
COMBINED TEXTILES.

THE TEXTILE INDUSTRY OF THE UNITED STATES.

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Not only is the textile industry one of the most important branches of manufacture in this country and throughout the world, but its product comes into an especially intimate and personal relation to mankind because it is the material from which clothing is commonly made. It appears from the returns at the census of 1900 that the grand total value of textiles and of finished articles made from them was \$1,637,484,484. The sum is swelled by duplications. Yarn produced in one mill and entering into this total is reported by another mill as a material; and the woven cloth of the second mill, after having been reported as that mill's product, enters the tailor shop or the shirt factory as material once more. Eliminating duplications, by excluding from materials and products the value of the partly manufactured articles, the net value of products ready for direct consumption was \$1,095,127,934. Of this huge total, \$740,666,942, or over two-thirds of the whole, was the net value of the textile industry proper.

The various branches of the textile industry—the production of yarn, and its conversion, by doubling and twisting, by weaving, or by knitting—are so closely allied to each other that it is impossible radically to separate them. They may be divided sufficiently for practical purposes according to the processes employed, or, as is more customary, according to the vegetable or animal fiber which predominates in the manufacture. But it still remains true that several of the processes and different groups of these processes are combined, and that there is extensive use of two or more fibers in single establishments. A great number, in fact a large majority, of cotton-spinning factories, also weave their yarn; some of them twist and finish it into sewing thread, others knit it and make underwear. Some of them combine cotton with linen in the manufacture of towels. Many woolen and worsted mills mix cotton with wool in the production of cloth. Both cotton and woolen mills occasionally use large quantities of raw silk. Jute yarn is introduced as an adulterant in upholstery goods chiefly composed of more enduring material. The manufacturers of cordage and twine employ not only flax, hemp, jute, cotton, and other vegetable fibers, but also, to a limited extent, wool and silk.

While, therefore, it is a simple matter to classify mills according to the general nature of their business or according to the fiber chiefly used, yet it is evident that the textile industry is to be considered as a whole.

A freak of fashion may at any time cause an excessive demand for silk goods, to the detriment of the manufacturers of worsteds. A scarcity of cotton, like that which occurred during the Civil War, may compel people to change their habits and use woolen products instead of cotton. It is easy to substitute articles made from another fiber than that to which one has been accustomed; indeed, within certain limits, it is easy for manufacturers to operate machinery upon another fiber than that for which it was constructed; so that the textile industry can be treated adequately only when it is treated as a unit, based upon the spindle.

This method of considering the textile branch of manufacturing was first introduced at the Eleventh Census. It is now even more reasonable than it was ten years ago, because during the interval certain new combinations of fiber use have rendered the relations between the several industries more intimate than they were. As examples, may be mentioned the production in several large cotton mills of towels and toweling from pure linen or from linen and cotton mixed, and the use in silk mills of mercerized cotton so like silk in appearance. These new features preceded the taking of the census by so short a time that an adequate inquiry into the facts was not made in all cases, particularly with reference to the extent of the new linen industry.

Ten years ago the report upon combined textiles took cognizance only of the manufactures of wool—including hosiery and knit goods, cotton and silk—and dyeing and finishing the yarns and fabrics made from them. In the present report the chief industries based upon flax, hemp, and jute are included. Other important changes will be noticed.

At the census of 1900 there was, for the first time, a separation of cotton small wares from cotton goods proper. The establishments which manufacture such articles as tape and webbings, shoe lacings, embroideries, and the like, are not in a true sense cotton factories. Few of them spin their yarn; the machinery which they employ differs materially from that of ordinary cotton mills, and they are for the most part small establishments. They belong in the general class of textile manufactories, but not in the specific category of cotton mills.

It is proper to restore to the leading rank the cotton manufacture, which was displaced from that position during the Civil War, and has occupied the second.

rank in official statistics ever since, mainly because it stood second in the value of products. But it is evident that the reason why the nominal value of wool products exceeded that of cotton products was that the cost of material, pound for pound, is several times that of cotton. At present the cotton manufacture, exclusive of cotton small wares, stands first in the amount of capital, in the number of hands employed, in the amount of wages paid, and even in the value of products; but it is still slightly behind the wool manufacture in the cost of material used.

The tables accompanying this report do not include all the establishments which it might be strictly reasonable to include as manufacturing textiles. The facts relating to those which make belting and hose of either linen or cotton mixed with rubber, elastic fabrics, batting, and wadding, and a few other articles of which these are types, were ascertained by answers to the inquiries upon the general manufacturing schedule and were too incomplete in their specification of materials used to be included in the accompanying tables without danger of misleading results. The several industries here presented are as follows:

- Cotton goods.
- Cotton small wares.
- Worsted goods.
- Woolen goods.
- Woolen carpets.
- Felt goods.
- Wool hats.
- Hosiery and knit goods.
- Silk goods.
- Cordage and twine.
- Linen goods.
- Jute goods.
- Dyeing and finishing textiles.

The value of product reported is in all cases the gross value at the mill, save that in the case of dyeing and finishing only the value added by the processes to which the goods were subjected is reported.

THE POSITION OF THE UNITED STATES AMONG NATIONS IN THE MANUFACTURE OF TEXTILES.

In the manufacture of textiles the progress of this country as compared with that of the world at large has been very great in recent years. In general, manufacturers may be said to have been engaged during the whole national history in conquering and occupying the home market. The domestic silk industry is a thing of yesterday. In 1870 the home manufacture represented a value of only \$12,210,662. The foreign value of importations during the same year was \$24,219,981. It appears from these figures that almost two-thirds of the silk goods consumed in the United States at that time was of foreign manufacture.

The wool industry existed in the country even before the era of national independence. In the year 1870 the value of products of domestic manufactures of wool

was \$199,257,262; that of imported was \$35,032,628, or 15 per cent of the consumption of the United States, on the basis of declared foreign value. The manufacture of cotton has been conducted on a large scale for nearly a century. Before the Civil War it became a leading article of export. Nevertheless, the importation even then was of more value than the exportation. In the year 1870, selected for the present comparison in all the textiles, the value of the domestic manufacture of cotton was reported to be \$177,489,739, and the value imported was \$21,899,120, or 11.2 per cent of the total amount consumed.

Combining the three textile industries, the total consumption for the year 1870 was valued at \$466,186,303, of which home manufactures furnished \$385,034,574; and \$81,151,729, or 17.4 per cent, represents the foreign value of imports. Briefly, American manufacturers supplied rather less than five-sixths of the textile goods used in the United States.

The conditions under which the several textile industries are established in a country differ in an interesting manner. The controlling influences are the supply of the raw material and the adaptability of the people to a manufacturing life. Sheep can be raised in any country where warm clothing is needed, save in the polar regions. The spinning wheel and the handloom are among the simplest forms of machinery, on which the homespun is woven. It is therefore natural that the woolen industry should spring up in primitive communities, and among people who are too poor to buy the material of their clothing; and as population increases, as the comforts of life become more available, and as labor becomes specialized and diversified, the production by machinery of woolen cloth for sale is one of the earliest developments of the manufacturing tendency. As might therefore be expected, it is found that this department of the textile industry has a place in almost all countries in which garments made of wool fiber are needed as a protection of the body against cold. It is an interesting corollary of this principle that even in this country the manufacture is carried on in almost every state in the Union, from Maine to Texas, from Florida to Washington.

Cotton is a subtropical plant. The lint can be separated from the seed by hand, and it can be spun and woven by processes as simple as those which in primitive communities convert wool into a clothing fabric. But the labor is so great and the efficiency of machinery is so superior to that of hand work that even the poorest communities can not afford to prepare the raw material and spin and weave it in this manner. Hence, virtually the whole manufacture is abandoned to the care of capital.

Moreover, inasmuch as the improvement of machinery has cheapened the processes to a wonderful degree, it has become more and more difficult for novices to engage in the business with success. The result is that the manufacture tends greatly to concentrate, to expand

in communities where already established, and to be neglected or to languish in regions where it is newly introduced, unless favored by special advantages. Such advantages may be convenient access to supplies of raw material or peculiar adaptability of the people to a manufacturing life.

