industries	1880	----------	$4,413,422	33,592	$16,784,314	$4,554,356
	1890	$717,186	11,800,455	64,495	39,553,105	3,241,877

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 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.

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.	Brick and tile. (4 establishments.)	Carriages and wagons. (8 establishments.)	Confectionery. (3 establishments.)	Flouring and grist mill products. (3 establishments.)	Foundry and machine shop products. (7 establishments.)
CAPITAL EMPLOYED—Aggregate	$416,210	$339,302	$113,465	$289,328	$1,308,750
HIRED PROPERTY—Total	7,210	49,620	8,115		12,220
PLANT—Total	301,000	125,640	81,200	149,328	662,113
Land	122,000	55,000	47,000	19,828	210,000
Buildings	46,000	46,365	27,000	52,500	192,000
Machinery, tools, and implements	133,000	24,275	7,200	77,000	260,113
LIVE ASSETS—Total	108,000	164,042	24,150	140,000	634,417
Raw materials	3,500	49,650	16,100	49,500	82,500
Stock in process and finished product	25,000	30,875	5,050	43,000	193,550
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	79,500	83,517	3,000	47,500	358,367
WAGES PAID—Aggregate	$129,330	$128,575	$24,034	$38,384	$403,088
Average number of hands employed during the year	332	213	63	49	713
Males above 16 years	332	209	52	44	710
Females above 16 years			8		3
Children					
Pieceworkers		4	3	5	
MATERIALS USED—Aggregate cost	$42,800	$158,230	$105,670	$834,950	$492,825
Principal materials	42,800	154,854	86,970	775,850	425,222
Fuel		2,640	1,800	8,100	15,278
Mill supplies				500	3,000
All other materials		736	16,900	50,500	49,325
MISCELLANEOUS EXPENSES—Aggregate	$20,005	$14,100	$14,685	$17,825	$58,501
Amount paid for contract work					
Rent	550	4,180	600		1,130
Power and heat					
Taxes	2,670	5,253	1,610	1,425	11,885
Insurance	2,285	643	535	5,300	9,835
Repairs, ordinary, of buildings and machinery	8,500	285	415	4,100	3,300
Interest on cash used in the business	6,000	1,734		5,900	17,100
All sundries not elsewhere reported		2,005	11,525	1,200	15,251
GOODS MANUFACTURED—Aggregate value	$267,250	$350,663	$180,960	$935,250	$1,243,924
Principal product	231,250	316,353	176,360	935,250	1,231,924
All other products, including receipts from custom work and repairing	36,000	34,310	4,600		12,000

a To avoid disclosure of the 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.	Lumber and other mill products from logs or bolts. (5 establishments.)	Lumber—planing mill products. (a) (5 establishments.)	Oil, cotton seed and cake. (8 establishments.)	Saddlery and harness. (3 establishments.)	Tobacco, cigars and cigarettes. (6 establishments.)
CAPITAL EMPLOYED—Aggregate	$424,653	$560,125	$1,511,632	$110,235	$53,391
HIRED PROPERTY—Total	26,310	3,125	386,320	61,435	25,915
PLANT—Total	173,500	271,000	767,810	3,550	1,990
Land	67,000	152,000	107,300		200
Buildings	43,000	58,500	114,100		400
Machinery, tools, and implements	63,500	60,500	546,410	3,550	1,390
LIVE ASSETS—Total	224,843	286,000	357,502	45,250	25,486
Raw material	70,500	59,000	56,791	20,800	10,650
Stock in process and finished product	95,500	87,000	234,336	22,600	6,600
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	58,843	140,000	66,375	1,850	8,236
WAGES PAID—Aggregate	$137,176	$214,067	$150,166	$45,950	$40,790
Average number of hands employed during the year	323	302	718	115	74
Males above 16 years	312	291	715	40	19
Females above 15 years			3		1
Children					4
Pieceworkers	11	11		75	50
MATERIALS USED—Aggregate cost	$423,750	$398,372	$988,497	$230,200	$42,301
Principal materials	403,000	393,500	919,102	228,100	38,940
Fuel		2,300	21,134	600	
Mill supplies	13,750	1,100	23,097		
All other materials	7,000	1,472	25,164	1,500	3,361
MISCELLANEOUS EXPENSES—Aggregate	$26,121	$17,585	$158,495	$14,186	$10,797
Amount paid for contract work					
Rent	2,400	300	30,832	4,640	1,932
Power and heat	1,000				
Taxes	3,200	4,040	11,177	825	7,927
Insurance	8,046	3,615	27,601	641	163
Repairs, ordinary, of buildings and machinery	6,598	2,150	52,693	350	
Interest on cash used in the business	4,877	80	13,297	200	50
All sundries not elsewhere reported		7,400	22,595	7,530	725
GOODS MANUFACTURED—Aggregate value	$705,100	$757,633	$1,482,198	$367,700	$112,349
Principal product	701,000	756,133	1,482,050	365,200	112,349
All other products, including receipts from custom work and repairing	4,100	1,500	148	2,500	

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

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CENSUS BULLETIN.

No. 240. WASHINGTON, D. C. October 14, 1892.

AGRICULTURE.—CEREAL PRODUCTION IN 1889.

TENNESSEE, NORTH CAROLINA, SOUTH CAROLINA, VIRGINIA, WEST VIRGINIA.

AVERAGE YIELD OF CEREALS PER ACRE.

STATES.	Barley.	Buckwheat.	Indian corn.	Oats.	Rye.	Wheat.
Tennessee	17.81	5.80	22.80	12.51	6.26	9.46
North Carolina	11.66	7.01	10.92	8.33	4.90	6.44
South Carolina	13.70	7.26	10.23	9.80	4.19	5.79
Virginia	19.98	7.97	16.98	11.49	7.63	10.72
West Virginia	16.52	8.80	23.16	16.30	7.83	10.41

SUMMARY OF CEREAL PRODUCTION.

TENNESSEE.

COUNTIES.	BARLEY.		BUCKWHEAT.		INDIAN CORN.		OATS.		RYE.		WHEAT.	
	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.
Total	3,585	63,866	1,231	7,143	2,791,324	63,635,350	588,138	7,355,100	26,443	165,621	877,361	8,300,789
Anderson			2	10	16,962	308,378	10,752	106,584	3	8	4,215	26,698
Bedford	95	3,185	1	8	61,480	1,735,572	10,962	157,877	1,978	15,950	39,168	489,007
Benton	18	75			27,241	562,008	2,937	27,130	38	347	2,365	13,496
Bledsoe			7	52	17,387	294,702	3,069	26,721	286	1,069	3,569	24,336
Blount	27	407	2	20	31,598	632,841	11,464	130,528	64	360	18,276	130,804
Bradley			11	30	24,221	430,361	8,073	86,256	28	91	7,314	58,538
Campbell					19,821	309,878	9,775	93,249	62	384	3,144	20,385
Cannon	8	188			29,721	874,683	3,504	52,655	816	5,124	12,332	115,241
Carroll			6	10	43,720	969,163	3,590	41,747	11	81	8,079	61,303
Carter	117	1,430	313	1,526	12,398	240,962	6,305	82,712	305	2,093	7,149	58,174
Cheatham					18,188	428,177	3,983	74,900	26	188	2,627	26,100
Chester					15,520	296,579	2,982	28,366	18	90	1,148	6,337
Claiborne			1	6	29,729	542,825	12,379	122,528	22	119	6,858	38,483
Clay					17,375	394,415	3,890	47,652	106	345	2,098	11,154
Cocke	4	49	10	50	30,974	635,321	6,770	62,701	162	911	16,592	114,509
Coffee			5	38	27,069	649,749	4,952	57,530	1,046	6,493	8,167	77,721
Crockett			2	20	25,617	570,071	2,503	38,811	13	90	6,549	70,744
Cumberland			19	94	7,700	99,744	2,170	17,421	465	1,716	224	1,422
Davidson	1,434	27,943			41,731	1,229,672	8,774	176,132	404	3,228	14,198	209,328
Decatur					17,933	403,039	2,442	24,233	10	51	1,043	6,547
Dekalb	81	1,083			32,094	901,345	3,448	34,541	736	4,739	12,670	104,947
Dickson			2	13	24,483	598,267	8,416	101,846	101	426	3,871	28,890
Dyer					28,871	812,120	2,627	47,926	16	131	11,021	150,794
Fayette					47,767	643,809	1,157	15,012	14	155	183	1,836
Fentress			11	64	10,383	149,681	2,942	21,925	400	2,057	722	3,274
Franklin	4	52	3	16	37,759	810,173	6,208	73,057	228	1,115	15,472	162,256
Gibson	4	63			56,049	1,248,860	4,748	68,354	43	318	16,509	164,957
Giles	5	80	10	80	70,775	1,743,314	10,318	158,005	998	6,891	12,008	107,191
Grainger			3	24	26,859	501,466	10,779	109,393	25	169	9,698	60,899
Greene	74	882	51	294	39,375	820,961	11,447	117,504	73	349	33,406	219,188

SUMMARY OF CEREAL PRODUCTION—Continued.

TENNESSEE—Continued.

COUNTIES.	BARLEY.		BUCKWHEAT.		INDIAN CORN.		OATS.		RYE.		WHEAT.	
	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.
Grundy					5,691	93,135	992	9,749	19	136	912	6,894
Hamblen	19	414	51	464	14,785	320,256	4,876	55,874	28	203	9,193	70,301
Hamilton			6	32	23,044	503,838	6,943	85,275	159	753	1,465	11,158
Hancock	8	43			16,651	330,474	6,156	57,731	83	455	4,772	33,141
Hardeman	2	15	3	30	37,938	601,043	2,275	23,798	24	253	486	3,719
Hardin	3	47			36,105	886,089	3,775	45,303	41	199	1,899	11,419
Hawkins	2	20	19	75	33,630	722,848	10,648	127,346	35	244	17,930	126,436
Haywood					33,022	626,702	2,198	29,635	66	403	1,862	16,127
Henderson	2	30			34,048	702,623	4,834	44,495	115	822	1,536	8,748
Henry	8	100			43,921	981,506	4,417	52,953	109	1,074	11,253	120,788
Hickman	1	5	3	19	28,634	709,286	5,535	78,994	200	1,458	3,282	22,003
Houston					7,769	193,817	1,690	18,735	6	32	556	5,086
Humphreys					24,748	739,562	4,233	56,680	62	243	2,854	24,137
Jackson	23	235	1	2	34,989	915,508	5,699	67,270	631	4,364	6,117	42,193
James					11,542	228,108	3,802	44,154	19	36	2,759	20,680
Jefferson	5	50	8	48	32,501	717,892	8,797	98,333	38	303	19,381	160,415
Johnson			105	453	9,604	169,011	4,868	69,182	1,375	8,856	5,405	39,031
Knox	104	1,757	9	48	89,890	846,405	21,549	273,172	155	1,007	16,841	146,862
Lake					10,510	301,210	103	1,090			1,296	34,183
Lauderdale			22	174	24,500	661,295	1,856	28,425	9	121	3,629	47,009
Lawrence	20	176	15	143	21,264	388,915	2,749	27,762	236	1,460	4,982	33,416
Lewis	12	250			5,225	103,785	1,101	12,630	40	185	624	3,960
Lincoln	14	103	40	380	59,127	1,710,217	6,991	104,964	1,206	7,491	25,893	284,322
Loudon	30	850	6	60	18,555	375,348	7,297	91,192	41	347	12,567	123,851
McMinn					34,748	614,519	12,100	128,971	51	243	16,857	152,204
McNairy			23	250	28,177	511,055	3,708	40,476	7	35	1,243	6,955
Macon					21,431	464,356	6,210	67,188	135	648	4,442	24,021
Madison	90	125	14	44	40,461	756,012	3,464	33,480	83	354	2,191	14,334
Marion	17	215			19,058	422,760	3,718	55,047	26	207	525	4,499
Marshall	38	638			48,903	1,403,592	8,884	136,646	1,284	9,150	20,724	196,877
Maury	214	4,836	21	225	82,093	2,363,414	14,642	279,068	1,345	9,185	26,711	346,716
Meigs			1	2	21,913	417,984	9,049	98,415	22	81	6,860	51,656
Monroe	6	70			33,695	621,370	8,765	89,173	189	1,035	20,002	168,664
Montgomery	41	955	6	45	47,119	1,195,160	10,257	153,421	252	1,846	11,873	132,569
Moore	2	25			14,963	457,806	2,114	27,386	1,188	8,862	6,784	73,169
Morgan			20	84	8,986	122,497	3,295	29,136	760	3,229	245	1,470
Obion	7	65	58	175	49,513	1,489,720	3,666	59,843	33	220	28,387	465,055
Overton	40	150	10	50	28,932	516,710	10,177	88,282	211	1,010	6,558	27,889
Perry			19	225	14,721	359,788	2,423	30,887	155	944	1,826	14,898
Pickett			1	5	11,893	221,794	3,310	24,802	22	55	3,633	14,992
Polk					14,023	228,117	3,828	37,939	336	1,041	2,725	18,009
Putnam	4	25			27,265	589,428	8,349	76,089	632	3,041	6,889	37,663
Rhea			12	83	17,192	322,855	5,542	66,623	64	300	2,761	23,406
Roane	5	40	7	80	25,976	435,049	12,736	130,660	98	629	5,909	37,204
Robertson			1	10	39,865	949,120	12,048	181,679	94	279	19,487	233,603
Rutherford	86	1,177			71,427	1,925,083	10,668	171,333	366	2,466	24,952	270,937
Scott			1	6	11,839	176,968	3,977	29,668	234	1,456	55	414
Sequatchie	8	170			7,155	142,904	548	6,780	46	198	728	6,467
Sevier	4	15			31,094	594,352	8,854	92,799	175	689	16,076	108,286
Shelby	13	75	6	30	45,726	876,040	1,639	26,783	51	635	278	2,185
Smith	22	380			42,261	1,271,853	8,158	132,127	740	4,500	14,786	122,857
Stewart	4	100			27,584	731,906	3,147	48,142	32	150	3,240	35,219
Sullivan	8	99	127	708	23,050	503,112	10,619	122,925	141	1,138	21,432	148,933
Sumner	213	4,677	6	25	46,500	1,206,094	12,477	192,386	915	5,577	16,904	175,321
Tipton	14	156			29,396	671,308	2,047	30,873	12	35	4,156	52,070
Trousdale	45	1,200			15,095	423,640	3,893	69,594	131	987	5,316	42,060
Unicoi	14	140	10	59	4,615	64,568	2,651	28,673	255	1,382	2,121	13,494
Union			2	9	23,546	405,819	9,913	102,837	12	40	5,772	31,543
Van Buren					7,388	134,515	1,245	11,853	91	363	1,830	10,813
Warren					33,195	662,038	7,784	97,681	497	2,578	8,898	62,111
Washington	78	1,044	127	642	21,155	426,210	9,161	111,722	97	657	21,634	167,797
Wayne					25,365	531,605	4,033	53,534	237	1,289	2,482	16,526
Weakley	10	178			51,159	1,157,618	4,383	61,519	23	74	14,291	146,981
White			1	5	29,516	586,178	8,090	83,506	514	2,512	6,367	39,636
Williamson	200	3,377	10	90	52,179	1,291,878	5,125	84,330	631	4,204	38,460	527,615
Wilson	278	4,402	1	8	62,659	1,780,547	14,690	249,906	1,062	6,764	33,250	313,290

SUMMARY OF CEREAL PRODUCTION—Continued.

NORTH CAROLINA.

