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PP. 1-80**

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Commonwealth of Massachusetts.

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TWENTY-SECOND ANNUAL REPORT

ON THE

# STATISTICS OF MANUFACTURES

FOR THE YEAR

1907.

BY THE

CHIEF OF THE BUREAU OF STATISTICS OF LABOR.

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# STATISTICS OF MANUFACTURES—1907.

## INTRODUCTION.

In this, the twenty-second annual presentation of the Statistics of Massachusetts Manufactures, the returns made to the Bureau of Statistics of Labor, in accordance with the provisions of Chapter 107 of the Revised Laws, have been tabulated upon an entirely new plan.

Since the beginning of their publication up to the present time, these statistics have been arranged in the form of comparative tables, the comparisons being limited in each report to returns of such identical establishments as may have made report to the Bureau for two years in succession. By the former method of presentation statistics could be given in this report covering but 5,109 establishments (with a value of manufactured product of \$1,337,059,553), that being the number of identical concerns which made returns to the Bureau both in 1906 and 1907. But the whole number of establishments making returns for 1907 was 5,671 (with a product value of \$1,364,431,255), and we have decided to give the public the benefit of the showings made by the aggregate returns, thus treating them for the first time as an annual Census instead of limiting the presentation to the returns from such establishments as also made report for the year 1906, — and incidentally recording, instead of omitting, an output for the year 1907 of over \$27,000,000 of manufactured products.<sup>1</sup> The reasons for making this departure from the Bureau's traditional method of presenting these statistics will be presently discussed.

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<sup>1</sup> The demand, chiefly from commercial organizations, for the manufactures statistics of the various cities, classified by industries, has led to the introduction of this innovation, also, in the current report (see pages 8-19). It must, however, always be borne in mind that wherever there are less than three establishments of a given industry in a city or town, the statistics of this industry are purposely omitted from the tabulations, except as they are covered up in the totals. It is necessary to adhere to this rule in order to avoid the disclosure of the business of individual concerns.

INCREASE IN THE VALUE OF MANUFACTURED PRODUCT SINCE  
THE CENSUS OF 1905.

A comparison of the figures of the Manufactures Census of 1905, though they represent a total of 10,723 establishments, with the returns from the 5,671 establishments reporting to the Bureau for 1907 is exceedingly interesting, since it gives — notwithstanding the difference in the number of concerns covered by the two canvasses — a significant indication of the extent to which Massachusetts has waxed in industrial prosperity within this short period. Having in mind that the Census of Manufactures, while bearing date of 1905, was taken as of the year ending December 31, 1904, and that it is the conditions of the latter year which are in reality being compared with those of 1907, our returns for the year 1907 enable the following comparison of aggregates for the Commonwealth to be made:

CLASSIFICATION.	Census of 1905 <sup>1</sup>	1907	INCREASE (+) OR DECREASE (−) IN 1907	
			Amount	Percent- age
Value of goods made, . . . . .	\$1,124,092,051	\$1,364,481,255	+\$240,389,204	+21.38
Amount of capital invested, <sup>2</sup> . . . . .	\$905,945,837	\$909,557,756	—	—
Value of stock and materials used, . . . . .	\$626,410,431	\$779,846,958	+\$153,436,527	+24.49
Wage-earners:				
Average number, . . . . .	493,399	539,962	+46,563	+10.56
Smallest number, . . . . .	409,609	453,349	+43,740	+10.68
Greatest number, . . . . .	578,530	607,161	+28,631	+4.95
Excess of greatest over smallest, . . . . .	168,921	153,812	−15,119	−8.95
Total amount paid in wages, . . . . .	\$232,288,946	\$278,191,113	+\$45,902,167	+19.71
Average yearly earnings, . . . . .	\$475.32	\$515.18	+\$39.86	+8.37
Average number of days in operation, . . . . .	279.98	293.49	+13.51	+4.83
Average proportion of business done (per cent), . . . . .	63.49	70.96	+7.47	+11.77

<sup>1</sup> Taken for the calendar year 1904.

<sup>2</sup> The figures for capital invested are not comparable for these two years, since in the Manufactures Census of 1905 the definition of Capital Invested as adopted by the Census Bureau at Washington was followed, while the figures given for 1907, following the usage of this Bureau for many years, limited Capital Invested to capital actually devoted to production.

IS MANUFACTURING IN MASSACHUSETTS KEEPING PACE WITH  
THE POPULATION ?

Our manufactures statistics, taken in connection with censuses of population, ought to throw some light upon the important question as to whether the population and industrial prosperity of Massachusetts are keeping pace with each other, and the demand for statistical data of this kind which is frequently made seems perfectly reasonable. But while improved census methods, now fairly well established, hold forth promise for the future in this respect, it has to be said that it is impossible to correlate figures of population and value of manufactured product which are even approximately comparable, for Census periods prior to 1895-1900, — nor can comparisons wholly satisfactory since that time be made.<sup>1</sup> An approximate idea of the extent to which the growth in population and industrial progress in Massachusetts may run parallel with each other is, however, possible; and the following table is submitted with this purpose in view:

YEARS.	Population	Percentage of Increase	Value of Product	Percentage of Increase	AVERAGE ANNUAL PERCENTAGE OF INCREASE	
					Population	Manufactures
1895. . .	2,500,183	—	\$734,652,122	—	—	—
1900. . .	2,805,346	12.21	907,626,429	23.55	2.40	5.23
1905. . .	3,003,680	7.07	1,124,002,051	28.85	1.43	5.20
1907. . .	3,128,904	4.17	1,364,431,255	21.38	1.39	7.13

It will be observed that the period actually elapsing between the date of taking the manufactures Census of 1895 and that

<sup>1</sup> Manufactures Censuses formerly included the hand trades and, "neighborhood industries" (carpentry, blacksmithing, millinery, dressmaking, etc.), which greatly swelled the aggregate volume of so-called "manufactures" particularly as regards the number of establishments. Tabulations have, however, been made for 1895 and succeeding censuses which are confined to establishments operated exclusively by some kind of motive power or in which hand power was practically a negligible quantity. In considering the limited period embraced in the table above given, the following differences in dates should be noted: The date of taking the population census of 1895 was May 1 of that year, while the Manufactures Census of 1895 was taken as of December 31, 1895; the population of 1900 was taken as of June 1, 1900, while the Manufactures Census bearing date of that year covered the twelve-month period ending June 1, 1900; the population of 1905 was taken as of May 1 of that year, while the Manufactures Census bearing date of 1905 was taken for the calendar year ending December 31, 1904. The population figures for 1907 as given are, of course, an estimate, and the figure given as the value of the manufactured product for that year was obtained from the returns upon which this report is based.