In recent years there has been an introduction of the industry or a considerable growth of it from one of these two causes, in the East Indies, in China and Japan, in Canada, and in Mexico; in some of these cases the manufacture has been directly encouraged by Government measures and could hardly have been successful without that aid. It is easy to explain the very interesting and altogether marvelous expansion of the industry in the Southern states during the last decade—the most interesting feature, in fact, concerning the development of the textile manufacture during that period—upon the principles here suggested.

The situation with respect to silk is different from that of wool or cotton. Silk goods are a luxury, or at least a semiluxury. They are not required by persons devoid of æsthetic taste. They have not the warmth-giving properties of wool. They are in general a poor as well as a costly substitute for most of the purposes to which cotton goods are put. Moreover, silk culture is a difficult and uncertain occupation, requiring constant care, and often bringing disappointment and loss even to those who have bestowed the most pains upon it. One would accordingly expect to find the production of silk flourishing in those countries only where the climate is well adapted to the growth of the mulberry tree, and where the art of caring for the silkworm during all the stages of its life history has been acquired through many generations of study and experiment.

It would also be natural to expect that the communities within which the raw material is produced would engage in its conversion into yarn and cloth, and this is the case. The sources whence the nations called "civil-

ized" first drew the fine and costly fabric of silk were India, China, and Japan, and those countries still produce articles which the Western world can hardly match. The introduction of the silkworm into central and western Europe led to an immense expansion of the manufacture in France, Austria, Switzerland, and Italy. The English, with their capacity for manufacturing, adopted the industry, relying upon imported raw silk, and it flourished for many years, but has been declining during the past half century. The Germans, nearly surrounded by countries which are extensively engaged in silk culture, although themselves producing practically no raw silk, have succeeded much better, and the history of the manufacture in the German Empire has been one of great success.

The culture of the silkworm in the United States, although often urged upon the people and many times attempted in a small way, has never proved commercially successful, and the country does not appear even among the "scattering" as a producer of raw silk. Yet under an encouraging government policy the manufacture has been firmly established. Reasons corresponding to those which caused the wool manufacture to spring up in every part of the country and which concentrated the cotton manufacture where power is cheap, where rates of transportation are low, where labor is abundant, or in the immediate vicinity of a supply of raw cotton, result in a still greater localization of the silk industry. Eleven-twelfths of all the establishments in the country are in the 5 adjoining states of Pennsylvania, New Jersey, New York, Connecticut, and Massachusetts, and of the 1,045,304 throwing spindles, 996,118—more than nineteen-twentieths of the whole—are in the mills of those states.

Table 1 shows the value of the products and the imports of cotton, wool, and silk manufactures, and percentage of imports to the total consumption, 1870 and 1900.

TABLE 1.—VALUE OF DOMESTIC PRODUCTS, EXPORTS, IMPORTS FOR CONSUMPTION, AND TOTAL CONSUMPTION OF TEXTILES, WITH PER CENT OF IMPORTS TO TOTAL CONSUMPTION: 1870 AND 1900.

	1900					1870					Per cent of imports to total consumption.	
	Value of domestic products.	Exports. ¹	Domestic consumption.	Imports for consumption. ¹	Total consumption.	Value of domestic products.	Exports. ¹	Domestic consumption.	Imports for consumption. ¹	Total consumption.	1900	1870
Total.....	\$748,447,062	\$25,556,057	\$717,891,005	\$82,214,010	\$800,105,015	\$388,957,663	\$3,923,089	\$385,034,574	\$81,151,729	\$466,186,303	10.3	17.4
Cotton manufactures ..	339,200,520	24,008,087	315,197,238	39,789,989	354,987,227	177,489,739	3,787,282	173,702,457	21,899,120	195,601,577	11.2	11.2
Wool manufactures.....	296,990,484	1,300,362	295,690,122	15,820,487	311,510,609	199,257,262	124,159	199,133,103	95,052,628	234,185,731	5.0	15.0
Silk manufactures.....	107,256,258	252,608	107,003,650	26,808,584	133,807,184	12,210,662	11,648	12,199,014	24,219,951	36,418,995	20.0	66.5

¹ Annual Reports United States Treasury Department on Commerce and Navigation of the United States, 1870 and 1900. These are foreign, and not duty-paid values.

The value now reported for hosiery and knit goods can not be divided between cotton and wool; but if it be added to the reported home production, the total value of the textiles consumed in the United States in 1900 is \$895,587,581, and the percentage imported is but 9.18. It may also be mentioned that in recent

years a great proportion of the articles classed as cotton goods imported consists of laces, embroideries, trimmings, edgings, and other merchandise of which these are the types, which are not strictly to be classified with the products of the spindle, the loom, and the knitting machine.

It is a matter of extreme difficulty to ascertain the exact standing of the United States as a producer of textiles. The statistics are collected in no other country with the care and thoroughness which characterize an American census. The figures presented by statisticians of recognized repute are necessarily estimates to a large extent; and the years for which the estimates are made do not coincide with the census years of this country, unless by accident. Nevertheless, the situation may be set forth in broad terms with much confidence, inasmuch as there are some facts having an official character which furnish trustworthy indications.

Taking first the cotton manufacture, there is the assistance of Government and commercial statistics showing the amount of cotton produced, imported, exported, and consequently the amount retained for consumption in each country. There is also the help afforded by close annual estimates by most experienced observers of the number of spindles in operation in every country of the world in which cotton is manufactured on a large scale. The following table, compiled from statistics gathered by Thomas Ellison, of Liverpool, the highest authority in the world on the subject of cotton, shows the consumption of cotton in Great Britain, on the continent of Europe, and in the United States, at various periods, namely, the average annual consumption in the five years ending with the American census years from 1830 to 1880, followed by the annual consumption in each of the years 1890 and 1900. The amounts are expressed in thousands of bales of a uniform weight of 400 pounds.

CONSUMPTION OF COTTON AT DECENNIAL PERIODS,
1830-1900.

	Great Britain, number of thousand bales.	Continent Europe, number of thousand bales.	United States, number of thousand bales.
Average for 5 years ending—			
1830	711	411	180
1840	1,156	629	255
1850	1,458	776	553
1860	2,265	1,490	813
1870	2,689	1,842	875
1880	2,924	2,455	1,548
Year 1890	4,140	4,277	12,938
Year 1900	4,079	5,720	4,599

¹ Census figures, reduced to bales of 400 pounds. Cotton used in wool manufactures included.

One might hastily infer that the United States was, in the year 1900, the leading country of the world in the manufacture of cotton. The same inference might be drawn from the statistics collected by the New York Chronicle, which, in its Cotton Crop Supplement for 1900,¹ gives the weekly consumption for the preceding years as shown in the following table, in bales of 500 pounds each. The annual consumption (52 weeks) of bales of corresponding weight, and the number reduced to bales of 400 pounds, are added for purposes of comparison with the preceding table.

¹ September 8, 1900.

WORLD'S CONSUMPTION OF COTTON, 1900.

[New York Commercial Chronicle.]

	Weekly, number of 500-pound bales.	ANNUAL.	
		Number of 500-pound bales.	Equivalent 400-pound bales.
Total	262,295	13,639,340	17,049,175
Great Britain	164,115	3,833,980	4,167,475
Continent	85,000	4,576,000	5,720,000
United States	74,148	3,855,696	4,819,620
East Indies	21,538	1,119,976	1,399,970
Japan	12,000	624,000	780,000
Canada	2,141	111,832	139,165
Mexico	353	18,356	22,945

¹The amount reported in 1900, prior to the receipt of Mr. Ellison's report, was 67,654 bales weekly. In the Cotton Crop Supplement, September 7, 1901, the amount was changed to 64,115 bales weekly.

Although the amount consumed by the countries of the European continent exceeded that consumed in the United States, the consumption in this country greatly exceeded that of any one of those countries: France, Germany, Austria, or Russia.