COUNTIES.	BARLEY.		BUCKWHEAT.		INDIAN CORN.		OATS.		RYE.		WHEAT.	
	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.
Total	302	3,521	1,800	12,621	2,360,627	25,783,623	541,851	4,512,762	56,496	276,609	666,509	4,292,935
Alamance					23,870	286,050	8,647	68,748	260	1,457	18,657	115,154
Alexander			3	17	18,892	216,749	6,114	42,113	587	2,153	10,922	65,821
Alleghany			186	988	9,188	142,369	3,858	46,972	2,991	18,538	2,138	13,626
Anson	2	20	2	15	27,558	214,309	9,668	76,359	322	1,101	5,419	27,350
Ashe			254	1,487	16,995	252,274	5,402	66,947	4,555	32,086	6,005	44,567
Beaufort			18	200	19,350	221,659	2,523	27,227	1	20	86	475
Bertie	3	25			35,868	270,233	2,862	24,986	45	376	100	1,141
Bladen			5	35	24,102	205,723	367	2,693	40	185	5	40
Brunswick					7,278	81,519	159	1,315			2	10
Buncombe	10	83	103	838	31,618	597,407	12,336	128,369	1,739	8,153	11,469	74,017
Burke			2	13	22,976	336,498	3,580	27,879	1,103	5,213	11,414	75,338
Cabarrus	2	27			25,010	309,449	10,275	80,580	107	413	17,345	101,447
Caldwell	1	4	9	67	20,130	275,268	4,015	36,777	534	2,646	9,275	65,103
Camden					22,634	244,353	1,157	9,585			30	204
Carteret					6,618	62,938	259	2,332	59	315	28	179
Caswell					20,426	233,116	9,919	65,690	77	313	10,259	69,913
Catawba					24,275	317,544	7,600	71,875	230	1,204	20,849	163,977
Chatham	14	172	1	7	40,346	438,909	16,162	116,267	131	621	30,148	171,274
Cherokee					16,722	252,824	3,444	26,381	1,580	7,228	1,459	6,925
Chowan					12,941	133,330	879	8,638			122	963
Clay			2	16	9,139	139,629	1,842	15,349	362	1,768	3,107	14,707
Cleveland					32,170	436,857	8,291	55,591	139	700	17,269	109,167
Columbus					23,841	209,775	563	4,354	169	563	4	26
Craven					15,834	156,737	1,114	11,012	188	1,146	88	556
Cumberland	3	30			36,659	295,062	1,677	15,044	981	2,972	313	1,963
Currituck					22,243	257,066	806	7,892				
Dare					624	12,336	2	25				
Davidson	31	250	10	80	31,848	389,860	13,023	107,434	293	1,638	32,582	235,777
Davie	1	13			21,107	284,318	10,726	79,546	1,081	5,094	16,184	102,004
Duplin			11	40	36,756	239,192	724	8,007	544	2,057	469	2,910
Durham					15,291	168,628	5,722	45,649	78	518	7,343	48,374
Edgecombe			1	5	40,490	266,855	12,758	101,385	150	868	1,132	6,767
Forsyth	2	40	2	7	18,558	248,436	10,747	89,002	161	1,082	16,700	132,865
Franklin					30,237	268,295	6,756	45,433	88	462	5,326	29,915
Gaston			1	10	24,949	332,220	7,504	60,465	110	496	15,703	102,196
Gates					20,348	194,554	1,187	15,256	15	200	21	150
Graham					6,108	89,573	1,108	9,160	376	1,624	146	679
Granville	5	50	14	74	26,917	336,307	11,317	91,763	92	794	8,992	66,319
Greene					25,258	215,783	4,688	39,880	408	2,758	2,693	15,896
Guilford	69	1,313	2	4	34,598	415,916	14,969	112,155	300	1,452	28,183	171,389
Halifax	8	41	35	246	42,005	251,138	8,959	70,530	156	898	1,310	8,477
Harnett			8	59	26,842	191,880	1,783	10,208	899	2,835	2,161	10,792
Haywood			170	1,232	18,901	365,921	5,591	58,407	744	4,842	8,320	53,873
Henderson			15	131	20,751	324,245	3,807	36,955	3,800	16,820	633	4,250
Hertford					22,466	197,930	2,342	22,425	111	555	451	3,839
Hyde					15,664	202,735	2,117	34,371			82	760
Iredell	2	25			40,211	506,787	15,632	105,279	402	2,016	22,857	153,445
Jackson	2	50	18	141	16,322	266,015	3,892	31,361	957	4,823	4,006	21,737
Johnston					53,515	422,589	4,772	36,884	642	2,393	3,637	26,650
Jones					19,569	149,720	1,155	11,556	40	195	77	459
Lenoir					29,494	261,657	3,002	33,020	518	2,414	2,460	15,461
Lincoln			8	41	20,326	263,444	4,759	38,687	91	411	13,249	94,062
McDowell			7	93	19,622	302,307	2,318	17,575	1,568	7,702	4,619	29,700
Macon	11	120	8	91	18,427	306,122	3,456	34,278	986	4,885	5,798	28,997
Madison			25	169	21,920	413,721	7,175	77,900	133	914	10,580	73,339
Martin			4	30	26,563	174,565	3,078	24,308	12	102	206	1,581
Mecklenburg	7	140	3	7	44,795	514,068	14,244	124,834	88	465	14,033	82,752
Mitchell	10	48	105	817	13,749	214,319	6,682	77,827	689	4,028	3,815	23,492
Montgomery	2	25			15,856	162,131	7,562	61,273	99	315	10,203	51,435
Moore					27,797	216,303	7,114	45,927	3,269	9,280	12,869	59,774
Nash			21	210	34,270	239,787	4,612	35,753	89	444	2,254	16,446
New Hanover	5	75			929	9,692	52	399	5	40	9	100
Northampton					39,973	227,473	5,831	50,498	231	1,487	883	5,957
Onslow			60	450	23,793	189,686	105	1,228	7	345		
Orange			1	10	20,325	251,648	9,736	77,717	59	302	15,538	109,378
Pamlico					9,360	159,689	1,305	13,987			10	65
Pasquotank					26,793	300,780	2,395	21,758	25	100	318	1,695
Pender					17,832	159,174	238	2,639	22	137		
Perquimans					23,428	232,653	2,367	25,060	13	50	237	1,435
Person	4	50			18,776	231,720	7,346	50,578	14	47	10,370	74,980
Pitt			10	30	46,904	419,097	6,775	67,774	289	1,725	1,979	13,302
Polk					12,087	169,766	1,415	9,592	697	2,723	2,130	10,309
Randolph	100	867	13	109	35,398	476,454	11,842	98,335	88	559	32,050	202,465
Richmond					36,237	355,906	5,950	62,763	867	3,355	3,278	18,312
Robeson			8	75	58,345	504,844	3,785	30,966	736	2,367	104	827

SUMMARY OF CEREAL PRODUCTION—Continued.

NORTH CAROLINA—Continued.

COUNTIES.	BARLEY.		BUCKWHEAT.		INDIAN CORN.		OATS.		RYE.		WHEAT.	
	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.
Rockingham			11	105	22,558	305,053	9,504	80,619	203	1,247	12,719	104,352
Rowan			3	27	35,571	481,150	16,412	130,292	91	415	24,604	180,198
Rutherford					33,256	450,660	5,950	37,538	606	2,954	11,349	65,807
Sampson	1	3			61,294	492,629	796	8,112	673	2,583	679	5,086
Stanly					20,178	236,348	13,532	97,306	101	570	16,418	91,013
Stokes					20,874	290,734	7,469	63,437	821	4,173	12,738	97,151
Surry	2	40	12	50	25,765	354,343	8,227	64,942	3,612	15,192	11,147	67,208
Swain			3	20	8,569	127,825	1,260	9,592	183	1,033	1,526	8,286
Transylvania	4	8	18	98	12,167	187,168	891	9,523	1,874	8,559	263	2,193
Tyrrell					6,125	51,700	966	10,316			2	15
Union			2	2	29,691	327,731	17,239	111,115	21	99	13,872	67,602
Vance			3	15	17,895	181,144	4,842	34,408	56	375	3,018	24,713
Wake			64	322	47,722	423,969	14,213	101,140	377	1,395	12,088	66,267
Warren			7	28	22,172	178,228	6,098	54,139	122	698	3,447	25,028
Washington					13,695	126,840	1,856	16,068	2	20	24	81
Watauga			454	3,543	10,407	156,079	3,607	50,774	2,224	16,226	2,502	18,566
Wayne					46,293	379,206	4,149	43,647	1,022	3,690	5,234	31,043
Wilkes			19	66	40,760	515,447	8,131	57,086	4,914	20,651	11,924	61,502
Wilson					29,807	228,323	3,928	34,413	201	1,005	2,365	20,126
Yadkin			4	21	23,833	319,963	8,819	72,716	812	4,720	11,965	76,744
Yancey	1	2	55	480	12,978	232,507	6,018	86,783	339	2,916	5,488	38,874

SOUTH CAROLINA.

Total	688	9,428	65	472	1,345,990	13,770,417	308,056	3,019,119	4,129	17,303	115,510	658,351
Abbeville	121	1,993			48,457	557,132	18,132	164,642	23	171	6,756	39,540
Aiken	60	250			59,314	520,021	5,022	74,709	377	1,300	800	3,463
Anderson	59	874			58,055	547,217	19,288	163,231	101	593	14,558	81,818
Barnwell					93,024	860,396	11,644	135,830	249	1,517	68	364
Beaufort					14,045	194,883	356	3,415				
Berkeley					26,763	296,528	2,012	27,497	1	3		
Charleston					1,591	20,038	122	1,580				
Chester	1	10			36,288	314,837	9,235	74,578	62	237	3,392	16,011
Chesterfield					29,338	203,509	4,680	36,291	384	959	1,315	5,214
Clarendon					34,755	340,284	3,497	47,638	2	10	20	121
Colleton	12	50			37,191	399,335	5,331	57,379	12	77	4	50
Darlington			1	5	38,539	383,734	8,357	95,962	156	575	188	1,352
Edgefield	92	913			68,000	707,099	33,645	363,224	65	376	4,782	26,674
Fairfield	31	182			34,115	318,301	6,489	74,364	58	137	801	4,636
Florence					30,968	273,981	5,281	53,025	286	1,151	56	332
Georgetown					5,907	56,701	280	5,889				
Greenville	49	789	34	210	53,528	668,355	15,473	125,117	918	4,025	9,704	58,222
Hampton					37,838	350,733	7,508	87,057	36	280	11	75
Horry			1	5	22,055	200,378	810	9,206	5	15	2	18
Kershaw			27	243	21,606	190,415	3,644	33,524	57	249	251	1,319
Lancaster	2	3			24,132	230,250	6,870	59,197	23	106	1,346	6,212
Laurens	80	1,678			36,637	362,557	15,860	124,815	49	241	6,281	33,585
Lexington	6	120			39,246	336,230	11,143	127,086	130	494	7,078	34,954
Marion					40,662	401,788	9,657	107,169	161	527	74	643
Marlboro	2	20			29,702	370,274	5,916	80,015	32	124	404	3,925
Newberry	122	2,023			32,575	326,556	14,639	138,670	34	192	6,577	41,625
Oconee	1	6			24,658	331,824	5,916	50,447	271	1,009	3,733	20,800
Orangeburg	5	70			79,846	859,015	11,326	133,149	218	910	373	2,260
Pickens	18	200			28,041	381,489	6,486	51,836	252	1,211	5,699	37,706
Richland			2	9	23,849	280,008	5,004	59,765			440	2,709
Spartanburg	3	50			64,515	735,334	17,417	129,399	88	424	19,837	116,044
Sumter					51,164	537,345	6,940	83,320	59	295	16	142
Union	20	157			33,151	341,841	10,881	99,915	13	70	6,180	32,760
Williamsburg					37,134	288,647	2,527	22,031	3	9	2	27
York	4	40			49,301	583,382	16,668	136,147	4	16	14,762	85,720

VIRGINIA.

Total	2,051	40,982	5,170	41,199	1,599,501	27,154,633	495,395	5,693,875	52,063	397,394	736,997	7,897,800
Accomac			1	13	37,671	488,745	3,701	48,065			329	3,645
Albemarle			10	46	30,881	634,257	15,257	146,288	70	346	13,642	112,879
Alexandria			1	9	833	22,630	293	8,502	130	1,290	191	3,721
Alleghany	4	25	25	132	4,019	88,414	2,247	35,875	30	190	2,720	26,052
Amelia			1	10	11,776	103,944	3,804	22,259	13	95	4,827	41,408
Amherst			1	3	16,294	297,641	12,476	143,722	93	870	9,156	89,075
Appomattox	1	3	1	12	9,598	123,239	7,040	58,136	10	65	5,153	46,841
Augusta	477	12,652	100	1,292	31,125	903,332	9,184	173,484	1,846	21,022	52,127	779,595
Bath	10	200	160	1,727	4,315	95,231	2,171	38,259	149	1,151	2,520	23,392
Bedford			11	65	29,513	613,431	22,253	251,210	232	2,586	23,088	203,194

SUMMARY OF CEREAL PRODUCTION—Continued.

VIRGINIA—Continued.

COUNTIES.	BARLEY.		BUCKWHEAT.		INDIAN CORN.		OATS.		RYE.		WHEAT.	
	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.
Bland			92	549	5,382	111,053	2,342	36,915	681	4,684	3,304	29,387
Botetourt	1	10	21	73	11,179	229,187	6,162	95,985	75	863	13,105	140,629
Brunswick	2	20			25,204	193,229	6,600	40,920	15	89	4,982	47,237
Buchanan			1	8	7,922	137,861	2,851	26,182	225	1,232	411	2,745
Buckingham			8	65	11,881	185,561	5,744	45,017	51	248	6,836	55,836
Campbell					16,490	263,945	13,744	151,344	33	301	9,340	88,888
Caroline	10	40	1	5	40,337	391,404	1,899	14,013	197	1,175	5,425	36,128
Carroll			285	1,865	15,489	204,649	6,897	74,853	5,845	32,953	4,307	30,070
Charles City					7,111	83,012	3,151	35,369	5	30	2,349	27,779
Charlotte					12,939	139,079	4,585	40,224	20	122	5,991	59,266
Chesterfield			29	151	11,097	113,293	7,151	63,531	136	699	2,758	29,621
Clarke	4	70			14,589	473,257	1,215	23,718	365	3,144	19,012	273,801
Craig			76	530	3,890	73,485	1,842	27,001	685	5,137	3,036	25,083
Culpeper			7	85	20,522	458,461	4,921	64,419	164	1,608	11,710	120,145
Cumberland					12,425	153,822	4,285	34,577	9	70	6,002	48,976
Dickenson			31	140	7,029	110,870	2,957	28,675	443	2,254	614	3,116
Dinwiddie	6	60	3	16	19,133	154,408	6,436	49,137	10	77	3,235	30,990
Elizabeth City					2,930	35,085	481	6,115	3	20		
Essex					20,217	175,531	1,113	9,489	48	165	3,847	26,652
Fairfax			146	1,197	15,732	383,679	4,074	62,943	2,323	20,137	4,224	52,592
Fauquier	32	645	15	60	39,443	985,229	8,316	110,824	2,294	15,821	18,261	191,463
Floyd	4	90	552	3,078	14,852	242,061	10,342	142,301	3,369	22,455	7,746	58,162
Fluvanna			4	50	10,629	159,610	6,012	40,237	72	421	4,501	27,525
Franklin			18	193	26,430	477,476	16,313	189,308	794	5,392	18,204	140,120
Frederick	27	582	837	4,300	18,370	461,435	3,634	64,818	2,700	20,594	24,002	320,761
Giles	1	10	28	189	9,227	214,681	2,348	31,944	1,074	8,489	6,113	55,487
Gloucester	8	78	8	100	16,351	191,966	2,317	23,887	4	40	999	6,699
Goochland			7	35	13,932	135,319	3,574	26,919	61	258	3,536	25,084
Grayson	17	185	165	1,019	14,780	283,373	5,765	94,840	3,872	28,797	9,910	84,072
Greene			18	96	6,802	142,575	2,889	26,038	439	3,221	5,006	40,907
Greensville	2	12	1	7	12,810	67,347	2,123	16,398	11	55	136	880
Halifax	1	30	90	1,174	32,557	367,816	17,892	144,054	41	312	17,037	121,921
Hanover	1	25	15	195	26,541	321,678	9,520	68,940	127	1,204	7,368	54,267
Henrico	6	60	1	10	6,747	113,778	3,650	60,687	190	1,689	2,052	34,511
Henry					13,401	221,290	6,820	69,378	469	2,602	7,754	75,127
Highland			966	8,841	3,126	65,862	1,135	18,353	493	4,745	2,727	31,152
Isle of Wight					15,408	162,640	2,003	24,619	20	100	7	125
James City					5,543	76,368	1,778	21,394			170	1,682
King and Queen					17,122	149,891	1,011	7,170	98	477	2,131	13,938
King George			1	2	19,886	238,598	1,393	11,301	93	438	2,063	14,700
King William			6	60	13,392	118,766	1,980	8,308	223	624	4,643	33,732
Lancaster					7,663	103,977	550	6,736	13	112	897	10,739
Lee	2	15	3	9	29,431	680,606	11,925	152,338	316	2,171	9,183	65,695
Loudoun			38	204	40,299	1,319,287	4,501	69,380	1,830	13,137	29,285	338,195
Louisa	31	320	3	20	18,497	247,718	6,501	46,152	118	578	5,738	40,930
Lunenburg					12,310	129,314	4,940	41,373	14	58	3,991	41,288
Madison					15,401	365,397	3,969	29,244	668	4,887	10,653	91,302
Mathews					9,232	124,537	773	9,355	22	110	69	755
Mecklenburg	9	81	5	40	28,977	255,869	11,352	90,300	26	663	9,064	76,500
Middlesex					8,003	112,003	651	6,535	9	40	1,361	11,717
Montgomery			75	468	12,592	298,074	5,045	74,618	529	3,688	8,558	87,284
Nansemond			4	30	17,312	177,893	1,181	11,383	20	160		
Nelson			82	350	14,420	288,298	5,430	56,668	320	2,084	8,615	78,127
New Kent					6,052	83,350	2,209	21,327	45	275	793	6,360
Norfolk					35,331	432,215	948	11,356	8	200		
Northampton					12,496	146,408	2,090	22,255	21	100		
Northumberland			2	20	11,606	195,531	281	4,852			3,009	41,364
Nottoway			5	20	10,019	92,474	4,250	30,694	36	232	3,708	33,405
Orange	209	824			16,551	361,977	3,900	41,246	167	1,016	9,410	95,186
Page	38	674	38	176	9,401	223,286	909	14,982	1,792	14,574	11,963	159,935
Patrick	2	37	105	868	15,026	231,303	6,892	74,240	1,918	12,722	3,676	26,644
Pittsylvania					42,584	645,295	21,895	216,264	265	1,664	22,888	189,438
Powhatan	6	60			7,863	90,185	3,631	25,578	14	123	3,659	27,316
Prince Edward					10,595	106,011	5,478	43,050	10	25	5,852	58,481
Prince George	5	50			12,266	124,496	6,331	57,727			812	8,432
Princess Anne	2	40	3	29	25,617	357,865	876	12,207	94	1,155	3	50
Prince William	12	159	22	197	14,391	275,650	4,122	53,521	501	3,742	5,793	55,599
Pulaski	8	150	179	4,631	8,803	242,305	2,795	53,817	557	3,852	5,197	56,915
Rappahannock			17	245	12,074	308,494	3,118	38,309	917	5,869	5,897	54,375
Richmond					10,780	128,932	586	6,511	118	668	2,984	26,368
Roanoke	3	30	47	221	8,951	226,145	4,974	75,863	285	1,973	11,357	146,221
Rockbridge	232	4,216	83	449	19,286	492,155	5,067	73,268	491	3,769	25,204	297,476
Rockingham	675	15,192	215	1,742	31,215	946,719	4,223	77,615	3,185	30,705	49,381	778,646
Russell	8	100	21	105	20,158	447,874	7,933	98,122	634	4,953	7,675	61,620
Scott			31	202	31,491	587,070	13,482	132,722	157	861	8,301	63,150