It is, however, universally known that Great Britain is far in the lead in the cotton manufacture. The fact is brought out in the special report on the cotton industry, that an immense proportion of the spinning in the United States is coarse or medium yarns, whereas the average spinning on the other side of the Atlantic is much finer. A better test of the comparative standing is afforded by the number of spindles. The following table, like that showing the consumption of cotton, is made up from the figures compiled by Mr. Ellison, and are partly official and partly estimated:

COTTON SPINDLES IN THE WORLD AT VARIOUS
PERIODS, IN THOUSANDS.

	1900	1897	1887	1877	1861
Great Britain	46,000	44,900	43,000	39,500	30,800
Continent of Europe	33,000	30,350	23,750	19,600	10,000
United States	19,008	16,800	18,500	10,000	5,000
India	4,400	4,000	2,400	1,280	338
Japan	1,500	970			
China	600	440			
Canada	640	560			
Mexico	460	450			

A more detailed statement of the spindles in the countries of the world in 1900 has been prepared for this report by the editor of the New York Commercial and Financial Chronicle. It is presented, together with another statement made by Mr. Hachiro H. Fukuhara, a Japanese, who has been investigating the cotton manufacture in Europe and America with a view to promoting the industry in his own country. The general correspondence of the two statements, compiled independently, is a strong point in favor of the accuracy of both. They show that this country stands next after Great Britain in the number of spindles, and that it operates more than twice as many spindles as Germany, which has the third rank.

NUMBER OF SPINDLES IN THE COUNTRIES OF THE WORLD, AS ASCERTAINED AT NEAREST AVAILABLE DATE TO 1900.

	New York Chronicle, number.	Mr. Fukuhara, number.
Total	103,383,386	103,050,677
United Kingdom	45,400,000	45,400,000
United States	18,590,515	18,100,000
Germany	17,155,600	7,884,000
Russia	26,090,889	6,000,000
France	25,089,000	5,800,000
India	4,945,783	5,002,478
Austria and Hungary	13,140,171	8,140,000
Spain	42,614,500	2,615,000
Switzerland	11,709,400	1,972,000
Italy	12,092,730	1,886,000
Japan	1,220,975	1,250,000
Poland	585,000	985,000
Belgium	1880,800	900,000
China	600,000	560,048
Canada	640,000	500,000
Mexico	2491,443	448,156
Sweden	2360,000	360,000
Holland	1269,680	350,000
Portugal	2160,000	230,000
Norway	4112,000	118,000
Greece	6970,000	70,000
Roumania	240,000	.....
Smyrna	10,000	.....

1898. 1899. 1894. 1896. 1897. 1895.

The materials for estimating the relative standing of different countries in the wool industry are less abundant and less trustworthy than those available for the cotton manufacture. There are no accurate returns, even of the consumption of wool, except in Great Britain and the United States; there is no common standard of machinery; and no return of the number of hands employed. The most recent figures, and they are merely careful and probably nearly correct estimates, are for the year 1894. They are compiled¹ from the trade circular of Helmuth Schwartz & Co., of London, who are recognized authority upon the production and consumption of wool throughout the world.

The estimate is that in the year 1894 the home production and the net importation of the United Kingdom made available for the consumption of that country aggregated 507,000,000 pounds of wool; for the Continent of Europe, 1,247,000,000 pounds; for North America, 458,000,000 pounds. The estimate of the same authority for the year 1900 gave the United Kingdom for home consumption 502,000,000 pounds. It is, perhaps, not far from the truth to assume that the consumption of five-sixths, possibly more, of the wool manufactured on the Continent of Europe of which commerce takes account is divided nearly equally among France, Germany, and Austria-Hungary. For this inference, reliance has to be placed upon statistics which are none too recent. Assuming, in order to make an estimate, that the consumption in 1892 was the same as in 1894, and that the home production of each country was the same in 1892 as in 1900, the result, stated in pounds of wool consumed, is as follows:

COUNTRIES.	Total, pounds.	Production, pounds.	Net import, pounds.
Total	1,227,500,000	217,500,000	1,010,000,000
France	457,610,000	103,610,000	354,000,000
Germany	383,090,000	49,590,000	333,500,000
Austria	386,800,000	64,300,000	322,500,000

NOTE.—The materials from which the foregoing statement is composed are to be found in the Wool Book, 1895, pages 79, 81, 82, and 85, and the Bulletin of the National Association of Wool Manufacturers for November, 1900, page 14.

¹The Wool Book, Boston: 1895, page 64.

The use of wool in the manufactures of the United States, according to the present census, amounted to 394,369,523 pounds in the year 1900; somewhat less, it will be observed, than the amount above allowed for North America in the Helmuth-Schwartz estimate for the year 1894. Although the inference can not be put forth with much confidence, all the available facts seem to suggest that, judged by the standard of wool consumed—by no means a perfect test—the United States stands after Great Britain, the leading country, and France the second, and on a fairly even footing with Germany and Austria.

The report upon the silk manufacture gives a trustworthy exhibit of the position of the United States in that branch of the textile industry, in the following table:

VALUE OF SILK PRODUCTS OF EUROPE AND THE UNITED STATES: 1900.¹

COUNTRIES.	Value of products.	Percent of products.
Total	\$395,000,000	100.0
France	122,000,000	30.9
United States	92,000,000	23.3
Germany	78,000,000	19.6
Switzerland	38,000,000	9.6
Russia (in Europe)	21,000,000	5.3
Austria	17,000,000	4.3
Great Britain	15,000,000	3.8
Italy	13,000,000	3.3
Spain and Portugal	4,000,000	1.0

¹International Universal Exposition at Paris; Report of United States Commissioner Peck; Report on silk fabrics, contributed by Franklin Allen, jr., of the United States, in the silk section (Class 83). Government Printing Office, Washington, D. C., 1901, page 565.

It appears that in value of production the United States is surpassed by France alone, and reasons are given in the report for an opinion that the excess is swelled by some items that should not be reckoned to the credit of France. At the rate of progress made by the United States it seems probable that at the next enumeration it will take the first position among silk manufacturing nations, if it has not already (1902) done so. It may be remarked that value of production is a better test of the relative standing of nations in the case of silk than it is in the case of cotton, where so much depends upon the fineness of spinning, or than in the case of wool, where the difference is so wide in the value per pound of material used in the manufacture of carpets and of fine worsted cloth.

A general summary shows that the United States is second in the cotton industry, nearly tied for the third place in woollens, and second in silk. But the country so far exceeds any of its rivals, except Great Britain, in cotton, that the position as the second manufacturing nation in the world in textiles will be conceded to be beyond dispute. It is interesting, therefore, to inquire how the United States stands in comparison with the United Kingdom, which alone surpasses it in this respect. The only available test is the number of hands employed. The Annual Report for 1900 of the Chief Inspector of Factories and Workshops, published as a

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"blue book," gives the number of employees in all the textile factories in the United Kingdom in 1899. The numbers are given herewith, and the corresponding numbers of employees in American textile factories in 1900 are given for purposes of comparison:

	United Kingdom, 1899, wage-earners, number.	United States, 1900, wage-earners, average number.
Total.....	1,010,162	681,675
Cotton.....	526,107	502,861
Wool, worsted, and shoddy.....	256,425	159,108
Silk.....	85,461	65,416
Hosiery.....	85,464	88,887
Flax, hemp, and jute.....	156,705	20,903

Only wage-earners are reported in the figures for the United States, and apparently none others are included in the British returns. So far as these facts are a safe basis for a conclusion, the importance of the textile industry as a whole in the United States is about three-fifths as great as the same industry in Great Britain. Were the flax, hemp, and jute manufactures, in which this country is greatly inferior, to be eliminated, the proportion would be nearly three-fourths.

A GENERAL SURVEY OF THE TEXTILE INDUSTRY.

Table 2, in continuation of that which was first presented at the Eleventh Census, exhibits the general condition of each branch of the textile manufacture, and of the industry as an entity, at decennial periods for the last half century.

TABLE 2.—COMPARATIVE SUMMARY, BY INDUSTRIES: 1850 TO 1900.

INDUSTRIES.	Year.	Number of establishments.	Capital.	SALARIED OFFICIALS, CLERKS, ETC.		WAGE-EARNERS.		Miscellaneous expenses.	Cost of materials used.	Value of products.
				Number.	Salaries.	Average number.	Total wages.			
Combined textiles.....	1900	4,312	\$1,042,997,577	16,822	\$23,289,162	661,451	\$209,022,447	\$68,122,916	\$521,845,200	\$981,494,566
Cotton manufacture:										
Cotton goods.....	1900	973	460,842,772	4,718	7,123,574	297,929	85,126,810	21,650,144	178,441,890	382,806,156
Cotton small wares.....	1900	82	6,397,885	189	226,625	4,932	1,563,442	462,684	3,110,137	6,394,104
Wool manufacture.....	1900	1,414	310,179,749	4,495	6,455,495	159,108	57,933,817	17,829,982	181,159,127	296,990,484
Silk manufacture.....	1900	483	81,082,201	2,657	3,134,352	65,416	20,982,194	10,264,208	62,406,665	107,256,258
Hosiery and knit goods.....	1900	921	81,860,604	2,809	3,124,798	88,887	24,858,627	6,599,865	51,071,859	95,482,566
Flax, hemp, and jute.....	1900	141	41,991,762	641	957,190	20,903	6,331,741	2,678,286	32,197,885	47,601,607
Dyeing and finishing textiles.....	1900	298	60,643,104	1,318	2,267,128	29,776	12,726,816	4,187,947	17,958,187	44,968,381
Combined textiles.....	1890	4,276	787,705,810	10,637	12,539,920	517,237	168,488,982	44,788,668	447,546,540	759,262,288
Cotton manufacture.....	1890	905	354,020,843	2,709	3,464,734	218,876	66,024,588	16,716,524	154,612,979	267,981,724
Wool manufacture.....	1890	1,693	245,886,743	3,052	4,057,695	154,271	54,389,775	16,622,263	107,238,987	270,527,511
Silk manufacture.....	1890	472	51,007,637	1,581	1,917,877	49,382	17,762,441	4,259,628	51,004,425	87,298,464
Hosiery and knit goods.....	1890	796	50,607,738	1,621	1,685,153	59,638	16,578,119	3,627,245	85,861,585	67,241,013
Flax, hemp, and jute.....	1890	162	27,731,649	458	609,170	15,619	4,872,389	1,481,982	20,148,344	37,813,021
Dyeing and finishing textiles.....	1890	248	38,450,800	666	895,291	19,601	8,911,720	3,181,081	12,885,220	28,900,560
Combined textiles.....	1880	4,018	412,721,496	(²)	(²)	⁵ 384,251	105,050,666	(³)	802,709,894	592,678,488
Cotton manufacture ⁴	1880	756	208,280,846	.....	.....	⁵ 174,659	42,040,510	.....	102,206,847	192,090,110
Wool manufacture.....	1880	2,330	143,512,278	.....	.....	132,672	40,687,612	.....	149,160,600	238,085,686
Silk manufacture.....	1880	382	19,125,300	.....	.....	31,837	9,146,705	.....	22,467,701	41,033,045
Hosiery and knit goods.....	1880	359	15,579,691	.....	.....	28,885	6,701,475	.....	15,210,951	29,187,227
Dyeing and finishing textiles.....	1880	191	26,223,981	.....	.....	16,698	6,474,864	.....	13,664,295	82,297,420
Combined textiles.....	1870	4,790	297,694,243	(²)	(²)	274,943	86,565,191	(³)	358,249,102	520,886,764
Cotton manufacture.....	1870	956	140,706,291	.....	.....	135,869	39,044,132	.....	111,736,986	177,489,739
Wool manufacture.....	1870	3,208	121,451,059	.....	.....	105,071	35,928,150	.....	124,318,792	199,257,262
Silk manufacture.....	1870	86	6,231,130	.....	.....	6,649	1,942,286	.....	7,817,569	12,210,662
Hosiery and knit goods.....	1870	248	10,981,280	.....	.....	14,788	4,429,085	.....	9,885,828	18,411,564
Dyeing and finishing textiles.....	1870	292	18,374,503	.....	.....	13,066	5,221,538	.....	9,539,992	⁶ 118,017,537
Combined textiles.....	1860	3,027	150,080,852	(²)	(²)	194,082	40,868,462	(³)	112,842,111	214,740,614
Cotton manufacture.....	1860	1,091	98,538,269	.....	.....	122,028	23,940,108	.....	57,285,534	115,681,774
Wool manufacture.....	1860	1,476	38,814,422	.....	.....	50,419	11,699,630	.....	48,447,048	73,454,000
Silk manufacture.....	1860	139	2,926,980	.....	.....	5,435	1,050,224	.....	3,901,777	6,607,771
Hosiery and knit goods.....	1860	197	4,035,510	.....	.....	9,103	1,661,972	.....	3,202,317	7,280,606
Dyeing and finishing textiles.....	1860	124	5,718,871	.....	.....	7,097	2,001,528	.....	5,095,435	11,716,438
Combined textiles.....	1850	3,025	112,513,947	(²)	(²)	146,877	(²)	(³)	76,715,959	128,769,971
Cotton manufacture.....	1850	1,094	74,500,931	.....	.....	92,286	(⁷)	.....	84,895,056	61,869,184
Wool manufacture.....	1850	1,675	31,971,681	.....	.....	45,438	(⁷)	.....	28,881,533	48,008,779
Silk manufacture.....	1850	67	678,300	.....	.....	1,743	(⁷)	.....	1,093,860	1,809,476
Hosiery and knit goods.....	1850	85	544,735	.....	.....	2,925	(⁷)	.....	415,113	1,028,102
Dyeing and finishing textiles.....	1850	104	4,818,850	.....	.....	5,105	(⁷)	.....	11,540,347	15,464,430

¹ Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this table. (See detailed summary for each industry.)

² Not reported separately.

³ Not reported.

⁴ In addition to these data there were received at the census of 1880 returns for 249 mills, classed as "special mills," engaged in working raw cotton, waste, or cotton yarn into hosiery, webbing, tapes, and fancy fabrics, and mixed goods or other fabrics, which are not sold as specific manufactures of wool or cotton. These 249 establishments reported \$11,224,448 capital, 12,928 employees, \$3,573,909 wages, \$2,398,385 cost of cotton consumed, \$13,860,273 value of products, and should be considered in making comparisons. In 1890 this class of mills is reported under a number of different heads, although some of them may be included in the totals for the textile industries presented in the figures for 1890.

⁵ Includes 2,116 officers and clerks, whose salaries were not reported.

⁶ At the census of 1870 the value of the fabric itself was reported, whereas in all subsequent censuses merely the value added to such fabric by the process of dyeing and finishing is given.

⁷ This item was not fully reported at the census of 1850.

Great reliance can not be placed upon any manufacturing census of the United States prior to that of 1870, at which time a scientific method was employed for the first time, and since which the returns have been more thorough, more carefully scanned, and more accurate. But inasmuch as the rule adopted for ascertaining the capital employed has been changed at each census, except for 1890 and 1900, the indication of increase can be taken as only approximately true. With this caution it appears that the capital invested in textile manufactures, omitting flax, hemp, and jute, has multiplied more than eight times in fifty years, and that the value of products is almost sevenfold that reported in 1850. Neither capital nor value of products is a fair test of the increase of the industry, the first item for the reason just given, and the value of products because there has been a progressive decrease in the cost of the fibers which constitute the raw material, and hence in the value of the pound of yarn or the yard of cloth. Another standard of comparison is afforded by the number of employees. Table 3 shows the percentage of increase in the average number of wage-earners and in the value of products.

TABLE 3.—PER CENT OF INCREASE IN AVERAGE NUMBER OF WAGE-EARNERS AND IN VALUE OF PRODUCTS: 1850 to 1900.¹

PERIODS.	Percent of increase in—	
	Average number of wage-earners.	Value of products.
1850 to 1900	336.1	586.4
1890 to 1900	27.7	22.4
1880 to 1890	30.6	35.5
1870 to 1880	39.8	2.4
1860 to 1870	41.7	142.3
1850 to 1860	32.1	66.8

¹ Not including flax, hemp, and jute.