SUMMARY OF CEREAL PRODUCTION—Continued.

VIRGINIA—Continued.

COUNTIES.	BARLEY.		BUCKWHEAT.		INDIAN CORN.		OATS.		RYE.		WHEAT.	
	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.
Shenandoah	189	4,146	102	770	19,449	503,868	2,270	41,949	2,309	26,093	27,447	424,463
Smyth	3	75	13	86	11,282	310,163	5,574	108,298	367	3,178	8,436	87,136
Southampton	.....	.....	.....	.....	29,805	216,568	1,398	16,886	296	1,311	20	200
Spottsylvania	.....	.....	1	15	16,025	219,872	3,339	24,577	81	379	5,803	47,750
Stafford	.....	.....	55	589	12,476	181,896	2,557	21,167	46	199	3,287	28,825
Surry	.....	.....	.....	.....	10,073	106,681	1,982	21,323	55	429	101	1,297
Sussex	.....	.....	.....	.....	16,730	106,958	3,212	25,977	42	340	29	116
Tazewell	.....	.....	32	224	16,691	425,297	8,201	162,015	928	8,783	5,351	50,282
Warren	.....	.....	17	134	8,759	235,266	1,145	16,561	909	7,227	9,735	113,539
Warwick	.....	.....	.....	.....	2,150	30,755	239	3,855	.....	.....	12	250
Washington	2	6	118	951	25,248	580,947	13,836	227,711	241	1,899	15,670	141,560
Westmoreland	.....	.....	.....	.....	13,991	165,669	1,125	11,820	41	238	4,513	39,650
Wise	.....	.....	4	37	10,401	172,507	4,156	36,132	290	1,565	1,035	6,113
Wythe	1	10	107	965	12,716	314,725	6,816	128,900	997	9,160	10,248	133,951
York	.....	.....	.....	.....	8,207	95,266	801	9,151	11	70	207	2,154

WEST VIRGINIA.

Total	326	5,387	13,696	120,469	592,763	13,730,506	180,815	2,946,658	14,962	117,113	349,016	3,634,197
Barbour	1	10	319	2,703	9,873	220,284	3,411	52,055	18	124	5,089	51,179
Berkeley	102	1,728	108	847	19,222	560,019	1,607	31,668	843	7,285	24,925	335,914
Boone	.....	.....	6	44	10,481	190,252	1,971	18,548	24	130	1,309	7,355
Braxton	.....	.....	26	146	12,623	291,425	1,520	15,385	21	227	7,456	59,735
Brooke	16	432	2	12	4,160	137,354	2,576	86,750	53	777	2,904	49,057
Cabell	1	10	6	29	15,137	363,221	3,265	50,188	32	235	6,217	67,194
Calhoun	.....	.....	11	79	8,225	210,180	1,599	20,341	57	449	3,851	33,088
Clay	.....	.....	7	36	5,315	98,624	1,453	18,851	13	121	1,367	9,890
Doddridge	1	10	23	121	9,755	223,095	815	12,138	36	291	6,530	57,677
Fayette	2	16	68	481	9,345	163,252	6,293	79,008	13	127	2,275	16,709
Gilmer	2	32	17	99	8,994	257,681	720	10,482	8	61	5,350	46,716
Grant	1	11	210	1,977	6,136	194,898	2,530	34,339	388	2,656	4,053	37,439
Greenbrier	.....	.....	259	1,412	13,413	289,200	8,688	161,541	396	3,159	7,646	95,131
Hampshire	.....	.....	2,228	14,796	11,755	192,153	5,631	78,619	3,885	29,989	8,914	79,906
Hancock	8	100	47	453	2,594	77,714	2,645	74,696	116	1,114	2,254	31,155
Hardy	6	48	668	4,664	7,116	137,335	2,180	31,626	1,614	12,276	3,797	37,067
Harrison	.....	.....	10	88	13,421	419,589	3,614	64,713	84	734	10,521	119,089
Jackson	1	25	52	524	17,656	401,648	3,505	53,893	88	649	11,421	106,725
Jefferson	30	709	1	12	18,343	581,560	514	12,412	305	2,728	27,578	412,701
Kanawha	.....	.....	6	75	24,622	508,529	7,394	92,570	40	333	9,701	84,462
Lewis	1	12	32	329	10,500	306,949	1,458	19,953	5	45	7,186	68,714
Lincoln	1	25	.....	.....	17,222	338,141	3,302	37,526	14	75	4,587	32,878
Logan	.....	.....	.....	.....	16,502	286,873	2,561	22,132	17	67	313	1,822
McDowell	4	20	3	12	5,257	80,576	1,704	14,185	102	547	112	621
Marion	19	199	98	692	10,662	312,947	4,089	76,278	12	158	9,224	94,202
Marshall	1	18	26	244	17,102	518,758	9,953	258,309	225	2,583	14,877	202,486
Mason	4	20	33	301	21,631	558,382	3,906	65,128	264	2,831	14,176	152,461
Mercer	.....	.....	136	1,098	9,605	166,104	4,790	61,767	255	1,729	5,910	41,454
Mineral	.....	.....	490	3,677	4,460	79,462	2,661	42,012	516	3,469	3,449	31,617
Monongalia	3	20	132	1,056	12,107	338,831	5,514	102,211	14	125	8,559	94,351
Monroe	.....	.....	139	830	11,551	247,054	4,215	71,130	220	1,908	9,089	109,019
Morgan	4	22	679	3,609	6,209	124,135	1,365	19,163	2,266	15,784	4,397	40,942
Nicholas	.....	.....	71	432	9,555	185,311	3,596	40,627	240	1,777	3,326	21,257
Ohio	51	1,215	7	64	5,322	153,275	3,862	121,420	71	942	3,798	60,326
Pendleton	.....	.....	898	8,805	7,334	144,425	1,961	28,196	1,057	9,136	6,101	63,998
Pleasants	.....	.....	43	225	6,147	154,257	769	12,636	62	726	3,234	31,188
Pocahontas	4	52	624	5,072	4,513	102,597	3,160	58,118	233	1,987	3,330	37,936
Preston	1	30	4,530	51,178	8,654	200,549	11,393	212,479	244	1,858	4,691	42,673
Putnam	.....	.....	6	32	12,900	289,529	3,817	52,771	8	26	6,521	61,448
Raleigh	18	89	307	2,836	9,107	161,264	4,981	61,258	206	1,469	4,088	26,509
Randolph	1	15	365	3,008	6,663	122,304	3,128	49,790	94	675	2,666	23,278
Ritchie	.....	.....	68	435	12,636	313,105	2,009	31,893	98	770	8,412	27,024
Roane	.....	.....	20	119	18,440	390,959	2,431	34,376	50	282	11,016	87,430
Summers	.....	.....	66	582	8,562	176,212	3,469	49,865	70	482	4,157	40,113
Taylor	3	50	48	464	4,604	116,859	2,064	35,959	24	163	3,791	39,241
Tucker	13	173	364	3,670	3,337	81,815	1,591	26,624	14	93	585	4,912
Tyler	.....	.....	23	134	10,119	251,801	2,246	33,402	32	220	7,140	65,690
Upshur	.....	.....	232	1,441	8,909	190,353	3,294	39,085	23	137	4,143	30,703
Wayne	4	46	13	117	30,432	639,393	5,038	50,423	70	429	6,620	42,792
Webster	.....	.....	33	191	4,457	84,222	1,163	12,520	34	253	957	5,546
Wetzel	8	100	55	615	16,081	453,981	4,760	93,923	70	766	10,322	122,476
Wirt	11	110	21	132	8,569	162,723	1,607	22,473	20	197	5,043	44,457
Wood	.....	.....	24	*230	16,691	433,127	4,144	69,507	136	1,204	13,124	141,695
Wyoming	4	40	36	241	8,737	135,320	2,883	25,161	162	735	964	4,749

In Tennessee the total area devoted to the cultivation of cereals in 1889 was 4,288,082 acres, as compared with 4,610,002 acres in 1879. There was a decrease of 319,202 acres in the area in wheat, of 113,549 acres in that in corn, of 6,050 acres in rye, and of 3,676 acres in buckwheat. On the other hand, there was an increase of 119,572 acres in the area in oats and of 985 acres in that in barley.

In North Carolina the total area in cereals in 1889 was 3,627,585 acres, as compared with 3,520,571 acres in 1879. There was an increase in the area in corn, oats, wheat, and barley of 55,208 acres, 41,436 acres, 19,680 acres, and 72 acres, respectively, and a decrease in the area in rye and buckwheat of 5,457 acres and 3,925 acres, respectively.

In South Carolina the total area in cereals in 1889 was 1,774,438 acres, as compared with 1,744,065 acres in 1879. The increase in the area in oats was 46,611 acres and in that in corn 42,586 acres, while there was also a small area reported in buckwheat, a product that was entirely absent from the report for 1879, although it appeared in small quantities in the reports for 1869, 1859, and 1849. On the other hand, there was a decrease of 55,392 acres in the area in wheat, of 3,023 in that in rye, and of 474 acres in that in barley.

In Virginia the total area in cereals in 1889 was 2,891,177 acres, as compared with 3,298,815 acres in 1879. The decrease in the area in corn was 168,626 acres, in that in wheat 164,180 acres, in oats 68,048 acres, and in buckwheat 11,293 acres. The increase in the area in rye was 3,317 acres and in that in barley 1,192 acres.

In West Virginia the total area in cereals in 1889 was 1,151,578 acres, as compared with 1,133,821 acres in 1879. There was an increase of 53,884 acres in the area in oats and of 26,978 acres in that in corn. Wheat, buckwheat, rye, and barley show a decrease in the area cultivated of 44,052 acres, 16,638 acres, 2,317 acres, and 98 acres, respectively.

The whole of the figures for 1889 are subject to slight modification in the final report.

ROBERT P. PORTER,
Superintendent of Census.

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CENSUS BULLETIN.

No. 241. WASHINGTON, D. C. October 14, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF CHARLESTON, SOUTH CAROLINA.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,
WASHINGTON, D. C., October 11, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Charleston 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 material 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; cotton cleaning and rehandling; 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	136
Capital invested	$252,514
Number of hands employed	447
Wages paid	$119,206
Cost of materials used	$192,723
Miscellaneous expenses	$25,153
Value of product at works	$401,446

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	121.65
Capital invested	310.15
Number of hands employed	125.35
Wages paid	226.24
Cost of materials used	213.80
Value of product at works	210.75
Population of city	9.95

Decrease of assessed valuation of city, 5.13 per cent.

Decrease of municipal debt less sinking fund, 3.80 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 dacade 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 $298 in 1880 to $431 in 1890, or 44.63 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.

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 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.

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.	Clothing—men's, wholesale. — (5 establishments.)	Cooperage. — (6 establishments.)	Cotton compressing. — (4 establishments.)	Fertilizers. — (3 establishments.)	Flouring and grist mill products. — (7 establishments.)
CAPITAL EMPLOYED—Aggregate	$86,310	$306,420	$1,187,000	$724,900	$218,625
HIRED PROPERTY—Total	25,215	20,320			30,530
PLANT—Total	1,720	174,250	1,155,000	223,000	70,000
Land		21,000	258,000	61,000	17,000
Buildings		110,000	642,000	111,000	26,000
Machinery, tools, and implements	1,720	43,250	255,000	51,000	27,000
LIVE ASSETS—Total	59,375	111,850	32,000	501,900	118,095
Raw materials	14,900	93,800	2,000	60,800	41,450
Stock in process and finished product	24,350	16,825		24,300	30,145
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	20,125	1,225	30,000	410,800	46,500
WAGES PAID—Aggregate	$38,044	$126,269	$51,600	$43,344	$32,144
Average number of hands employed during the year	90	314	155	121	69
Males above 16 years	18	301	155	121	69
Females above 15 years	1				
Children					
Pieceworkers	71	13			
MATERIALS USED—Aggregate cost	$92,100	$279,475	$11,165	$287,175	$343,171
Principal materials	92,000	278,675		262,300	335,205
Fuel			8,450	8,375	3,078
Mill supplies				1,500	50
All other materials	100	800	2,715	15,000	4,838
MISCELLANEOUS EXPENSES—Aggregate	$2,906	$13,547	$29,150	$50,538	$5,047
Amount paid for contract work					
Rent	1,696	1,520			2,580
Power and heat		400			
Taxes	650	1,082	7,000	7,550	911
Insurance	345	3,815	2,500	3,938	781
Repairs, ordinary, of buildings and machinery	25	2,620	8,500	8,550	400
Interest on cash used in the business			10,000	15,500	300
All sundries not elsewhere reported	280	4,110	1,150	16,000	075
GOODS MANUFACTURED—Aggregate value	$161,200	$425,125	$124,000	$441,250	$389,914
Principal product	161,200	424,500	24,000	441,250	348,914
All other products, including receipts from custom work and repairing		625	100,000		41,000

NOTE.—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.	Foundry and machine shop products. (4 establishments.)	Lumber—planing mill products. (a) (10 establishments.)	Printing and publishing. (a) (9 establishments.)	Rice—cleaning and polishing. (4 establishments.)	Shipbuilding. (7 establishments.)
CAPITAL EMPLOYED—Aggregate	$357,850	$228,426	$404,225	$264,700	$139,160
HIRED PROPERTY—Total		19,670	32,725		11,440
PLANT—Total	194,500	83,278	226,500	241,000	47,900
Land	34,000	25,878	31,500	50,000	20,500
Buildings	41,000	19,000	59,000	91,000	15,400
Machinery, tools, and implements	119,500	38,400	136,000	100,000	12,000
LIVE ASSETS—Total	163,350	125,478	145,000	23,700	79,820
Raw materials	37,650	24,410	56,100	3,200	7,270
Stock in process and finished product	52,400	24,678	14,100		47,475
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	73,300	76,390	74,800	20,500	25,075
WAGES PAID—Aggregate	$139,788	$89,591	$178,714	$37,710	$46,786
Average number of hands employed during the year	227	221	272	99	82
Males above 16 years	224	216	196	99	77
Females above 15 years			40		
Children		5			
Pieceworkers	3		36		5
MATERIALS USED—Aggregate cost	$162,020	$249,571	$119,590	$27,500	$46,452
Principal materials	154,720	242,646	114,665		45,432
Fuel	6,650	800	2,325	7,350	800
Mill supplies		1,100	625	1,100	
All other materials	650	5,025	1,975	19,050	220
MISCELLANEOUS EXPENSES—Aggregate	$9,517	$12,223	$62,886	$20,350	$11,530
Amount paid for contract work					
Rent		1,883	2,430		1,088
Power and heat		300			
Taxes	3,022	2,050	3,168	7,000	775
Insurance	1,995	945	2,255	3,400	1,212
Repairs, ordinary, of buildings and machinery	2,200	1,653	1,075	4,050	7,050
Interest on cash used in the business		2,200	4,400	3,500	
All sundries not elsewhere reported	1,400	3,192	49,558	1,500	1,405
GOODS MANUFACTURED—Aggregate value	$365,200	$444,833	$449,085	$120,056	$185,280
Principal product	359,200	384,433	440,085	116,300	126,030
All other products, including receipts from custom work and repairing	6,000	60,400	9,000	3,756	59,250

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

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CENSUS BULLETIN.

No. 242. WASHINGTON, D. C. October 15, 1892.

MANUFACTURES—THE COMBINED TEXTILE INDUSTRIES.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,
WASHINGTON, D. C., October 11, 1892.

The statistics of each branch of the great textile industries have now been completed for the Eleventh Census, and herewith is presented a report on the textile industry as a whole, compiled under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures, from separate reports prepared by special agents S. N. D. NORTH, in charge of the inquiry into wool manufactures, EDWARD STANWOOD, in charge of the inquiry into cotton manufactures, BYRON ROSE, in charge of the inquiry into silk manufactures, and P. T. WOOD, in charge of the inquiry into dyeing and finishing of textiles as a distinct industry.

It appears from the tables presented in this bulletin that the increase of silk manufacture since 1880 has been the most striking, being 112.75 per cent in the value of its products; that of the cotton manufacture ranking second, being 39.51 per cent, and that of the wool manufacture being 26.39 per cent. The average increase in the entire textile industry is 38.51 per cent. The relative rank in importance of these industries, however, is reversed, wool manufacture in all its branches (including all descriptions of hosiery and knit goods) standing first, with gross products valued at $337,768,524; cotton manufacture second, with products valued at $267,981,724, and silk manufacture third, with products valued at $87,298,454. The actual increase in the value of products has been $70,515,611 in wool, $75,891,614 in cotton, and $46,265,409 in silk. These combined industries yielded a product in the present census year worth $693,048,702, as compared with a product in 1880 of $500,376,068, an increase in 10 years of $192,672,634, which, from any point of view, is without parallel in any country.

It is proper to state in this connection that there were 248 establishments engaged in dyeing and finishing textiles separate and apart from establishments which dye and finish their own products. These establishments had an invested capital of $40,270,579, employing 20,267 hands, and paying $9,717,011 in wages. The value added to the product of the textile factories by these establishments amounted to $28,900,560, a decrease of $3,396,860 as compared with the sum of $32,297,420, added value in 1880, this decrease being explained by the very great reduction in the cost of dyeing and finishing through improved methods, equal to fully 25 per cent.

C. O. P.—10m

The following statement presents the general facts attending the increase of the combined industries 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:

GENERAL HEADS.	1890	1880	Per centage of increase.
Number of establishments	3,865	3,827	0.99
Capital invested	$701,522,861	$386,497,515	81.51
Number of hands employed (not including officers and clerks in cotton industry).	488,921	365,438	33.79
Amount of wages paid (not including wages paid officers and clerks in cotton industry).	$162,365,598	$98,576,302	64.71
Miscellaneous expenses	$40,910,405	(a)	.....
Cost of materials	$408,328,226	$289,045,599	41.27
Value of product	$693,048,702	$500,376,068	38.51

a This item was not reported at the census of 1880.

At the census of 1880 there were reported 2,115 officers and clerks as engaged in cotton manufacture, but the wages paid these employés was not then reported. 2,709 officers and clerks, receiving $3,464,734 in wages, were reported at the census of 1890. Therefore this class of employés is omitted from the figures for the cotton industry in making comparisons or computing percentages of increase.

The increase in the amount of wages paid for the combined textile industries has been even more marked than the increase in the value of products, being 64.71 per cent in the combined industries; 61.77 per cent in the wool manufacture, 57.05 per cent in the cotton, and 115.16 per cent in the silk. The total sum of $162,365,598 was paid in the combined industry as wages to 488,921 employés, being average annual earnings for men, women, and children of $349.84 in the wool manufacture as compared with $293.33 in 1880, an increase of 19.26 per cent; $301.65 in the cotton manufacture, as compared with $243.65 in 1880, an increase of 23.80 per cent, and 386.55 in the silk manufacture, as compared with $291.88 in 1880, an increase of 32.43 per cent. For the division of these average annual earnings between men, women, and children, and the manner in which the average is affected by the relative number of each class and the time employed, reference is made to the separate reports on wool, cotton, and silk manufacture that will be issued at an early date.

The total capital employed in the textile industries, as returned in 1890, is $701,522,861. The great increase shown in this item for the past decade is more apparent than real, and is largely due to the fact that invested capital, as returned at the census of 1880, did not take cognizance of all items which are properly embraced in the current census inquiry under the head of "Live assets".

The detailed reports indicate that there has occurred during the past decade a general reduction in the price of the goods covered by this report. The value of the products given would therefore indicate a much greater quantity of production than a like value given at the census of 1880. Under these circumstances the true measure of the progress of these industries is shown by the quantity rather than by the value of production, which quantity will be presented in detail in the final reports.

In order that the relative growth of the textile industry may be fully appreciated the total for the combined industries and distinct totals for the wool, cotton, and silk manufactures in the United States, as returned at each census for the past half century, are presented in Tables 1, 2, 3, and 4, respectively.

Robert P. Porter.

Superintendent of Census.

TABLE 1.—THE COMBINED TEXTILE INDUSTRIES.

STATES AND TERRITORIES.		Number of establishments. (a)	Capital invested. (b)	LABOR AND WAGES. Hands employed.	LABOR AND WAGES. Wages paid.	Miscellaneous expenses. (c)	Cost of all materials.	Value of product.
United States	1890	3,865	$701,522,861	491,630	$195,830,332	$40,910,405	$408,328,226	$693,048,702
	1880	3,827	386,497,515	367,553	98,576,302	.....	289,045,599	500,376,068
	1870	4,498	279,389,508	260,563	81,352,653	.....	253,709,110	407,249,327
	1860	3,336	141,068,286	185,466	37,580,181	.....	104,749,928	198,436,114
	1850	2,804	103,842,616	135,586	(d)	.....	62,100,020	111,546,810
New England states	1890	1,147	405,036,497	249,902	87,691,337	23,246,354	206,041,969	352,224,970
	1880	1,160	243,224,562	207,917	57,042,282	.....	163,860,510	291,044,643
Maine	1890	106	30,540,097	19,572	6,409,133	1,831,360	14,206,420	24,331,165
	1880	122	19,338,906	15,189	4,038,159	.....	11,826,537	20,362,951
New Hampshire	1890	116	41,523,719	28,933	9,770,779	2,240,758	21,722,712	36,403,174
	1880	122	28,259,939	23,889	6,531,196	.....	18,013,484	31,189,253
Vermont	1890	45	5,491,250	3,040	1,116,026	307,747	2,619,951	4,744,326
	1880	58	3,750,257	3,204	807,048	.....	2,881,935	4,671,041
Massachusetts	1890	500	203,258,659	122,467	43,681,100	12,214,168	104,510,470	178,441,859
	1880	468	111,829,876	101,798	27,986,185	.....	79,662,543	143,505,583
Rhode Island	1890	182	64,959,778	44,351	15,242,229	3,914,268	36,045,110	62,262,054
	1880	178	41,076,947	33,646	9,033,560	.....	25,303,587	44,509,315
Connecticut	1890	198	59,262,994	31,539	11,472,070	2,738,053	26,937,306	46,042,392
	1880	212	38,968,637	30,191	8,646,134	.....	26,082,424	46,806,500
Middle states	1890	1,738	205,436,578	174,589	62,033,469	13,090,286	154,120,881	264,205,121
	1880	1,433	107,782,513	126,159	35,204,073	.....	101,211,648	171,041,950
New York	1890	566	70,918,577	59,544	21,182,030	4,553,355	46,086,670	82,535,242
	1880	451	39,679,987	43,224	11,810,036	.....	29,535,942	53,415,263
New Jersey	1890	199	38,123,613	30,848	11,646,833	2,243,956	26,926,776	46,647,626
	1880	168	14,555,770	21,913	6,727,221	.....	15,813,746	28,499,579
Pennsylvania	1890	927	86,380,887	77,836	27,432,808	5,774,387	76,332,263	127,126,738
	1880	762	47,353,901	55,407	15,518,965	.....	51,601,153	82,384,291
Delaware	1890	10	2,134,777	1,284	427,723	131,223	864,581	1,577,023
	1880	13	1,227,129	1,058	301,231	.....	975,490	1,536,260
Maryland	1890	36	7,869,724	5,077	1,344,075	387,365	3,919,591	6,318,492
	1880	39	4,965,726	4,557	846,620	.....	3,285,917	5,256,557
Southern states	1890	485	62,558,729	44,747	9,759,056	2,741,588	32,547,048	49,684,106
	1880	609	20,375,414	19,390	3,245,320	.....	12,736,868	20,317,769
Virginia	1890	47	4,080,511	2,950	628,159	180,094	1,996,211	2,964,171
	1880	56	1,646,850	1,477	241,509	.....	1,023,471	1,618,930
North Carolina	1890	124	11,195,122	9,276	1,747,729	443,706	6,551,985	10,053,264
	1880	98	3,058,000	3,528	462,854	.....	1,719,352	2,857,642
South Carolina	1890	35	11,144,233	8,193	1,646,689	530,736	6,817,632	9,801,956
	1880	25	2,784,000	2,066	382,017	.....	1,827,755	2,919,844
Georgia	1890	71	18,084,708	11,058	2,470,438	800,518	7,944,722	12,376,724
	1880	72	6,529,390	6,491	1,160,254	.....	4,184,738	6,721,284
Florida	1890	(e)	.....	.....	.....	.....	.....	.....
	1880	1	11,000	33	5,000	.....	18,095	25,000
Alabama	1890	92	2,965,713	2,565	515,136	158,734	1,573,938	2,398,646
	1880	30	1,275,400	1,508	243,035	.....	833,072	1,291,764
Mississippi	1890	16	3,607,198	2,266	597,251	75,676	1,380,009	2,257,583
	1880	16	1,453,640	940	186,314	.....	548,795	978,698
Louisiana	1890	6	1,516,660	1,253	290,042	16,100	736,762	1,126,751
	1880	2	195,000	108	12,572	.....	72,470	86,776
West Virginia	1890	32	343,881	307	67,380	16,098	210,461	359,132
	1880	56	208,170	357	44,861	.....	247,543	359,586
Kentucky	1890	49	4,142,815	2,876	804,094	246,943	2,300,659	3,785,436
	1880	101	1,250,750	1,175	230,039	.....	1,106,223	1,683,274
Tennessee	1890	69	4,322,336	3,172	735,095	230,486	2,524,828	3,724,138
	1880	122	1,564,264	1,446	228,134	.....	976,815	1,495,441
Arkansas	1890	8	164,236	115	21,106	8,825	46,507	71,913
	1880	27	160,550	154	20,565	.....	119,277	177,430
Texas	1890	(e)	.....	.....	.....	.....	.....	.....
	1880	3	147,500	107	28,166	.....	59,262	102,100
All other southern states	1890	e6	982,316	716	235,937	33,762	463,334	774,392

a This table only embraces active establishments which reported goods manufactured to the amount of $500 or over. It does not include penal, reformatory, or eleemosynary institutions. Returns from 15 establishments of this character were received at the Eleventh Census, reporting capital to the amount of $488,683 (not including $6,000 hired property); 1,877 hands; $95,000 wages; miscellaneous expenses, $18,834; cost of all materials, $298,863, and value of product, $485,079. These establishments were distributed as follows: Maryland, 1; Minnesota, 1; New Hampshire, 1; New York, 3; Ohio, 2; Pennsylvania, 3; Texas, 2; Virginia, 1; Wisconsin, 1.

b The totals for 1890 do not include hired property to the amount of $35,977,404, this item not being reported at previous censuses.

c This item was not specially reported at any census previous to 1890.

d This item was not reported at the census of 1850, except for silk manufacture.

e See note a, group of all other states, at end of table.

TABLE 1.—THE COMBINED TEXTILE INDUSTRIES—Continued.

STATES AND TERRITORIES.		Number of establishments.	Capital invested.	LABOR AND WAGES. Hands employed.	LABOR AND WAGES. Wages paid.	Miscellaneous expenses.	Cost of all materials.	Value of product.
Western states	1890	495	28,491,057	22,392	6,346,470	1,832,177	15,609,328	26,934,505
	1880	625	15,115,026	14,087	3,084,627	.....	11,236,573	17,971,706
Ohio	1890	123	4,801,926	3,953	1,123,098	316,903	3,227,605	5,418,081
	1880	156	2,265,040	2,796	491,522	.....	1,701,699	2,898,374
Indiana	1890	61	5,431,065	4,434	1,150,063	380,911	3,207,216	5,214,211
	1880	90	3,408,705	2,745	650,210	.....	2,578,104	4,042,576
Illinois	1890	72	4,092,995	4,051	1,304,911	238,589	2,417,158	4,639,374
	1880	74	1,755,353	2,245	508,690	.....	1,891,771	2,844,595
Michigan	1890	44	1,691,461	1,635	430,996	120,950	1,108,128	1,964,974
	1880	51	726,189	1,397	185,364	.....	624,241	928,766
Wisconsin	1890	60	4,603,613	3,884	952,933	287,626	2,390,919	4,100,201
	1880	53	1,559,964	1,146	285,566	.....	1,096,474	1,827,275
Minnesota	1890	24	811,269	470	167,323	72,698	394,898	723,738
	1880	15	203,500	263	55,327	.....	190,867	303,378
Iowa	1890	18	855,241	525	176,040	50,469	602,262	859,418
	1880	37	555,700	505	118,252	.....	437,301	682,812
Missouri	1890	44	895,863	802	202,827	39,432	450,874	796,736
	1880	106	1,649,550	1,327	227,607	.....	1,099,997	1,511,441
Kansas	1890	(a)	.....	.....	.....	.....	.....	.....
	1880	6	141,425	126	26,075	.....	107,401	212,065
Utah	1890	14	612,579	344	121,176	29,751	188,889	392,094
	1880	12	402,000	306	70,208	.....	150,698	287,361
Washington	1890	(a)	.....	.....	.....	.....	.....	.....
	1880	1	40,000	29	4,000	.....	52,000	70,000
Oregon	1890	6	1,350,585	402	175,313	87,156	327,252	614,932
	1880	10	566,800	216	86,088	.....	227,486	549,030
California	1890	20	3,235,263	1,794	516,590	201,507	1,235,933	2,080,215
	1880	14	1,840,800	986	375,718	.....	1,078,534	1,794,033
All other western states	1890	a9	109,197	98	25,200	6,185	58,164	130,531

a States having less than 3 establishments in 1890 in the combined industries are grouped, in order that the operations of individual establishments may not be disclosed. These establishments are distributed as follows: Southern states, 6: Florida, 1; Texas, 5. Western states, 9: Colorado, 2; Idaho, 1; Kansas, 2; Nebraska, 1; South Dakota, 2; Washington, 1. The 5 establishments reported in Texas are grouped with the 1 reported in Florida, to avoid disclosing the operations of that establishment.