It appears that the total increase in the number of wage-earners in the textile manufactures, excluding flax, hemp, and jute, for which comparative figures are not available, during the half century has been 336.1 per cent. The rate of increase has averaged 34.4 during each decennial period. The rate during the last decade was the smallest of those reported, but it was based upon a much larger aggregate, so that numerically the increase was greater than in the period 1880-1890. It is an interesting fact that the increase has in each decade, except that of 1850-1860, exceeded the general growth of population in spite of the enormous increase in the efficiency of machinery, which makes the productive power of one man's labor many times as great as it was at the beginning of the half century. In con-

sidering the statement of the percentage of increase in the value of products, full account should be taken of the disturbance of all estimates of this sort which include the period from 1860 to 1880. Prices were greatly inflated during the first half of the twenty-year period by the depreciation of the monetary standard, and also by the scarcity of cotton, which made the price exceedingly high. During the last half of the period prices gradually declined, owing to the restoration of normal conditions in the cotton market and the return to a gold basis.

NUMBER OF ESTABLISHMENTS.

The number of establishments engaged in all the textile industries, except flax, hemp, and jute, has increased since 1850 from 3,025 to 4,171, or 37.9 per cent. The number has shown a positive decrease since 1870. The gross number at the last 4 censuses has been 4,790, 4,018, 4,114, and 4,171, respectively. Yet the number of silk factories has increased largely, and there has been a great development of the cotton industry in the South, involving the installation of hundreds of new establishments. The decrease has mostly occurred in the number of establishments manufacturing wool. Nevertheless, a somewhat similar process is going on in all branches of the industry, an abandonment and final closing of small establishments and a consolidation akin to that which is taking place in all other industries.

This tendency is marked, to a certain extent, in the case of cotton by the very extensive building of new mills in the Southern states. It is fully apparent in the case of wool for a reason which will be apparent to all persons who are aware of the difference in the conditions under which the two industries are conducted. It will be seen that the average capital reported by the 978 cotton manufacturing establishments is more than \$473,000; the average of those engaged in the manufacture of wool is less than \$220,000. Ten years ago the average capital in the latter industry was less than \$150,000. Most cotton factories are owned and operated by corporations; a large number of woolen factories are owned by individuals or firms, some of which are small producers, chiefly for local consumption. The tendency of textile manufactures both to concentrate and to group themselves in favorable regions is most marked, and is likely to be more apparent as time passes.

THE GENERAL GROWTH IN TWENTY YEARS.

Table 4 presents a comparative summary of the leading facts relating to the industry as a whole, not including flax, hemp, and jute, in 1880, 1890, and 1900, with the per cent of increase for each decade.

MANUFACTURES.

TABLE 4.—COMPARATIVE SUMMARY, NOT INCLUDING FLAX, HEMP, AND JUTE, 1880 TO 1900, WITH PER CENT OF INCREASE FOR EACH DECADE.

	DATE OF CENSUS.			PER CENT OF INCREASE.	
	1900	1890	1880	1890 to 1900	1880 to 1890
Number of establishments.....	4,171	4,114	4,018	1.4	2.4
Capital.....	\$1,001,005,815	\$789,973,661	\$412,721,406	35.3	79.3
Salaries of officials, clerks, etc., number.....	16,181	110,179	(²)	59.0	.....
Salaries.....	\$22,381,972	\$11,930,750	(²)	87.2	.....
Wage-earners, average number.....	640,548	601,718	384,251	27.7	30.6
Total wages.....	\$202,690,706	\$163,616,593	\$105,050,666	23.9	55.8
Men, 16 years and over.....	288,871	216,345	159,382	33.5	35.7
Wages.....	\$114,959,153	\$91,038,323	(²)	26.3	.....
Women, 16 years and over.....	283,638	243,589	169,506	16.4	48.5
Wages.....	\$78,084,564	\$66,644,785	(²)	17.2	.....
Children, under 16 years.....	68,039	41,784	55,063	62.8	24.1
Wages.....	\$9,646,984	\$5,933,485	(²)	62.6	.....
Miscellaneous expenses.....	\$60,444,680	\$48,356,786	(⁵)	39.4	.....
Cost of materials used.....	\$489,147,315	\$421,398,196	\$302,709,894	16.1	39.2
Value of products.....	\$888,892,959	\$721,949,262	\$532,673,488	22.4	35.5

¹ Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this table. (See detailed summary for each industry.)

² Not reported separately.

³ Includes 2,115 officers and clerks whose salaries are not reported.

⁴ Decrease.

⁵ Not reported.

The comparison of all the items in combination gives a better measure of growth than can be found in any single item of the statement. It will be seen that as to all the items which were reported in the enumeration of 1880 there was an increase in the ensuing decade, with the single exception of children employed. The decrease in this item was due to a combined legislative and social movement in the Northern states to eliminate child labor as far as practicable. For the decade from 1890 to 1900 there was an increase in every item, ranging in amounts from 1.4 per cent in the number of establishments to 87.2 per cent in the salaries of office clerks, etc. It is scarcely necessary to say that the increase in salaried employees is rather apparent than real, and is due to the transfer to this item of superintendents, overseers, etc., who were reported in 1890 with wage-earners. The next largest increase is that in the number of children employed, 62.8 per cent, and of their wages, 62.6 per cent. This reversal of the movement previously noted was a consequence of the

immense increase of cotton manufacturing in the South, where it was necessary to enlist all the labor procurable.

Neither of the items showing a minimum or a maximum of increase is of much weight in estimating the growth of the industry, but it will be seen that the reported increase of capital, 35.3 per cent; of wage-earners, 27.7 per cent; of wages, 23.9 per cent; and of miscellaneous expenses, 39.4 per cent, are sufficiently uniform to give a fair indication of the progress that has been made. The fact that the cost of materials has increased only 16.1 per cent, and the value of products only 22.4 per cent, is explainable by the large decrease in the average price of the raw materials used, which is reflected in the value of products. The quantity of product shows an increase corresponding to that of the other items mentioned.

CAPITAL INVESTED.

Table 5 presents a summary of the capital invested in the several branches of the textile industry, 1840 to 1900, inclusive.

TABLE 5.—COMPARATIVE SUMMARY OF CAPITAL: 1840 TO 1900.

DATE OF CENSUS.	Total.	Cotton manufacture. ¹	Wool manufacture. ²	Silk manufacture.	Hosiery and knit goods	Flax, hemp, and jute. ³	Dyeing and finishing textiles
1900.....	\$1,042,997,577	\$467,240,157	\$310,179,749	\$81,082,201	\$81,860,604	\$41,991,762	\$60,648,104
1890.....	767,705,310	354,020,843	245,886,743	51,007,537	50,607,738	27,781,649	38,459,800
1880.....	412,721,406	208,280,346	143,512,278	19,125,300	15,579,591	.....	26,223,981
1870.....	297,694,243	140,706,291	121,451,059	6,231,130	10,931,260	.....	18,374,503
1860.....	150,080,852	98,585,269	38,814,422	2,926,980	4,085,510	.....	5,718,671
1850.....	112,513,947	74,500,931	31,971,631	678,300	544,735	.....	4,818,350
1840.....	66,867,483	51,102,359	15,765,124	.....	(⁴)	.....	.....

¹ Includes cotton goods and cotton small wares.

² Includes worsted goods; woolen goods; carpets and rugs, other than rag; felt goods, and wool hats.

³ Includes cordage and twine; jute and jute goods, and linen goods; also two establishments classified in 1890 as "linen thread."

⁴ Not reported separately.

While the method of ascertaining the capital has been changed at nearly every census the statement is nevertheless interesting. The successive changes have in general had the result of including more and more of the actual capital employed; that is to say, at the earlier censuses the capital stated was merely the nominal capital of corporations or the estimated capital of individuals and firms. The method pursued at the censuses of 1890 and 1900 has been to sum the value of plant and to include also such items as stock in process, bills receivable, etc., thus including in the capital the accumulation which has been invested in the business and the capital of others than the owners which has been borrowed and practically invested in the manufacture. In this way the reported capital shows a much larger increase than would have been exhibited if the original method had been followed.