TABLE 2.—WOOL MANUFACTURE. (a)

STATES AND TERRITORIES.		Number of establishments. (b)	Capital invested. (c)	LABOR AND WAGES. Hands employed.	LABOR AND WAGES. Wages paid.	Miscellaneous expenses. (d)	WOOL USED. Pounds.	WOOL USED. Cost.	Cost of all materials.	Value of product.
United States	1890	2,489	$296,494,481	219,132	$76,660,742	$19,529,238	372,797,413	$98,540,484	$202,815,842	$337,768,524
	1880	2,689	159,091,869	161,557	47,389,087	.....	296,192,229	97,681,601	164,371,551	267,252,913
	1870	3,456	132,452,087	118,545	40,366,235	.....	219,970,183	.....	134,154,615	217,548,926
	1860	2,106	39,556,037	58,003	12,589,849	.....	83,296,198	.....	43,562,617	76,146,569
	1850	1,643	28,663,385	41,577	(e)	.....	70,862,829	.....	26,171,101	44,235,647
New England states	1890	686	149,166,236	92,566	34,372,581	10,192,198	204,266,172	55,031,899	95,430,276	155,336,935
	1880	667	80,678,972	75,400	23,308,751	.....	168,111,797	55,000,002	84,187,033	137,927,668
Maine	1890	82	9,484,925	5,453	1,991,676	599,002	13,782,749	3,905,736	5,704,508	8,814,256
	1880	97	4,016,828	3,265	1,091,329	.....	9,074,011	3,172,391	4,444,990	6,962,003
New Hampshire	1890	89	14,721,786	9,400	3,341,695	875,671	22,152,190	5,747,363	8,784,638	14,445,172
	1880	85	8,374,855	7,352	2,237,736	.....	16,929,169	5,407,774	7,854,955	13,220,850
Vermont	1890	39	4,059,264	2,303	895,284	244,714	4,516,739	1,224,972	2,081,026	3,829,641
	1880	50	2,812,161	2,467	645,175	.....	4,004,524	1,376,945	2,372,428	3,813,077
Massachusetts	1890	293	71,066,526	43,038	16,154,034	4,959,715	99,569,455	25,430,803	44,767,072	72,681,408
	1880	271	38,231,375	38,128	11,635,889	.....	86,018,482	26,409,739	41,677,919	67,451,805
Rhode Island	1890	85	26,039,361	19,325	7,049,109	2,011,146	40,762,303	12,674,724	21,562,313	34,722,493
	1880	62	13,022,116	12,164	3,711,657	.....	27,141,974	9,924,837	13,094,650	21,624,204
Connecticut	1890	98	23,794,374	13,047	4,940,783	1,501,950	23,482,736	6,048,301	12,530,719	20,843,965
	1880	102	14,221,637	12,024	3,986,905	.....	24,943,637	8,708,316	14,742,091	24,855,729
Middle states	1890	1,112	116,372,021	101,580	35,503,450	7,427,135	128,718,377	33,547,030	91,025,256	153,904,571
	1880	984	63,717,854	72,339	21,133,923	.....	99,395,894	33,692,723	68,162,805	110,893,039
New York	1890	339	46,461,914	37,992	13,033,001	2,662,282	44,330,661	13,306,065	30,390,598	53,340,151
	1880	264	23,583,574	24,286	7,225,256	.....	32,536,816	10,681,050	19,550,793	34,978,287
New Jersey	1890	50	7,793,714	7,248	2,416,371	652,717	12,929,057	3,476,116	6,029,588	9,984,640
	1880	45	3,795,695	5,142	1,392,515	.....	7,165,562	2,543,967	4,117,035	6,820,074
Pennsylvania	1890	703	61,142,888	55,354	19,764,386	4,060,543	70,041,261	16,295,228	53,797,295	89,237,419
	1880	654	35,642,016	42,261	12,338,157	.....	58,034,083	19,891,516	43,664,468	67,821,397
Delaware	1890	3	450,974	297	103,395	27,404	531,198	146,201	295,605	482,022
	1880	5	352,559	261	108,504	.....	836,883	291,138	448,285	665,253
Maryland	1890	17	522,531	689	185,397	24,189	886,200	323,420	512,170	760,339
	1880	16	344,010	389	69,491	.....	822,550	282,052	382,224	539,028
Southern states	1890	244	8,541,875	7,234	1,881,656	416,705	8,787,076	2,480,431	4,459,304	7,073,681
	1880	448	2,999,517	2,649	494,334	.....	6,021,980	2,110,212	2,737,723	3,961,171
Virginia	1890	37	941,071	612	166,798	69,537	978,245	311,565	463,940	788,809
	1880	48	456,750	365	71,720	.....	862,812	326,602	383,080	577,968
North Carolina	1890	32	411,988	508	95,739	17,955	449,260	135,264	265,183	435,821
	1880	49	203,100	185	23,195	.....	576,145	216,650	255,707	303,160
South Carolina	1890	(f)	.....	.....	.....	.....	.....	.....	.....	.....
	1880	11	7,900	13	1,173	.....	48,950	19,120	19,455	24,075
Georgia	1890	18	420,033	528	104,353	21,492	208,992	67,774	166,696	340,095
	1880	32	180,733	142	25,070	.....	366,274	129,990	165,065	239,390
Alabama	1890	9	112,698	428	67,963	3,841	10,569	3,464	114,890	207,875
	1880	14	28,900	18	3,037	.....	135,366	46,246	49,361	63,745
Mississippi	1890	7	1,553,455	1,082	306,270	18,054	1,565,824	359,239	508,039	924,185
	1880	8	331,500	218	53,100	.....	494,033	157,612	211,646	299,605
Louisiana	1890	4	110,000	286	52,517	3,178	300	100	58,004	152,455
	1880	(g)	.....	.....	.....	.....	.....	.....	.....	.....
West Virginia	1890	32	343,881	307	67,380	16,008	618,823	185,390	210,461	350,132
	1880	56	298,170	357	44,861	.....	602,399	213,019	247,543	359,586
Kentucky	1890	44	2,766,683	2,042	615,055	186,743	2,864,377	785,280	1,656,710	2,784,768
	1880	98	800,750	823	166,189	.....	1,688,663	562,662	852,405	1,264,988
Tennessee	1890	49	1,393,679	998	239,657	56,533	1,448,486	445,625	759,766	1,216,419
	1880	106	418,664	402	67,063	.....	883,338	330,761	423,054	620,724
Arkansas	1890	6	27,435	31	6,231	802	67,500	23,325	27,980	38,360
	1880	25	85,550	90	13,226	.....	189,000	70,050	85,972	127,430
Texas	1890	(f)	.....	.....	.....	.....	.....	.....	.....	.....
	1880	1	97,500	36	25,700	.....	175,000	37,500	44,435	80,500
All other southern states.	1890	f6	460,952	412	159,693	22,562	574,700	163,405	228,535	434,762

a Includes establishments classed as woolen mills, worsted mills, wool hat factories, carpet mills (not including rag carpets), felt mills, and hosiery and knitting mills.

b This table only embraces active establishments which reported goods manufactured to the amount of $500 or over. It does not include penal, reformatory, or eleemosynary institutions. Returns from 14 establishments of this character were received at the Eleventh Census, reporting capital to the amount of $488,683 (not including $6,000 hired property); 1,419 hands; $88,279 wages; miscellaneous expenses, $17,962; wool used 76,300 pounds, costing $25,520; cost of all materials, $279,800, and value of products, $462,585. These establishments were distributed as follows: Maryland, 1; Minnesota, 1; New Hampshire, 1; New York, 3; Ohio, 2; Pennsylvania, 3; Texas, 1; Virginia, 1; Wisconsin, 1.

c The totals for 1890 do not include hired property to the value of $17,320,780, this item not being reported at previous censuses.

d This item was not specially reported at any census previous to 1890.

e This item was not reported at the census of 1850.

f See note a, group of all other states, at end of table.

g No reports received from this state in 1880.

TABLE 2.—WOOL MANUFACTURE—Continued.

STATES AND TERRITORIES.		Number of establishments.	Capital invested.	LABOR AND WAGES. Hands employed.	LABOR AND WAGES. Wages paid.	Miscellaneous expenses.	WOOL USED. Pounds.	WOOL USED. Cost.	Cost of all materials.	Value of product.
Western states	1890	447	22,414,349	17,752	4,903,055	1,493,200	31,025,788	7,481,124	11,901,006	20,853,337
	1880	590	11,695,526	11,169	2,452,079	.....	22,662,558	6,878,667	9,283,990	14,531,035
Ohio	1890	113	3,550,879	3,329	915,656	207,342	3,859,244	1,257,195	2,310,676	3,915,950
	1880	146	1,570,340	2,177	374,472	.....	2,695,424	890,992	1,395,512	2,198,264
Indiana	1890	55	3,686,345	3,109	817,387	806,970	7,420,137	1,683,696	2,287,680	3,863,786
	1880	86	2,318,705	2,025	487,381	.....	4,360,456	1,381,545	1,926,670	2,887,547
Illinois	1890	58	2,904,494	2,792	858,889	182,102	3,385,121	848,980	1,766,270	3,289,541
	1880	67	1,433,353	1,749	388,610	.....	3,063,740	1,164,210	1,623,693	2,380,584
Michigan	1890	43	1,559,004	1,428	390,147	120,071	2,280,402	576,719	886,541	1,689,974
	1880	50	706,189	1,309	168,564	.....	1,049,025	367,703	583,241	858,766
Wisconsin	1890	56	3,711,104	3,383	810,463	234,499	3,706,614	1,066,841	2,008,736	3,480,005
	1880	52	1,359,964	875	218,357	.....	2,066,188	771,643	901,918	1,498,886
Minnesota	1890	24	811,269	470	167,323	72,698	1,358,290	261,724	394,898	723,738
	1880	14	198,500	241	48,927	.....	557,580	131,695	160,867	263,378
Iowa	1890	17	703,550	387	135,790	40,469	1,880,532	451,313	507,478	700,981
	1880	37	555,700	505	118,252	.....	1,407,510	384,829	437,301	682,812
Missouri	1890	42	753,863	635	156,887	34,522	1,052,229	260,504	341,461	629,902
	1880	102	755,550	807	129,177	.....	1,811,635	589,080	723,286	1,015,961
Kansas	1890	(a)	.....	.....	.....	.....	.....	.....	.....	.....
	1880	5	131,925	124	25,825	.....	364,000	89,720	107,251	211,525
Utah	1890	14	612,579	344	121,176	29,751	800,500	126,240	188,889	392,094
	1880	11	382,000	277	68,108	.....	566,900	120,715	147,226	279,424
Washington	1890	(a)	.....	.....	.....	.....	.....	.....	.....	.....
	1880	1	40,000	20	4,000	.....	160,000	40,000	52,000	70,000
Oregon	1890	6	1,350,585	402	175,313	87,156	1,366,148	256,374	327,252	614,932
	1880	10	566,800	216	86,088	.....	985,250	197,785	227,486	549,030
California	1890	10	2,661,480	1,375	328,824	171,435	3,699,471	650,860	822,961	1,421,903
	1880	9	1,676,500	835	334,318	.....	3,574,850	748,750	997,539	1,634,858
All other western states.	1890	a9	109,197	98	25,200	6,185	217,100	40,678	58,164	130,531

a States having less than 3 establishments in 1890 in this branch of industry are grouped in order that the operations of individual establishments may not be disclosed. These establishments were distributed as follows: Southern states, 6: Florida, 1; South Carolina, 1; Texas, 4. Western states, 9: Colorado, 2; Idaho, 1; Kansas, 2; Nebraska, 1; South Dakota, 2; Washington, 1. The 4 establishments reported in Texas are grouped with the 2 reported in Florida and South Carolina, to avoid disclosing the operations of these establishments.

TABLE 3.—COTTON MANUFACTURE.

STATES AND TERRITORIES.		Number of establishments. (a)	Capital invested. (b)	LABOR AND WAGES. Hands employed. (c)	LABOR AND WAGES. Wages paid. (d)	Miscellaneous expenses. (e)	COTTON USED. Pounds.	COTTON USED. Cost.	Cost of all materials.	Value of products.
United States	1890	904	$354,020,843	221,585	$69,489,272	$17,036,135	1,117,945,776	$117,392,576	$154,593,368	$267,981,724
	1880	756	208,280,346	174,659	42,040,510	.....	750,343,981	86,945,725	102,206,347	192,090,110
	1870	956	140,706,291	135,369	39,044,132	.....	398,308,257	.....	111,736,936	177,489,739
	1860	1,091	98,585,269	122,028	23,940,108	.....	422,704,975	.....	57,285,534	115,681,774
	1850	1,094	74,500,931	92,286	(f)	.....	288,558,000	.....	34,835,056	65,501,687
New England states	1890	402	243,153,249	148,718	49,908,591	12,268,995	714,691,714	76,749,130	100,918,881	181,112,453
	1880	439	156,754,690	127,185	32,170,861	.....	541,373,880	63,169,434	74,290,026	143,363,030
Maine	1890	23	20,850,754	13,992	4,372,473	1,224,710	65,717,252	7,053,168	8,407,362	15,316,909
	1880	24	15,292,078	11,864	2,936,640	.....	54,185,061	6,234,901	7,320,152	13,319,363
New Hampshire	1890	27	26,801,933	19,533	6,429,084	1,365,087	107,319,124	11,203,742	12,938,074	21,958,002
	1880	36	19,877,084	16,529	4,290,960	.....	76,886,499	8,629,063	10,146,904	17,953,403
Vermont	1890	6	1,431,986	737	220,742	63,033	4,647,889	498,348	538,925	914,685
	1880	7	936,096	735	161,748	.....	3,562,088	458,607	508,297	855,864
Massachusetts	1890	187	128,838,837	76,213	26,230,667	6,769,193	386,767,326	40,870,307	56,492,375	100,202,882
	1880	175	72,291,601	61,844	15,828,571	.....	273,718,889	31,107,154	35,994,109	72,289,518
Rhode Island	1890	94	38,798,161	24,832	8,131,142	1,884,695	97,982,155	11,147,080	14,334,034	27,310,499
	1880	115	28,047 331	21,474	5,320,303	.....	81,137,172	10,457,770	12,291,437	22,875,111
Connecticut	1890	65	26,431,578	13,411	4,524,483	962,277	52,257,968	5,976,485	8,208,111	15,409,476
	1880	82	20,310,500	14,739	3,632,639	.....	52,384,171	6,281,939	8,029,127	16,069,771
Middle states	1890	239	51,676,249	32,344	10,763,873	2,163,829	128,184,288	13,906,748	22,968,895	40,664,476
	1880	139	31,014,759	28,367	6,618,260	.....	109,321,428	13,258,526	16,191,768	29,389,286
New York	1890	42	13,290,745	8,401	2,563,730	733,663	39,522,057	4,270,665	5,554,993	9,777,295
	1880	36	11,399,638	9,305	1,994,755	.....	31,656,594	3,981,106	4,652,745	8,266,836
New Jersey	1890	17	13,519,972	5,683	2,051,282	201,649	12,301,151	1,816,468	3,021,758	5,902,615
	1880	17	3,807,750	4,222	1,156,961	.....	9,950,609	1,319,422	2,018,175	4,548,275
Pennsylvania	1890	158	15,884,936	12,960	4,687,088	765,320	44,629,588	4,371,693	10,450,052	18,431,778
	1880	59	10,331,985	9,957	2,502,688	.....	40,311,809	4,749,428	6,105,700	11,021,054
Delaware	1890	7	1,683,803	987	324,328	103,819	4,465,825	475,490	568,976	1,095,001
	1880	8	874,570	797	192,727	.....	3,230,184	427,855	527,205	871,007
Maryland	1890	15	7,296,793	4,313	1,131,445	359,378	27,265,667	2,972,432	3,373,116	5,457,792
	1880	19	4,600,816	4,086	766,129	.....	24,166,232	2,780,715	2,887,933	4,682,114
Southern states	1890	239	53,827,303	37,168	7,817,069	2,318,358	250,837,646	24,508,776	27,703,357	41,513,711
	1880	161	17,375,897	16,741	2,750,986	.....	84,528,757	8,890,408	9,999,145	16,356,598
Virginia	1890	9	2,966,889	2,019	406,824	104,909	10,616,206	1,080,773	1,197,234	1,732,648
	1880	8	1,190,100	1,112	169,789	.....	5,987,519	601,796	640,391	1,040,962
North Carolina	1890	91	10,775,134	8,742	1,646,196	424,874	53,546,289	5,396,974	6,238,352	9,563,443
	1880	40	2,855,800	3,343	439,659	.....	11,832,641	1,125,984	1,463,645	2,554,482
South Carolina	1890	34	11,141,833	8,192	1,646,574	530,708	64,000,600	6,242,598	6,816,820	9,800,798
	1880	14	2,776,100	2,053	380,844	.....	15,601,005	1,723,187	1,808,300	2,895,769
Georgia	1890	53	17,664,675	10,530	2,366,085	779,026	69,139,410	6,663,560	7,778,026	12,035,629
	1880	40	6,318,057	6,349	1,135,184	.....	33,757,199	3,591,554	4,019,673	6,481,894
Florida	1890	(g)	.....	.....	.....	.....	.....	.....	.....	.....
	1880	1	11,000	33	5,000	.....	166,250	16,000	18,095	25,000
Alabama	1890	13	2,853,015	2,137	447,173	154,893	14,726,454	1,372,058	1,459,048	2,190,771
	1880	16	1,246,500	1,490	239,998	.....	7,271,791	729,202	783,711	1,228,019
Mississippi	1890	9	2,053,743	1,184	200,981	57,622	8,449,834	793,600	871,970	1,333,398
	1880	8	1,122,140	722	133,214	.....	2,881,853	301,226	337,149	679,093
Louisiana	1890	(h)	.....	.....	.....	.....	.....	.....	.....	.....
	1880	2	195,000	108	12,572	.....	644,000	68,018	72,470	86,776
Kentucky	1890	5	1,376,132	834	189,039	60,200	5,751,305	554,206	643,949	1,000,668
	1880	3	360,000	352	63,850	.....	1,882,234	188,856	253,818	418,286
Tennessee	1890	20	2,928,657	2,174	495,438	173,953	15,779,360	1,554,851	1,765,062	2,507,719
	1880	16	1,145,600	1,044	161,071	.....	4,944,279	503,305	553,761	874,717
Arkansas	1890	(h)	.....	.....	.....	.....	.....	.....	.....	.....
	1880	2	75,000	64	7,339	.....	340,000	25,000	33,305	50,000
Texas	1890	(h)	.....	.....	.....	.....	.....	.....	.....	.....
	1880	2	50,000	71	2,466	.....	119,986	11,280	14,827	21,600
All other southern states.	1890	h5	2,067,225	1,356	328,759	32,173	8,828,188	850,156	932,896	1,348,637

a This table only embraces active establishments which reported goods manufactured to the amount of $500 or over. It does not include penal, reformatory, or eleemosynary institutions. A return from an establishment of this character was received at the Eleventh Census, reporting 458 hands; wages, $6,722; miscellaneous expenses, $872; cost of all materials, $19,063, and value of product, $22,494.

b The totals for 1890 do not include hired property to the value of $8,301,464, this item not being reported at previous censuses.

c Includes in 1890 2,709 officers and clerks, and in 1880 2,115 officers and clerks.

d Includes $3,464,734 paid officers and clerks in 1890. This item was not reported in 1880.

e This item was not specially reported at any census previous to 1890.

f This item was not reported at the census of 1850.

g No reports received from this state in 1890.

h See note b, group of all other states, at end of table.