It will be seen that the largest amount of capital was, at every census, that invested in cotton manufacture. At the beginning of the period, 1840, it was more than three times that invested in the wool manufacture, and at the census of 1900 it was still more than 50 per cent greater than that of the wool manufacture. The actual increase, however, has been more than \$400,000,000, against a little less than \$300,000,000 in wool. The capital invested in wool in 1900 was almost twenty times that reported in 1840. The growth of the silk manufacture and that of hosiery and knit goods, estimated by their capital, were almost the same from 1850 to 1900, and the rate of growth of each from decade to decade has been also quite uniform. Flax, hemp, and jute manufactures were first reported separately in

1890, and during the last decade increased about 50 per cent. The dyeing and finishing industry also shows a large growth during each ten-year period.

COST OF MATERIALS AND VALUE OF PRODUCTS.

Tables 6 and 7 should be considered together. Table 6 shows the cost of materials and value of products for each branch of the industry in 1890 and 1900, and also, for each census, the cost of materials per \$100 of products. Table 7 shows the value of products for each branch of the industry from the earliest period for which the foundation for a reasonable estimate exists.

TABLE 6.—COMPARATIVE SUMMARY, COST OF MATERIALS, VALUE OF PRODUCTS, AND COST OF MATERIALS PER \$100 OF PRODUCTS: 1890 AND 1900.

INDUSTRIES.	Year.	Cost of materials used.	Value of products.	Cost of materials per \$100 of products.
Cotton manufacture ¹	1900	\$176,551,527	\$339,200,320	\$52.05
	1890	154,912,979	267,931,724	57.81
Wool manufacture ²	1900	181,159,127	296,990,484	61.00
	1890	167,233,987	270,527,511	61.82
Silk manufacture.....	1900	62,406,665	107,256,258	58.18
	1890	61,004,425	87,298,454	58.43
Hosiery and knit goods.....	1900	51,071,859	95,482,566	58.49
	1890	35,861,585	67,241,013	53.33
Flax, hemp, and jute ³	1900	32,197,885	47,601,607	67.64
	1890	26,148,344	37,318,021	70.08
Dyeing and finishing textiles...	1900	17,953,137	44,963,331	39.94
	1890	12,385,220	28,900,560	42.85

¹ Includes cotton goods and cotton small wares.
² Includes worsted goods; woollen goods; carpets and rugs, other than rag; felt goods; and wool hats.
³ Includes cordage and twine; jute and jute goods; and linen goods; also 2 establishments classified in 1890 as "linen thread."

TABLE 7.—COMPARATIVE SUMMARY, VALUE OF PRODUCTS: 1810 TO 1900.

DATE OF CENSUS.	Total.	Cotton manufacture. ¹	Wool manufacture. ²	Silk manufacture.	Hosiery and knit goods.	Flax, hemp, and jute. ³	Dyeing and finishing textiles.
1900.....	\$931,494,556	\$339,200,320	\$296,990,484	\$107,256,258	\$95,482,566	\$47,601,607	\$44,963,331
1890.....	759,262,283	267,931,724	270,527,511	87,298,454	67,241,013	37,318,021	28,900,560
1880.....	532,673,488	192,090,110	238,085,686	41,083,045	29,167,227	.....	32,297,420
1870.....	520,386,764	177,489,739	199,257,262	12,210,662	18,411,564	.....	4118,017,587
1860.....	214,740,614	115,631,774	73,454,000	6,607,771	7,280,606	.....	11,716,468
1850.....	128,769,971	61,869,184	48,608,779	1,809,476	1,028,102	.....	15,454,430
1840.....	67,047,452	46,350,453	20,690,999	.....	.....	.....	.....
1830.....	37,062,981	22,534,815	14,523,166	.....	.....	.....	.....
1820.....	9,247,225	4,384,157	4,413,068	.....	.....	.....	.....
1810.....	51,685,785	526,076,997	025,608,788	.....	.....	.....	.....

¹ Includes cotton goods and cotton small wares.
² Includes worsted goods; woollen goods; carpets and rugs, other than rag; felt goods; and wool hats.
³ Includes cordage and twine; jute and jute goods; linen goods; and two establishments in 1890 classified as "linen thread."
⁴ At the census of 1870 the value of the fabric itself was reported, whereas in all subsequent censuses merely the value added to such fabric by the process of dyeing and finishing is given.
⁵ Includes manufactures of cotton and flax in families and otherwise.
⁶ Includes manufactures of wool in families and otherwise.

The comparison between cost of materials and value of products reflects the decline already noted in the cost of the several fibers used in the manufacture. The decline is most marked in the case of cotton, where the cost of materials has declined \$5.76 in \$100 of product, whereas in wool and silk the decline has been fractional. There are influences which serve to make the present cost of materials more uniform than would be expected from the large difference in the price per pound of cotton, wool, and silk. Thus, the percentage of amount

employed in the wool manufacture is much greater than in cotton, and the higher relative cost of labor due to that fact neutralizes, to a certain extent, the greater cost of wool per pound. On the other hand, the cost of materials in flax, hemp, and jute—the most inexpensive materials entering into the textile industry—shows a greater percentage than either of the other branches, owing to the small amount of labor required for handling a great quantity of material.

The table which shows the value of product during

the Nineteenth century makes use of one of the two only standards that are possible for estimating the relative importance of the several industries at the close of each decade. The figures given for 1810, 1820, 1830, and 1840 are taken from the report made to James Guthrie, Secretary of the Treasury in 1855, the most reliable authority for these years. The cotton manufacture was begun in Pawtucket, R. I., in 1791. Prior to the War of 1812 there was no mill in the country which carried on both spinning and weaving under the same management, but the number of spinning mills was large.

No statement of the value of the wool manufacture has been made prior to the year 1820. It will be seen that at that time the cotton manufacture was more than five times as great in value, according to the estimate, as the wool. In 1830 wool was more than half as important as cotton. From that time there was a steady increase of both industries, which has been continued ever since. Cotton greatly outranked wool in 1860, but the interruption of the cotton manufacture which resulted from the Civil War gave wool an advantage, which is to be seen in the returns for 1870 and 1880, and to a very slight extent in 1890; but at the present census cotton has again resumed the leadership which before the Civil War it held so long.

The silk manufacture first appears in 1850, and at the same time the hosiery and knit goods industry was reported separately from the wool manufacture. Both of these industries have grown enormously, and at the present time the value of the silk manufacture is more than one-third that of wool, and nearly one-third that of cotton; and knit goods lag but little in the rear.

The flax, hemp, and jute industry has always existed, and no doubt at the beginning of the Government under the Constitution the production of cordage far exceeded in value that of any other branch of the manufacture now classed as textile. It has assumed great importance in modern industry in consequence of the immense demand for binding twine.

The increase of dyeing and finishing has, of course, kept pace with the other textile industries of which it is the necessary concomitant. It should be noted that

the amount reported as the value of dyeing and finishing in 1870 represents the value of the finished product. For every other enumeration it is simply the value added to the product of other establishments.

CONSUMPTION OF TEXTILE FIBERS.

Table 8 presents a statement of the consumption of textile fibers, in pounds, from 1840 to 1900, and furnishes a measure of the relative growth of the cotton, wool, and silk industries.

TABLE 8.—CONSUMPTION OF TEXTILE FIBERS: 1840 TO 1900.

YEARS.	Cotton, pounds. ¹	Wool, pounds. ²	Silk, pounds.
1900	1,910,509,193	412,323,430	9,700,770
1890	1,193,374,041	372,707,413	6,376,881
1880	798,344,832	296,192,229	2,690,482
1870	430,781,937	219,070,174	684,488
1860	443,845,378	98,379,785	402,905
1850	288,558,000	70,862,829	.....
1840	126,000,000	.....	.....

¹ Includes cotton consumed in establishments classed as cotton goods, cotton small wares; woolen goods, worsted goods, carpets and rugs, other than rag; felt goods; wool hats; and hosiery and knit goods.