TABLE 3.—COTTON MANUFACTURE—Continued.

STATES AND TERRITORIES.		Number of establishments.	Capital invested.	LABOR AND WAGES.		Miscellaneous expenses.	COTTON USED.		Cost of all materials.	Value of products.
				Hands employed.	Wages paid.		Pounds.	Cost.		
Western states	1890	24	5,364,042	3,355	999,739	284,953	24,232,128	2,227,922	3,002,235	4,691,084
	1880	17	3,135,000	2,366	505,403	.....	15,119,916	1,627,357	1,725,418	2,981,196
Ohio	1890	7	1,213,217	584	193,757	106,899	5,840,078	383,556	902,946	1,468,204
	1880	4	670,000	484	104,500	.....	2,506,182	258,198	286,692	637,000
Indiana	1890	6	1,744,720	1,325	332,676	73,941	8,240,434	798,178	919,566	1,350,425
	1880	4	1,090,000	720	162,829	.....	6,364,887	679,911	651,434	1,155,029
Illinois	1890	4	766,405	454	150,386	18,986	3,267,188	312,621	337,773	563,988
	1880	2	240,000	237	47,885	.....	1,099,130	110,969	142,183	219,864
Michigan	1890	(a)	.....	.....	.....	.....	.....	.....	.....	.....
	1880	1	20,000	88	16,800	.....	300,000	36,000	41,000	70,000
Wisconsin	1890	4	892,509	501	142,470	53,127	3,470,388	359,117	382,183	620,196
	1880	1	200,000	271	67,209	.....	1,541,797	180,072	194,556	328,389
Minnesota	1890	(a)	.....	.....	.....	.....	.....	.....	.....	.....
	1880	1	5,000	22	6,400	.....	200,000	22,000	30,000	40,000
Missouri	1890	(b)	.....	.....	.....	.....	.....	.....	.....	.....
	1880	3	890,000	515	97,680	.....	3,082,132	336,984	376,081	522,980
Utah	1890	(a)	.....	.....	.....	.....	.....	.....	.....	.....
	1880	1	20,000	29	2,100	.....	25,788	3,223	3,472	7,937
All other western states.	1890	53	747,191	491	180,450	32,000	3,414,040	374,450	459,767	688,271

a No reports received from this state in 1890.

b States having less than 3 establishments in 1890 in this branch of industry are grouped, in order that the operations of individual establishments may not be disclosed. These establishments were distributed as follows: Southern states, 5: Arkansas, 2; Louisiana, 2; Texas, 1. Western states, 3: California, 1; Iowa, 1; Missouri, 1.

TABLE 4.—SILK MANUFACTURE.

STATES.		Number of establishments. (a)	Capital invested. (b)	LABOR AND WAGES.		Miscellaneous expenses. (c)	SILK AND SILK MATERIALS USED.		Cost of all materials.	Value of product.
				Hands employed.	Wages paid.		Pounds.	Cost.		
United States	1890	472	51,007,537	50,913	$19,680,318	$4,345,032	11,917,153	$46,351,200	$50,919,016	$87,298,454
	1880	382	19,125,300	31,337	9,146,705	.....	.....	19,298,683	22,467,701	41,033,015
	1870	86	6,231,130	6,649	1,942,286	.....	732,944	.....	7,817,559	12,210,662
	1860	139	2,926,980	5,435	1,050,224	.....	462,965	.....	3,901,777	6,607,771
	1850	67	678,300	1,723	297,416	.....	.....	.....	1,093,860	1,809,476
Massachusetts	1890	20	3,353,296	3,216	1,296,399	485,260	971,288	2,861,697	3,251,023	5,557,569
	1880	22	1,306,900	1,826	521,725	.....	.....	1,730,870	1,990,515	3,764,260
Rhode Island	1890	3	122,256	194	61,978	18,427	92,280	147,015	148,763	229,062
	1880	1	7,500	8	1,600	.....	.....	7,500	7,500	10,000
Connecticut	1890	35	9,037,042	5,081	2,006,804	273,826	1,921,180	5,723,328	6,198,476	9,788,951
	1880	28	4,436,500	3,428	1,026,530	.....	.....	3,025,325	3,311,206	5,881,000
New York	1890	185	11,165,918	13,151	5,584,399	1,157,410	1,846,521	8,571,281	10,141,079	19,417,796
	1880	151	4,696,775	9,633	2,590,025	.....	.....	4,333,485	5,331,804	10,170,140
New Jersey	1890	132	16,809,927	17,917	7,176,180	1,389,590	3,881,972	17,191,845	17,875,430	30,760,371
	1880	106	6,952,325	12,549	4,177,745	.....	.....	8,664,835	9,678,536	17,122,230
Pennsylvania	1890	66	9,362,063	9,522	2,981,334	948,524	2,967,108	10,875,625	12,084,916	19,357,546
	1880	49	1,379,900	3,189	678,120	.....	.....	1,207,795	1,830,985	3,491,840
Maryland	1890	4	50,400	75	24,233	3,798	4,995	29,530	34,305	100,361
	1880	4	20,900	82	11,000	.....	.....	11,630	15,760	35,415
Ohio	1890	3	37,830	40	13,685	2,662	1,032	8,335	13,983	33,927
	1880	6	24,700	135	12,550	.....	.....	14,845	19,495	53,110
Illinois	1890	10	422,096	805	295,636	37,501	34,118	155,931	313,115	785,845
	1880	5	82,000	259	72,195	.....	.....	73,820	125,895	244,150
California	1890	9	112,283	214	83,566	12,172	27,564	123,406	144,672	271,912
	1880	5	164,300	151	41,400	.....	.....	66,418	80,995	159,175
All other states	d1890	5	534,426	698	156,104	15,862	169,145	663,207	713,254	995,114
	d1880	5	53,500	77	13,815	.....	.....	72,160	75,010	101,725

a This table only embraces active establishments which reported goods manufactured to the value of $500 or over.

b The totals for 1890 do not include hired property to the value of $10,355,160, this item not being reported at previous censuses.

c This item was not specially reported at any census previous to 1890.

d States having less than 3 establishments in this branch of industry are grouped in order that the operations of individual establishments may not be disclosed. These establishments were distributed in 1890 as follows: Maine, 1; Michigan, 1; Missouri, 1; North Carolina, 1; Virginia, 1. In 1880: Kansas, 1; Maine, 1; Missouri, 1; New Hampshire, 1; Vermont, 1.

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CENSUS BULLETIN.

No. 243. WASHINGTON, D. C. October 15, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF CAMBRIDGE, MASSACHUSETTS.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,
WASHINGTON, D. C., October 11, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Cambridge 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	346
Capital invested	$987,486
Number of hands employed	750
Wages paid	$226,237
Cost of materials used	$341,591
Miscellaneous expenses	$86,187
Value of product at works	$811,933

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	133.51
Capital invested	197.37
Number of hands employed	78.42
Wages paid	119.56
Value of product at works	30.34
Population of city	32.96
Assessed valuation of city	37.79

Decrease in cost of materials used, 2.46 per cent.

Decrease of municipal debt less sinking fund, 30.55 per cent.

The decrease in total cost of materials used is principally found in the manufacture of leather, distilled liquors, meat packing, soap and candles, and refining of sugar and molasses. In 1880 the aggregate cost of materials reported for the industries named was 89 per cent of the aggregate value of products, while in 1890 such cost is 75 per cent of the aggregate value of products.

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 $453 in 1880 to $557 in 1890, or 22.96 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.

STATISTICS OF MANUFACTURES: 1890.

CITY OF CAMBRIDGE, 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	67	379	$6,480,799	7,543	$3,416,470	$20,101,349
	1890	106	1,231	20,259,747	14,208	7,727,333	19,947,576

INDUSTRIES.		Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
				Population.	Assessed valuation.	Municipal debt. (c)
All industries	1880	----------	$26,605,688	52,669	$49,235,098	$3,403,723
	1890	$2,397,304	35,490,380	70,028	67,471,925	2,363,781

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 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.

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.	Boxes—wooden, packing. (4 establishments.	Carriages and wagons. (b) (17 establishments.)	Clothing—men's, wholesale. (3 establishments.)	Confectionery. (25 establishments.)	Foundry and machine shop products. (15 establishments.)
CAPITAL EMPLOYED—Aggregate	$214,952	$243,363	$102,430	$295,956	$2,384,967
HIRED PROPERTY—Total	42,620	71,288	4,875	101,061	292,891
PLANT—Total	104,954	90,280	18,550	93,275	330,977
Land	28,300	34,400	5,800	15,650	56,750
Buildings	37,700	41,700	7,200	29,850	33,800
Machinery, tools, and implements	38,954	14,180	5,550	47,775	240,427
LIVE ASSETS—Total	67,378	81,795	79,005	98,620	1,752,099
Raw materials	36,973	15,055	14,000	27,375	294,470
Stock in process and finished product	9,757	34,255	27,000	23,705	473,340
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	20,648	32,485	38,005	47,450	984,289
WAGES PAID—Aggregate	$95,152	$119,753	$65,320	$142,062	$704,081
Average number of hands employed during the year	175	177	178	347	1,075
Males above 16 years	156	161	25	160	1,074
Females above 16 years	1	----------	3	187	1
Children	----------	----------	----------	----------	----------
Pieceworkers	18	16	150	20	----------
MATERIALS USED—Aggregate cost	$118,942	$105,827	$156,392	$362,531	$821,829
Principal materials	114,555	89,920	140,950	295,594	732,307
Fuel	1,256	2,217	1,292	5,571	34,418
Mill supplies	2,400	----------	----------	----------	918
All other materials	731	13,690	14,750	61,366	54,186
MISCELLANEOUS EXPENSES—Aggregate	$14,555	$13,393	$2,295	$10,767	$428,766
Amount paid for contract work	----------	----------	----------	----------	----------
Rent	4,202	4,279	390	7,277	17,570
Power and heat	100	----------	120	268	5,660
Taxes	1,807	1,020	355	1,605	23,062
Insurance	1,353	2,254	990	1,322	12,115
Repairs, ordinary, of buildings and machinery	2,506	306	25	1,043	4,319
Interest on cash used in the business	2,264	1,400	----------	2,375	5,935
All sundries not elsewhere reported	2,203	3,165	415	5,857	359,205
GOODS MANUFACTURED—Aggregate value	$290,897	$284,925	$266,000	$684,875	$2,478,780
Principal product	285,847	115,125	266,000	678,575	2,273,382
All other products, including receipts from custom work and repairing	5,050	169,800	----------	6,300	205,348

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.	Furniture—factory product. (11 establishments.)	Leather—tanned and curried. (3 establishments.)	Musical instruments. (a) (14 establishments.)	Printing and publishing. (a) (17 establishments.)	Soap and candles. (8 establishments.)
CAPITAL EMPLOYED—Aggregate	$621,498	$42,700	$1,032,389	$2,151,581	$641,881
HIRED PROPERTY—Total	257,100		185,300	465,326	80,112
PLANT—Total	143,622	26,200	268,705	1,022,402	228,875
Land	16,500	11,000	125,000		60,000
Buildings	60,000	7,500	71,000		100,600
Machinery, tools, and implements	67,122	7,700	72,705	1,022,402	68,275
LIVE ASSETS—Total	220,776	16,500	1,178,384	663,853	332,894
Raw materials	81,962	4,500	178,794	38,463	102,813
Stock in process and finished product	112,745	9,500	290,625	280,532	144,740
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	26,069	2,500	708,965	344,858	85,341
WAGES PAID—Aggregate	$425,349	$45,960	$608,358	$554,797	$160,676
Average number of hands employed during the year	636	73	897	907	292
Males above 16 years	567	67	425	478	265
Females above 15 years	2		35	226	18
Children				3	
Pieceworkers	67	6	437	200	19
MATERIALS USED—Aggregate cost	$219,894	$300,450	$524,116	$509,114	$978,362
Principal materials	192,692	298,250	516,728	360,336	859,021
Fuel	5,155	950	4,838	5,438	14,067
Mill supplies	950		25		2,000
All other materials	21,097	1,250	2,525	143,340	103,274
MISCELLANEOUS EXPENSES—Aggregate	$36,357	$3,143	$138,339	$585,083	$39,610
Amount paid for contract work					
Rent	25,710		18,630	27,914	6,400
Power and heat	7,705		2,375	740	
Taxes	4,548	385	11,313	5,708	6,566
Insurance	7,797	208	4,249	6,076	6,373
Repairs, ordinary, of buildings and machinery	1,215	550	1,267	1,980	6,200
Interest on cash used in the business	600		25,555	28,732	6,252
All sundries not elsewhere reported	18,782	2,000	75,050	514,773	7,810
GOODS MANUFACTURED—Aggregate value	$756,740	$369,000	$1,552,783	$1,807,425	$1,303,870
Principal product	756,740	368,500	1,482,413	1,807,425	1,286,770
All other products, including receipts from custom work and repairing		500	70,370		17,100

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

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CENSUS BULLETIN.

No. 244. WASHINGTON, D. C. October 15, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF PHILADELPHIA, PENNSYLVANIA.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,
WASHINGTON, D. C., October 11, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Philadelphia 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; china and pottery, decorating; 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	1,329
Capital invested	$4,979,071
Number of hands employed	5,809
Wages paid	$1,533,937
Cost of materials used	$2,779,884
Miscellaneous expenses	$362,009
Value of product at works	$6,620,482

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	96.32
Capital invested	91.25
Number of hands employed	33.28
Wages paid	103.69
Cost of materials used	50.56
Value of product at works	71.95
Population of city	23.58
Assessed valuation of city	67.49

Decrease of municipal debt less sinking fund, 45.37 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 $346 in 1880 to $529 in 1890, or 52.89 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 P. Porter

Superintendent of Census.

STATISTICS OF MANUFACTURES: 1890.

CITY OF PHILADELPHIA, 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.
All industries	1880	224	8,567	$187,148,857	185,527	$64,265,966	$199,155,477
	1890	289	18,148	362,895,272	253,073	132,436,268	302,623,539

INDUSTRIES.		Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
				Population.	Assessed valuation.	Municipal debt. (c)
All industries	1880	.....	$324,342,935	847,170	$581,729,759	$54,223,844
	1890	$39,505,579	564,323,762	1,046,964	974,338,294	29,622,705

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 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.