² Includes wool consumed in establishments classed as woolen goods; worsted goods, carpets and rugs, other than rag; felt goods; wool hats; and hosiery and knit goods.

The indication of Table 8 is substantially the same as that of the table showing the value of products. It will be seen that whereas there was a large increase in the amount of wool used at each enumeration, there was a decrease of cotton from 1860 to 1870, and that during the twenty-year period from 1860 to 1880 the amount of wool used increased threefold, whereas the amount of cotton did not double itself. During the last decade the increase of wool has been little more than 10 per cent, whereas the increase of cotton has been more than 60 per cent.

EMPLOYEES AND THEIR WAGES.

Table 9 presents the total number of wage-earners in each branch of the industry, classified as men, women, and children, and the wages earned during the census year 1900.

TABLE 9.—AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES, BY INDUSTRIES: 1900.

INDUSTRIES.	TOTAL.		MEN, 16 YEARS AND OVER.		WOMEN, 16 YEARS AND OVER.		CHILDREN, UNDER 16 YEARS.	
	Average number.	Wages.	Average number.	Wages.	Average number.	Wages.	Average number.	Wages.
Total	661,451	\$209,022,447	298,867	\$118,783,713	292,286	\$80,258,716	70,298	\$9,980,018
Cotton manufacture:								
Cotton goods	297,929	85,126,810	134,354	46,923,365	123,709	32,017,933	39,866	5,285,012
Cotton small wares	4,932	1,563,442	1,367	671,516	3,178	828,732	392	63,194
Wool manufacture ¹	159,108	57,983,817	83,371	36,412,872	64,141	19,549,423	11,596	1,971,522
Silk manufacture	65,416	20,982,194	24,206	10,699,483	34,797	9,377,696	6,413	905,015
Hosiery and knit goods	83,387	24,358,627	21,154	8,890,723	53,565	14,243,808	8,668	1,224,091
Flax, hemp, and jute ²	20,903	6,331,741	9,996	3,824,555	8,648	2,174,152	2,259	333,034
Dyeing and finishing textiles	29,776	12,726,816	24,419	11,361,194	4,258	1,166,972	1,104	198,150

¹ Includes worsted goods; woolen goods; carpets and rugs, other than rag; felt goods; and wool hats.

² Includes cordage and twine; jute and jute goods; and linen goods.

The striking fact appears that the average number of wage-earners employed during the entire year in the manufacture and finishing of all the cloth necessary for a population of over 75,000,000 was but 640,548, the number employed in flax, hemp, and jute being deducted from the total shown in this table. It is a remarkable illustration of the power of machinery that much less than one person in a hundred was required to furnish the materials for the clothing of the American people. The

number of persons employed in the cotton manufacture, including cotton small wares, was almost twice as great as that in the wool manufacture, which again was nearly three times the number of persons employed in silk mills.

Table 10 shows the average number of wage-earners, men, women, and children, in the several branches of the industry and the percentage that each is of the total for 1880, 1890, and 1900.

TABLE 10.—AVERAGE NUMBER OF WAGE-EARNERS, AND PROPORTION OF MEN, WOMEN, AND CHILDREN: 1880 TO 1900.

	Year.	AVERAGE NUMBER OF WAGE-EARNERS.				PER CENT OF TOTAL.		
		Total.	Men, 16 years and over.	Women, 16 years and over.	Children, under 16 years.	Men.	Women.	Children.
Total	1900	661,451	298,867	292,286	70,298	45.2	44.2	10.6
	1890	517,287	223,712	250,512	43,013	43.3	48.4	8.3
	1880	384,251	159,382	169,806	55,063	41.5	44.2	14.3
Cotton manufacture	1900	302,861	135,721	126,882	40,258	44.8	41.9	13.3
	1890	218,876	88,837	106,607	23,432	40.6	48.7	10.7
	1880	174,659	61,760	84,558	28,341	35.4	48.4	16.2
Wool manufacture	1900	159,103	83,371	64,141	11,596	52.4	40.8	7.3
	1890	154,271	78,550	64,944	10,777	50.9	42.1	7.0
	1880	132,672	67,942	49,107	15,628	51.2	37.0	11.8
Silk manufacture	1900	65,416	24,206	34,797	6,413	37.0	53.2	9.8
	1890	49,382	17,602	28,914	2,866	35.6	58.6	5.8
	1880	31,337	9,375	16,396	5,566	29.9	52.3	17.8
Hosiery and knit goods	1900	88,387	21,154	53,565	8,668	25.4	64.2	10.4
	1890	59,588	14,846	40,826	3,916	24.9	68.5	6.6
	1880	23,885	7,517	17,707	3,661	26.0	61.3	12.7
Flax, hemp, and jute	1900	20,903	9,996	8,648	2,259	47.8	41.4	10.8
	1890	15,519	7,367	6,923	1,229	47.5	44.6	7.9
Dyeing and finishing textiles	1900	29,776	24,419	4,253	1,104	82.0	14.3	3.7
	1890	19,601	16,510	2,298	793	84.2	11.7	4.1
	1880	16,698	12,788	2,038	1,872	76.6	12.2	11.2

¹Includes 2,115 officers and clerks whose salaries are not reported.

Table 10 shows that the total number of wage-earners increased from 1880 to 1890, and from 1890 to 1900, in each case, by about 140,000. To this number the wool industry contributed but slightly (the total addition in twenty years being only 26,436), whereas the number of wage-earners in cotton, in silk, in hosiery, in flax, hemp, and jute, and in dyeing and finishing all increased largely. The increase in the number of men during the past decade was 75,155; of women, 41,774; of children, 27,285. The preponderance of increase in the case of men is shown most clearly in the columns showing the percentage. In the industry as a whole the number of men in a hundred employed has increased from 41.5 in 1880 to 43.3 in 1890 and to 45.2 in 1900. The proportion of women showed an increase from 1880 to 1890 of from 44.2 to 48.4, but during the past decade has declined to 44.2. The proportion of children had decreased in the twenty years from 14.3 to 10.6, but shows an increase during the last decade, owing to circumstances which have already been mentioned.

These several movements affecting the proportionate number of men, women, and children are seen most plainly in the case of the cotton manufacture, where the proportion of men has increased in twenty years from 34.4 to 44.8, and during the same period the proportion of women has decreased from 48.4 to 41.9. The causes of the shifting of employment from women to men is discussed in the report upon the cotton manufacture. So far as the other industries are concerned, there has been little change, but that which has taken place corresponds, so far as men are concerned, to the changes just noted, but a considerable decrease in the number of children has, in some cases, resulted in an increase in the number of women employed.

GEOGRAPHIC DISTRIBUTION.

Table 11 presents a comparative summary of the industry by states arranged geographically, exclusive of flax, hemp, and jute for 1880, 1890, and 1900.

MANUFACTURES.

TABLE 11.—COMPARATIVE SUMMARY, NOT INCLUDING FLAX, HEMP, AND JUTE, BY STATES ARRANGED GEOGRAPHICALLY: 1880 TO 1900.