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.	Boots and shoes—factory product. (93 establishments.)	Chemicals. (34 establishments.)	Foundry and machine shop products. (347 establishments.)	Hats and caps, not including wool hats. (85 establishments.)	Iron and steel. (*b*) (29 establishments.)
CAPITAL EMPLOYED—Aggregate	$4,185,794	$11,264,183	$34,469,632	$3,048,022	$6,475,614
HIRED PROPERTY—Total	875,245	192,000	3,038,600	595,000	57,500
PLANT—Total	958,925	5,020,644	17,007,776	1,203,585	4,110,472
Land	103,500	1,200,500	4,280,495	536,900	921,571
Buildings	114,602	1,267,866	4,302,441	494,700	953,094
Machinery, tools, and implements	740,823	2,552,278	8,424,840	171,985	2,235,807
LIVE ASSETS—Total	2,351,624	6,051,539	14,423,256	1,249,437	2,307,642
Raw materials	326,862	1,112,813	1,952,752	568,692	480,042
Stock in process and finished product	565,844	2,223,547	4,376,627	201,680	679,207
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	1,458,918	2,715,179	8,093,877	479,065	1,148,393
WAGES PAID—Aggregate	$2,391,509	$1,202,367	$11,442,921	$1,099,906	$1,893,557
Average number of hands employed during the year	5,140	2,072	18,040	2,209	3,343
Males above 16 years	1,597	1,626	16,324	968	2,646
Females above 15 years	622	408	60	197	3
Children	212	3	62	38	26
Pieceworkers	2,709	35	1,594	1,006	668
MATERIALS USED—Aggregate cost	$3,151,927	$6,195,578	$12,052,191	$1,505,751	$3,902,611
Principal materials	3,032,212	5,945,457	11,822,834	1,448,380	3,150,466
Fuel	10,958	120,010	394,987	17,721	376,868
Mill supplies	.....	10,710	160,481	225	30,656
All other materials	108,757	119,401	573,889	39,425	344,621
MISCELLANEOUS EXPENSES—Aggregate	$218,470	$271,034	$1,912,788	$339,392	$583,943
Amount paid for contract work	16,800	.....	41,100	4,000	.....
Rent	56,891	13,466	228,542	35,645	4,025
Power and heat	8,007	730	22,104	1,520	3,420
Taxes	5,052	14,596	85,055	2,643	15,632
Insurance	21,826	25,295	83,257	10,782	8,164
Repairs, ordinary, of buildings and machinery	18,288	31,978	438,499	14,235	198,942
Interest on cash used in the business	6,655	15,446	174,799	53,133	53,225
All sundries not elsewhere reported	84,951	169,523	839,432	217,434	300,535
GOODS MANUFACTURED—Aggregate value	$6,851,834	$9,652,760	$31,195,028	$3,388,220	$7,201,807
Principal product	6,838,532	9,649,596	29,798,081	3,353,155	6,989,226
All other products, including receipts from custom work and repairing.	13,302	3,164	1,396,947	35,065	212,581

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.	Printing and publishing. (a) — (668 establishments.)	Shipbuilding. — (20 establishments.)	Slaughtering and meat packing. (a) — (213 establishments.)	Sugar and molasses refining. — (8 establishments.)	Textiles. (a) — (717 establishments.)
CAPITAL EMPLOYED—Aggregate	$32,765,323	$1,291,776	$4,465,242	$8,207,655	$77,246,525
HIRED PROPERTY—Total	12,140,800	45,000	660,500	1,095,000	11,156,900
PLANT—Total	12,466,181	690,710	1,541,509	3,925,184	31,597,638
Land	1,583,300	366,000	441,918	865,000	3,945,808
Buildings	1,287,306	82,965	478,825	540,000	8,942,356
Machinery, tools, and implements	9,595,575	241,745	620,766	2,520,184	18,709,474
LIVE ASSETS—Total	8,158,342	556,066	2,263,233	3,187,471	34,491,987
Raw materials	1,126,944	67,280	300,186	672,143	8,488,973
Stock in process and finished product	2,227,696	99,809	552,757	757,574	11,321,257
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	4,803,702	388,977	1,410,290	1,757,754	14,681,757
WAGES PAID—Aggregate	$6,851,064	$447,772	$836,607	$753,386	$22,147,384
Average number of hands employed during the year	10,590	709	1,233	3,181	57,412
Males above 16 years	7,324	709	1,207	1,517	21,422
Females above 15 years	1,386	.....	14	1,664	18,104
Children	271	.....	2	.....	4,021
Pieceworkers	1,609	.....	10	.....	13,865
MATERIALS USED—Aggregate cost	$6,128,155	$433,573	$13,743,710	$41,835,565	$56,791,356
Principal materials	5,606,496	385,007	13,201,360	41,141,841	52,785,012
Fuel	63,922	8,192	38,575	426,516	860,234
Mill supplies	1,369	25	1,570	6,977	1,592,191
All other materials	456,368	40,349	502,205	260,231	1,553,919
MISCELLANEOUS EXPENSES—Aggregate	$6,121,148	$36,889	$217,557	$584,892	$1,739,763
Amount paid for contract work	166,815	.....	.....	.....	60,584
Rent	415,671	3,685	46,230	76,722	669,414
Power and heat	39,470	.....	7,180	.....	125,929
Taxes	46,765	4,774	11,763	28,279	166,227
Insurance	91,163	2,667	10,941	43,807	317,809
Repairs, ordinary, of buildings and machinery	98,662	20,248	18,336	37,757	700,275
Interest on cash used in the business	108,505	500	6,850	48,834	750,017
All sundries not elsewhere reported	5,154,097	5,015	116,257	349,493	1,949,511
GOODS MANUFACTURED—Aggregate value	$25,172,053	$959,128	$16,234,166	$46,598,524	$98,332,618
Principal product	25,003,850	782,022	15,593,226	46,598,524	76,390,936
All other products, including receipts from custom work and repairing.	168,203	177,106	640,940	.....	21,941,682

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

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CENSUS BULLETIN.

No. 245. WASHINGTON, D. C. October 15, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF HOBOKEN, NEW JERSEY.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,
WASHINGTON, D. C., October 11, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Hoboken 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; 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	9
Capital invested	$578,692
Number of hands employed	44
Wages paid	$34,023
Cost of materials used	$75,954
Miscellaneous expenses	$14,831
Value of product at works	$238,393

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	20.66
Capital invested	852.19
Number of hands employed	652.70
Wages paid	837.46
Cost of materials used	692.06
Value of product at works	751.59
Population of city	40.80
Assessed valuation of city	26.82
Municipal debt, less sinking fund	0.32

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 $392 in 1880 to $489 in 1890, or 24.74 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 P. Porter

Superintendent of Census.

STATISTICS OF MANUFACTURES: 1890.

CITY OF HOBOKEN, NEW JERSEY.

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 perscriptions 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	35	121	$486,320	723	$283,604	$588,756
	1890	46	155	5,209,376	5,480	2,093,537	4,749,236

INDUSTRIES.		Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
				Population.	Assessed valuation.	Municipal debt. (c)
All industries	1880	----------	$1,051,136	30,999	$14,901,300	$1,100,250
	1890	$399,441	9,189,726	43,048	18,898,462	1,103,821

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 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.

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 wagons. — (3 establishments.)	Chemicals. — (3 establishments.)	Foundry and machine shop products. — (6 establishments.)	Lumber—planing mill products. (*b*) — (6 establishments.)	Shipbuilding. — (3 establishments.)	Silk and silk goods. — (16 establishments.)
CAPITAL EMPLOYED—Aggregate	$45,510	$48,230	$383,420	$122,990	$234,350	$2,513,514
HIRED PROPERTY—Total	2,610	1,430	46,920	34,540	18,200	214,230
PLANT—Total	27,600	29,100	172,700	47,400	163,375	1,129,063
Land	12,000	8,900	26,000	16,000	30,000	70,000
Buildings	8,000	15,500	48,700	5,000	84,280	258,000
Machinery, tools, and implements	7,600	4,700	98,000	26,400	49,095	801,053
LIVE ASSETS—Total	15,300	17,700	163,800	41,050	52,715	1,170,231
Raw materials	4,100	1,700	23,100	10,150	49,715	335,320
Stock in process and finished product	5,250	3,800	72,800	9,150	1,600	534,859
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	5,950	12,200	67,900	21,750	1,400	300,052
WAGES PAID—Aggregate	$26,417	$11,800	$185,564	$58,312	$144,383	$1,143,619
Average number of hands employed during the year.	39	15	234	77	226	3,244
Males above 16 years	39	15	234	77	226	611
Females above 15 years						663
Children						13
Pieceworkers						1,957
MATERIALS USED—Aggregate cost	$25,351	$65,647	$159,122	$241,125	$84,478	$2,095,004
Principal materials	24,241	63,000	144,075	238,345	83,228	2,020,721
Fuel	835	1,487	6,482	1,375		34,676
Mill supplies		300	4,150	920		
All other materials	275	860	4,415	485	1,250	39,607
MISCELLANEOUS EXPENSES—Aggregate	$1,015	$840	$9,752	$6,138	$6,120	$243,721
Amount paid for contract work						
Rent	215	120	4,000	2,925	1,360	15,013
Power and heat			500	650		250
Taxes	200	350	1,972	676	11	8,651
Insurance	220	160	972	1,242	55	8,685
Repairs, ordinary, of buildings and machinery	75	130	1,750	350	4,700	11,020
Interest on cash used in the business	250		18			73,355
All sundries not elsewhere reported	55	80	540	295		126,747
GOODS MANUFACTURED—Aggregate value	$59,600	$92,000	$403,850	$333,750	$378,216	$3,914,094
Principal product	45,400	92,000	343,000	329,750	95,575	3,914,094
All other products, including receipts from custom work and repairing.	14,200		60,850	4,000	282,640	

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.

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CENSUS BULLETIN.

No. 246. WASHINGTON, D. C. October 15, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF SAN FRANCISCO, CALIFORNIA.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,
WASHINGTON, D. C., October 12, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of San Francisco 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: china and pottery, decorating; druggists' preparations, not including prescriptions; drug grinding; 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	350
Capital invested	$462,433
Number of hands employed	1,755
Wages paid	$779,341
Cost of materials used	$1,375,304
Miscellaneous expenses	$154,794
Value of product at works	$2,853,115

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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	21.68
Capital invested	84.20
Number of hands employed	58.55
Wages paid	94.80
Cost of materials used	58.02
Value of product at works	65.00
Population of city	27.80
Assessed valuation of city	27.64

Decrease of municipal debt less sinking fund, 75.56 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 $525 in 1880 to $645 in 1890, or 22.86 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.

STATISTICS OF MANUFACTURES: 1890.

CITY OF SAN FRANCISCO, CALIFORNIA.

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	174	2,071	$35,368,139	28,442	$14,928,534	$47,978,072
	1890	201	3,965	65,612,049	46,850	29,860,057	77,188,061

INDUSTRIES.		Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA. Population.	Assessed valuation.	Municipal debt. (c)
All industries	1880	.....	$77,824,209	233,959	$244,477,360	$3,059,285
	1890	$7,901,164	131,263,713	298,997	312,062,960	747,627

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 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.

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 cannot 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 product. (55 establishments.)	Clothing—wholesale. (b) (188 establishments.)	Flouring and grist mill products. (11 establishments.)	Foundry and machine shop products. (93 establishments.)	Fruits and vegetables—canning and preserving. (10 establishments.)
CAPITAL EMPLOYED—Aggregate	$2,425,617	$2,407,849	$1,252,230	$6,174,263	$1,378,852
HIRED PROPERTY—Total	751,442	1,061,500	151,670	1,433,770	196,837
PLANT—Total	313,252	59,642	687,560	2,372,921	214,385
Land		2,500	268,560	483,900	92,000
Buildings		2,000	130,500	282,018	37,600
Machinery, tools, and implements	313,252	55,142	288,500	1,607,003	84,785
LIVE ASSETS—Total	1,360,923	1,286,707	413,000	2,367,572	967,630
Raw materials	152,842	290,063	114,750	312,727	26,000
Stock in process and finished product	453,641	417,414	73,450	906,195	527,230
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	754,440	579,230	224,800	1,088,650	414,400
WAGES PAID—Aggregate	$1,228,063	$1,235,486	$197,684	$2,352,284	$363,144
Average number of hands employed during the year	2,422	3,008	218	2,767	2,107
Males above 16 years	1,274	1,193	211	2,697	408
Females above 15 years	74	470	5	4	83
Children	28	9	2	56	42
Pieceworkers	1,046	1,336		10	1,574
MATERIALS USED—Aggregate cost	$1,483,256	$2,310,566	$2,994,970	$2,701,146	$1,860,912
Principal materials	1,427,233	2,155,669	2,850,179	2,391,556	1,099,965
Fuel	10,549	4,794	54,186	121,267	25,667
Mill supplies			2,120	19,253	
All other materials	45,474	150,103	88,485	169,070	735,280
MISCELLANEOUS EXPENSES—Aggregate	$141,662	$135,275	$156,438	$339,321	$149,988
Amount paid for contract work		7,540			
Rent	52,581	76,958	13,650	121,870	16,734
Power and heat	4,116	4,098	3,200	17,075	
Taxes	4,112	5,206	9,760	18,192	4,679
Insurance	11,283	10,669	19,274	31,701	15,575
Repairs, ordinary, of buildings and machinery	12,035	1,730	24,075	62,336	11,100
Interest on cash used in the business	6,974	12,553	32,120	29,553	69,400
All sundries not elsewhere reported	50,561	16,461	54,350	57,694	32,500
GOODS MANUFACTURED—Aggregate value	$3,315,043	$4,224,314	$3,559,666	$6,315,921	$2,826,700
Principal product	3,308,043	4,193,730	2,911,166	5,214,340	2,819,700
All other products, including receipts from custom work and repairing.	7,000	30,584	648,500	1,101,581	7,000

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.	Furnishing goods. (a) — (105 establishments.)	Leather—tanned and curried. — (37 establishments.)	Liquors. (a) — (36 establishments.)	Shipbuilding. — (21 establishments.)	Slaughtering and meat packing—wholesale. — (40 establishments.)
CAPITAL EMPLOYED—Aggregate	$3,508,764	$1,535,331	$6,358,103	$1,835,898	$1,969,492
HIRED PROPERTY—Total	930,275	74,386	475,842	57,900	363,500
PLANT—Total	176,148	500,700	3,797,107	874,070	199,451
Land	55,500	156,750	895,625	339,572	83,400
Buildings	39,250	177,100	873,580	407,358	48,200
Machinery, tools, and implements	81,398	166,850	2,027,902	127,140	67,851
LIVE ASSETS—Total	2,402,341	960,245	2,085,154	903,928	1,406,541
Raw materials	640,369	111,870	363,997	283,261	264,008
Stock in process and finished product	802,199	527,221	651,438	228,841	179,874
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	959,773	321,154	1,069,719	391,826	962,659
WAGES PAID—Aggregate	$1,249,651	$437,441	$712,771	$1,066,958	$336,714
Average number of hands employed during the year	2,751	623	764	1,316	367
Males above 16 years	551	611	739	1,267	364
Females above 15 years	671	1	16	.....	1
Children	39	2	3	.....	1
Pieceworkers	1,490	9	6	49	1
MATERIALS USED—Aggregate cost	$3,562,604	$2,170,392	$1,713,999	$1,300,375	$5,616,286
Principal materials	3,434,462	2,146,724	1,341,536	1,234,543	5,581,028
Fuel	4,053	14,646	177,579	64,656	10,279
Mill supplies	450	150	5,050	.....	.....
All other materials	123,639	8,872	189,834	1,176	24,979
MISCELLANEOUS EXPENSES—Aggregate	$188,490	$98,600	$816,818	$253,127	$231,664
Amount paid for contract work	26,303	.....	.....	.....	.....
Rent	65,101	6,694	39,254	4,630	30,898
Power and heat	9,340	.....	.....	720	480
Taxes	6,604	5,217	b518,931	8,690	4,577
Insurance	14,397	16,054	34,330	3,647	11,218
Repairs, ordinary, of buildings and machinery	4,057	15,331	25,309	35,148	11,712
Interest on cash used in the business	15,976	33,573	45,592	15,215	13,898
All sundries not elsewhere reported	46,712	21,731	158,402	185,077	158,881
GOODS MANUFACTURED—Aggregate value	$6,031,400	$2,918,419	$4,255,314	$2,645,716	$6,739,723
Principal product	5,920,675	2,595,467	4,242,239	2,125,535	6,160,321
All other products, including receipts from custom work and repairing.	110,815	322,952	13,075	520,181	579,402

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

[7-010]

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CENSUS BULLETIN.

No. 247. WASHINGTON, D. C. October 15, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF LOWELL, MASSACHUSETTS.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,
WASHINGTON, D. C., October 12, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Lowell 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	223
Capital invested	$1,147,420
Number of hands employed	880
Wages paid	$325,737
Cost of materials used	$397,176
Miscellaneous expenses	$84,456
Value of product at works	$999,710

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	113.78
Capital invested	92.03
Number of hands employed	35.77
Wages paid	71.09
Cost of materials used	30.04
Value of product at works	13.86
Population of city	30.64
Assessed valuation of city	50.96
Municipal debt less sinking fund	39.79

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 $299 in 1880 to $381 in 1890, or 27.42 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 P. Porter

Superintendent of Census.

STATISTICS OF MANUFACTURES: 1890.

CITY OF LOWELL, 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	69	283	$20,465,192	20,030	$5,996,591	$16,315,062
	1890	94	828	40,457,399	28,086	10,695,545	21,613,680

INDUSTRIES.		Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
				Population.	Assessed valuation.	Municipal debt. (c)
All industries	1880	----------	$33,935,777	59,475	$30,677,399	$1,554,274
	1890	$3,566,636	39,638,062	77,696	62,046,799	2,172,775

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 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.

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

CLASSIFICATION OF INQUIRIES.	Belting and hose—leather. (4 establishments.)	Foundry and machine shop products. (37 establishments.)	Lumber—planing mill products. (b) (10 establishments.)	Patent medicines and compounds. (12 establishments.)
CAPITAL EMPLOYED—Aggregate	$94,972	$2,536,025	$280,271	$589,334
HIRED PROPERTY—Total	25,385	198,115	54,770	218,130
PLANT—Total	13,832	888,389	151,150	82,270
Land		238,206	42,000	7,980
Buildings		346,872	58,400	15,650
Machinery, tools, and implements	13,832	303,311	50,750	58,640
LIVE ASSETS—Total	55,755	1,449,521	83,351	258,934
Raw materials	1,500	201,629	9,675	83,856
Stock in process and finished product	28,519	317,158	25,575	58,314
Cash, bills and accounts receivable, and all sundries not elsewhere reported	25,736	930,734	48,701	116,764
WAGES PAID—Aggregate	$18,283	$1,107,618	$121,818	$156,492
Average number or hands employed during the year	29	2,100	212	262
Males above 16 years	29	2,091	211	170
Females above 15 years		9	1	51
Children				6
Pieceworkers				35
MATERIALS USED—Aggregate cost	$88,310	$1,050,861	$538,322	$283,364
Principal materials	80,105	673,264	526,699	165,976
Fuel	572	34,657		1,673
Mill supplies		6,612	1,633	5,918
All other materials	7,633	356,328	9,990	109,799
MISCELLANEOUS EXPENSES—Aggregate	$5,107	$239,437	$12,228	$707,868
Amount paid for contract work				
Rent	1,050	13,868	3,560	14,888
Power and heat	396	9,840	3,760	
Taxes	385	32,282	1,887	4,635
Insurance	624	7,930	1,041	3,476
Repairs, ordinary, of buildings and machinery	336	49,621	1,908	6,043
Interest on cash used in the business	1,516	1,320		1,837
All sundries not elsewhere reported	200	130,576	72	676,689
GOODS MANUFACTURED—Aggregate value	$120,050	$2,554,111	$765,924	$1,278,087
Principal product	107,957	2,484,650	763,799	1,277,837
All other products, including receipts from custom work and repairing	12,093	69,461	2,125	250

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.
b Includes the manufacture of sash, doors, and blinds.

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

CLASSIFICATION OF INQUIRIES.	Rubber and elastic goods. (3 establishments.)	Textiles. (a) (31 establishments.)	Wirework. (5 establishments.)	Wood—turned and carved. (5 establishments.)
CAPITAL EMPLOYED—Aggregate	$197,088	$33,491,997	$123,499	$151,175
HIRED PROPERTY—Total	5,830	733,285	36,900	33,000
PLANT—Total	87,892	16,750,578	33,100	50,500
Land	7,415	3,562,519	8,000	16,000
Buildings	36,585	5,240,895	6,000	12,000
Machinery, tools, and implements	43,892	7,947,164	19,100	22,500
LIVE ASSETS—Total	103,366	16,008,134	53,499	67,675
Raw materials	20,763	5,359,970	11,250	18,125
Stock in process and finished product	34,788	4,197,059	22,050	13,525
Cash, bills and accounts receivable, and all sundries not elsewhere reported	47,815	6,451,105	20,199	36,025
WAGES PAID—Aggregate	$68,328	$6,711,488	$51,468	$64,305
Average number of hands employed during the year	172	20,253	110	200
Males above 16 years	50	7,452	106	188
Females above 16 years	67	9,121	4	
Children	6	522		11
Piecework ers	49	3,158		10
MATERIALS USED—Aggregate cost	$146,395	$16,086,684	$40,122	$52,809
Principal materials	75,216	13,307,465	44,843	52,304
Fuel	1,050	452,321	923	50
Mill supplies		512,323	1,000	100
All other materials	70,129	1,814,575	2,356	355
MISCELLANEOUS EXPENSES—Aggregate	$11,769	$2,128,629	$8,542	$8,849
Amount paid for contract work				
Rent	408	51,330	2,214	2,140
Power and heat	583	25,941	720	2,220
Taxes	1,620	304,677	974	791
Insurance	475	93,706	634	571
Repairs, ordinary, of buildings and machinery	938	668,524	1,000	2,585
Interest on cash used in the business	527	419,915		415
All sundries not elsewhere reported	7,218	564,536	3,000	127
GOODS MANUFACTURED—Aggregate value	$270,429	$27,253,026	$129,893	$146,292
Principal product	270,429	23,954,849	129,893	144,792
All other products, including receipts from custom work and repairing		3,298,177		1,500

a Includes "Carpets and rugs", "Cotton goods", "Felt goods", "Hosiery and knit goods", "Woolen goods", "Worsted goods", and "Dyeing and finishing of textiles".

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CENSUS BULLETIN.

No. 248. WASHINGTON, D. C. October 15, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF FALL RIVER, MASSACHUSETTS.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,
WASHINGTON, D. C., October 12, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Fall River 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	55
Capital invested	$23,225
Number of hands employed	167
Wages paid	$55,367
Cost of materials used	$218,999
Miscellaneous expenses	$7,050
Value of product at works	$306,062

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.

Capital invested	45.51
Number of hands employed	32.60
Wages paid	77.28
Cost of materials used	58.33
Value of product at works	62.44
Population of city	51.95
Assessed valuation of city	36.51

Decrease in number of establishments reported, 0.39 per cent.

Decrease of municipal debt less sinking fund, 16.56 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 $273 in 1880 to $365 in 1890, or 33.70 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 P. Porter

Superintendent of Census.

STATISTICS OF MANUFACTURES: 1890.

CITY OF FALL RIVER, 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	47	258	$25,076,518	17,085	$4,659,077	$10,552,192
	1890	42	312	36,513,260	22,822	8,714,811	16,026,445

INDUSTRIES.		Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
				Population.	Assessed valuation.	Municipal debt. (c)
All industries	1880	.....	$18,913,584	48,961	$37,000,790	$3,160,765
	1890	$2,020,806	31,020,451	74,398	53,474,458	2,697,409

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 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.

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.	Cordage and twine. (6 establishments.)	Cotton goods. (41 establishments.)	Dyeing and finishing of textiles. (3 establishments.)	Foundry and machine shop products. (16 establishments.)	Wood—turned and carved. (3 establishments.)
CAPITAL EMPLOYED—Aggregate	$52,761	$32,113,097	$2,053,681	$502,313	$105,100
HIRED PROPERTY—Total	1,000	9,500		124,100	62,000
PLANT—Total	36,800	24,860,881	1,139,722	182,449	16,860
Land	10,000	2,058,900	140,992	70,500	
Buildings	9,750	6,797,461	542,455	31,300	2,500
Machinery, tools, and implements	17,050	16,004,520	456,275	80,649	14,300
LIVE ASSETS—Total	14,961	7,243,226	1,513,959	285,764	26,300
Raw materials	5,850	2,425,863	81,731	42,038	20,000
Stock in process and finished product	5,400	2,770,473	53,527	60,285	5,200
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	3,711	2,046,890	1,378,701	174,441	1,100
WAGES PAID—Aggregate	$42,008	$6,724,452	$222,398	$309,758	$42,325
Average number of hands employed during the year	110	10,476	674	578	98
Males above 16 years	75	9,163	514	543	98
Females above 15 years	32	8,700	89	26	
Children	3	1,123	60		
Pieceworkers		490	11	9	
MATERIALS USED—Aggregate cost	$81,856	$13,625,830	$565,289	$323,975	$33,700
Principal materials	79,222	12,489,520	516,062	148,218	32,350
Fuel	960	591,798	44,057	15,132	350
Mill supplies	1,654	370,626		4,150	500
All other materials	20	173,877	4,570	156,475	500
MISCELLANEOUS EXPENSES—Aggregate	$1,616	$1,661,080	$177,913	$36,038	$6,094
Amount paid for contract work					
Rent	75	600		8,087	3,060
Power and heat	60	260		710	120
Taxes	422	427,750	25,266	5,122	29
Insurance	474	88,322	5,081	3,269	600
Repairs, ordinary, of buildings and machinery	265	407,693	50,554	6,073	550
Interest on cash used in the business		203,391	76,174	4,184	
All sundries not elsewhere reported	320	473,061	20,838	8,893	1,075
GOODS MANUFACTURED—Aggregate value	$133,582	$24,925,764	$1,206,191	$701,978	$91,500
Principal product	133,582	24,492,037	1,206,191	701,978	91,500
All other products, including receipts from custom work and repairing		433,727			

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

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CENSUS BULLETIN.

No. 249. WASHINGTON, D. C. October 15, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF MANCHESTER, NEW HAMPSHIRE.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,
WASHINGTON, D. C., October 12, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Manchester for the year ended May 31, 1890, prepared under the direction of Mr. FRANK R. WALKER, 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	117
Capital invested	$484,144
Number of hands employed	480
Wages paid	$173,595
Cost of materials used	$121,487
Miscellaneous expenses	$58,793
Value of product at works	$439,033

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	109.92
Capital invested	38.48
Number of hands employed	29.06
Wages paid	59.78
Cost of materials used	35.69
Value of product at works	28.86
Population of city	35.23
Assessed valuation of city	101.30

Decrease of municipal debt less sinking fund, 2.77 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 $311 in 1880, to $385 in 1890, or 23.79 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 P. Porter

Superintendent of Census.

STATISTICS OF MANUFACTURES: 1890.

CITY OF MANCHESTER, NEW HAMPSHIRE.

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	40	121	$15,140,153	10,838	$3,370,404	$7,901,066
	1890	53	371	21,402,083	14,407	5,558,962	10,842,645

INDUSTRIES.		Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
				Population.	Assessed valuation.	Municipal debt. (c)
All industries	1880	----------	$14,136,305	32,630	$16,621,079	$972,907
	1890	$1,074,361	18,654,547	44,126	33,450,479	945,950

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 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.

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.	Cotton goods. (4 establishments.)	Foundry and machine shop products. (10 establishments.)	Lumber—planing mill products. (b) (4 establishments.)	Printing and publishing. (b) (14 establishments.)	Tobacco—cigars and cigarettes. (7 establishments.)
CAPITAL EMPLOYED—Aggregate	$14,017,554	$583,014	$241,593	$230,855	$76,120
HIRED PROPERTY—Total	172,250	29,670	35,480	98,125	23,490
PLANT—Total	7,410,360	259,932	102,837	103,700	1,010
Land	1,140,000	97,652	39,600	3,000	
Buildings	1,670,000	66,243	31,500	2,900	
Machinery, tools, and implements	4,600,360	96,037	31,837	97,800	1,010
LIVE ASSETS—Total	6,434,944	293,412	103,276	29,030	51,620
Raw materials	1,998,906	33,970	44,500	3,850	20,500
Stock in process and finished product	1,611,363	110,700	20,000	398	6,225
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	2,824,675	148,742	38,776	24,782	24,895
WAGES PAID—Aggregate	$3,417,235	$106,616	$99,220	$108,352	$51,885
Average number of hands employed during the year	9,617	205	192	213	96
Males above 16 years	4,019	192	184	122	37
Females above 15 years	5,299	13	2	31	1
Children	221			2	7
Piecework ers	78		6	58	51
MATERIALS USED—Aggregate cost	$6,441,521	$317,494	$150,943	$72,184	$80,495
Principal materials	6,015,236	315,774	145,698	70,297	76,083
Fuel	140,588	330	100	1,525	155
Mill supplies	147,287	655	1,830		3,200
All other materials	138,410	735	3,315	362	1,057
MISCELLANEOUS EXPENSES—Aggregate	$560,311	$26,143	$14,843	$54,193	$12,821
Amount paid for contract work					
Rent	11,210	2,534	3,000	6,801	1,634
Power and heat	24,305	2,218		200	
Taxes	146,303	2,106	1,748	1,076	c10,312
Insurance	39,793	769	1,287	880	245
Repairs, ordinary, of buildings and machinery	144,363	4,985	2,347	4,410	125
Interest on cash used in the business	135,748	2,680	1,361	720	
All sundries not elsewhere reported	58,529	10,851	5,100	40,010	505
GOODS MANUFACTURED—Aggregate value	$10,957,219	$506,115	$292,077	$310,203	$165,133
Principal product	10,617,234	429,265	289,397	310,203	165,133
All other products, including receipts from custom work and repairing	339,985	76,850	2,680		

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.

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CENSUS BULLETIN.

No. 250. WASHINGTON, D. C. October 17, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF OAKLAND, CALIFORNIA.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,
WASHINGTON, D. C., October 14, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Oakland 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.

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	$575,955
Number of hands employed	486
Wages paid	$346,146
Cost of materials used	$312,512
Miscellaneous expenses	$117
Value of product at works	$663,236

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	37.50
Capital invested	150.76
Number of hands employed	77.22
Wages paid	90.57
Cost of materials used	45.76
Value of product at works	57.48
Population of city	40.88
Assessed valuation of city	39.49

Decrease of municipal debt less sinking fund, 44.66 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 $548 in 1880 to $589 in 1890, or 7.48 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 P. Porter.

Superintendent of Census.

STATISTICS OF MANUFACTURES: 1890.

CITY OF OAKLAND, CALIFORNIA.

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	27	72	$1,371,457	1,387	$759,917	$2,012,695
	1890	44	103	4,015,014	2,944	1,794,317	3,246,222

INDUSTRIES.		Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA. Population.	Assessed valuation.	Municipal debt. (c)
All industries	1880	.....	$3,181,060	34,555	$28,348,778	$369,126
	1890	$249,322	5,672,888	48,682	39,543,579	370,316

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 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.

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.	Flouring and grist mill products. (3 establishments.)	Foundry and machine shop products. (6 establishments.)	Leather—tanned and curried. (3 establishments.)	Lumber—planing mill products. (b) (12 establishments.)	Printing and publishing—newspapers and periodicals. (3 establishments.)
CAPITAL EMPLOYED—Aggregate	$210,400	$84,225	$139,968	$564,596	$111,660
HIRED PROPERTY—Total		14,750	20,850	53,060	40,110
PLANT—Total	116,300	52,100	20,000	239,836	45,000
Land	35,000	8,000	10,000	58,000	
Buildings	23,800	7,100	5,000	63,731	
Machinery, tools, and implements	57,500	37,000	5,000	118,105	45,000
LIVE ASSETS—Total	94,100	17,375	99,118	271,100	26,550
Raw materials	11,300	5,175	14,923	97,700	2,500
Stock in process and finished product	13,800	4,500	47,488	35,750	650
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	69,000	7,700	36,707	137,650	23,400
WAGES PAID—Aggregate	$30,380	$71,631	$24,548	$366,180	$82,203
Average number of hands employed during the year	74	86	36	506	188
Males above 16 years	74	86	36	454	53
Females above 15 years				1	4
Children				50	100
Piecework ers				1	31
MATERIALS USED—Aggregate cost	$185,441	$35,731	$117,934	$489,605	$26,694
Principal materials	465,611	28,887	117,834	468,550	25,274
Fuel	3,020	3,925	100	2,355	998
Mill supplies	40	827		10,525	
All other materials	16,770	2,092		8,175	422
MISCELLANEOUS EXPENSES—Aggregate	$7,106	$5,592	$6,949	$25,007	$20,573
Amount paid for contract work					
Rent		1,420	1,860	4,880	3,240
Power and heat		480		1,084	
Taxes	975	307	505	1,502	350
Insurance	3,340	555	740	3,963	755
Repairs, ordinary, of buildings and machinery	1,150	2,900	1,163	4,299	575
Interest on cash used in the business	1,641	830	2,621	1,779	729
All sundries not elsewhere reported				7,500	14,924
GOODS MANUFACTURED—Aggregate value	$526,633	$126,200	$135,389	$995,996	$143,700
Principal product	488,183	119,700	135,389	992,996	143,700
All other products, including receipts from custom work and repairing.	38,450	6,500		3,000	

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.