STATES.	Year.	Number of establishments.	Capital.	SALARIED OFFICIALS, CLERKS, ETC.		WAGE-EARNERS.		Miscellaneous expenses.	Cost of materials used.	Value of products.
				Number.	Salaries.	Average number.	Total wages.			
United States.....	1900	4,171	\$1,001,005,815	16,181	\$22,381,972	640,548	\$202,690,706	\$60,444,630	\$489,147,315	\$888,892,959
	1890	4,114	789,973,661	10,179	11,930,750	501,718	163,616,593	43,356,736	421,898,196	721,949,262
	1880	4,018	412,721,496	(²)	(³)	³ 384,251	105,050,666	(⁴)	302,709,894	632,673,488
New England states.....	1900	1,124	524,899,362	5,633	9,527,370	286,469	101,934,256	26,403,681	222,297,451	412,875,975
	1890	1,210	426,365,888	3,524	4,915,773	256,018	86,973,173	24,501,029	211,974,959	365,613,324
	1880	1,214	261,561,147			217,674	60,611,202		172,223,778	310,542,352
Maine.....	1900	101	36,720,038	350	555,963	21,938	7,369,946	2,858,238	15,524,745	29,394,372
	1890	107	30,990,097	217	302,438	19,794	6,277,442	1,867,560	14,495,290	24,911,165
	1880	126	19,932,406			15,899	4,204,778		12,148,526	21,470,597
New Hampshire.....	1900	97	44,107,098	382	622,487	29,533	10,088,051	2,264,958	20,675,482	37,495,180
	1890	113	43,891,412	380	419,199	29,243	9,624,933	2,339,287	22,225,159	37,250,364
	1880	126	31,247,024			24,743	6,904,009		18,809,037	32,787,368
Vermont.....	1900	43	6,724,920	109	147,128	3,613	1,253,388	282,863	3,373,931	5,657,217
	1890	45	5,491,250	70	72,488	2,970	1,043,588	301,466	2,626,232	4,744,325
	1880	53	3,750,257			3,204	807,048		2,381,935	4,671,041
Massachusetts.....	1900	483	273,562,835	2,713	4,744,037	149,039	53,819,143	13,072,020	113,354,739	213,612,791
	1890	533	215,254,813	1,711	2,498,825	125,103	43,091,332	12,930,047	107,465,024	184,938,074
	1880	496	120,443,376			106,748	29,801,616		84,228,717	152,988,522
Rhode Island.....	1900	210	97,444,185	1,116	2,084,498	49,377	17,863,957	5,222,431	42,468,004	77,988,396
	1890	204	70,699,470	645	821,685	47,423	16,013,599	4,260,785	37,911,493	67,005,615
	1880	194	46,989,447			36,622	10,127,287		27,708,649	51,383,569
Connecticut.....	1900	190	66,340,241	963	1,423,307	32,469	11,589,771	3,203,171	26,910,550	48,728,019
	1890	203	60,038,346	551	801,188	31,477	10,922,234	2,801,394	27,251,161	46,757,780
	1880	214	39,193,637			30,493	8,766,404		26,446,914	47,271,800
Middle states.....	1900	1,969	307,765,675	7,155	8,924,195	221,944	74,632,681	26,481,180	187,031,904	334,247,580
	1890	1,914	222,402,855	4,467	5,076,869	130,669	62,435,733	14,352,458	161,124,539	279,576,396
	1880	1,540	115,483,859			132,834	38,013,331		106,328,586	183,443,725
New York.....	1900	528	93,392,958	2,070	2,707,559	64,734	22,606,600	6,683,037	50,273,512	93,819,518
	1890	615	75,881,672	1,469	1,829,231	60,924	20,334,522	4,340,584	47,621,495	86,171,293
	1880	480	42,022,987			45,153	12,652,423		30,610,901	56,191,417
New Jersey.....	1900	323	76,183,937	1,740	2,478,193	46,985	17,188,137	7,309,634	38,795,102	72,933,823
	1890	240	43,321,016	773	954,171	33,994	12,750,224	2,952,104	29,632,210	52,831,023
	1880	186	16,023,770			24,111	7,652,833		17,456,679	31,865,343
Pennsylvania.....	1900	1,076	126,346,788	3,114	3,426,774	101,845	32,624,316	11,733,429	92,301,856	157,333,201
	1890	1,010	92,686,227	2,104	2,147,210	79,277	27,089,420	6,052,430	78,869,153	132,367,499
	1880	822	51,233,747			58,005	16,560,274		53,099,549	88,594,143
Delaware.....	1900	16	2,174,398	81	113,896	1,832	621,729	175,615	1,377,168	2,592,201
	1890	11	2,555,233	37	37,948	1,506	503,169	122,030	1,007,270	1,821,278
	1880	13	1,227,129			1,058	301,231		975,490	1,536,260
Maryland.....	1900	26	9,667,594	150	197,773	6,498	1,591,899	529,415	4,284,266	7,568,367
	1890	33	7,953,707	89	103,309	5,023	1,253,393	334,650	3,944,406	6,335,303
	1880	30	4,965,726			4,557	846,620		3,235,917	5,256,557
Southern states.....	1900	702	137,172,561	2,222	2,465,059	109,501	19,858,949	5,488,519	63,624,678	107,318,331
	1890	486	62,623,729	1,118	960,968	43,660	8,310,088	2,691,420	32,624,416	49,729,674
	1880	613	20,413,414			19,409	3,254,936		12,731,692	20,331,039
Virginia.....	1900	53	6,759,667	121	136,789	5,611	1,272,256	292,451	3,322,334	5,762,329
	1890	47	4,039,511	80	59,765	2,370	563,394	177,750	1,998,555	2,964,171
	1880	56	1,646,850			1,477	241,509		1,023,471	1,618,930
West Virginia.....	1900	33	1,212,971	31	32,330	924	211,732	37,913	534,417	937,622
	1890	33	403,881	37	13,232	291	66,093	27,708	225,961	395,700
	1880	57	323,170			365	51,361		290,343	413,536
North Carolina.....	1900	225	34,453,422	759	652,124	32,367	5,492,194	1,099,890	18,290,225	29,996,558
	1890	124	11,195,122	260	136,825	9,016	1,560,904	442,056	6,553,635	10,053,264
	1880	98	3,053,900			3,523	462,354		1,719,352	2,857,642
South Carolina.....	1900	88	39,767,684	448	564,863	30,636	5,162,931	1,556,500	17,602,500	30,274,036
	1890	35	11,144,233	121	136,030	8,072	1,510,609	523,236	6,320,132	9,801,956
	1880	25	2,784,000			2,066	332,017		1,827,755	2,919,344
Georgia.....	1900	98	25,606,170	397	491,604	20,117	3,372,313	1,145,149	12,207,425	20,266,712
	⁵ 1890	72	18,171,990	244	216,276	10,366	2,274,945	751,515	8,033,042	12,450,008
	⁶ 1880	74	6,548,390			6,523	1,166,654		4,203,557	6,749,784
Kentucky.....	1900	46	3,951,418	56	84,323	2,335	515,780	175,392	2,030,684	3,274,519
	1890	49	4,142,315	109	111,694	2,767	692,400	246,043	2,300,959	3,735,436
	1880	103	1,255,750			1,131	231,755		1,107,523	1,639,694
Tennessee.....	1900	72	6,384,194	123	137,337	4,251	790,031	239,239	2,266,543	3,907,279
	1890	69	4,322,336	121	99,435	3,051	635,610	230,116	2,525,193	3,724,133
	1880	122	1,564,264			1,446	223,134		976,315	1,495,441
Alabama.....	1900	45	11,944,393	172	211,251	8,592	1,526,759	530,323	4,978,680	8,414,020
	1890	22	2,965,713	55	47,318	2,510	467,313	153,734	1,573,933	2,338,646
	1880	30	1,275,400			1,503	243,035		833,072	1,291,764

¹ Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this table. (See detailed summary for each industry.)

² Not reported separately.

³ Includes 2,115 officers and clerks whose salaries were not reported.

⁴ Not reported.

⁵ Includes the reports from 1 establishment in Florida not reported separately.

COMBINED TEXTILES.

TABLE 11.—COMPARATIVE SUMMARY, NOT INCLUDING FLAX, HEMP, AND JUTE, BY STATES ARRANGED GEOGRAPHICALLY: 1880 TO 1900—Continued.

STATES.	Year.	Number of establishments.	Capital.	SALARIED OFFICIALS, CLERKS, ETC.		WAGE-EARNERS.		Miscellaneous expenses.	Cost of materials used.	Value of products.
				Number.	Salaries.	Average number.	Total wages.			
Southern states—Continued.										
Mississippi	1900	11	\$2,538,499	55	\$72,418	2,010	\$400,188	\$155,684	\$884,160	\$1,670,153
	1890	16	3,607,198	48	38,264	2,223	558,987	75,676	1,380,009	2,257,583
	1880	16	1,453,640			940	186,314		548,795	978,098
Arkansas	1900	15	293,353	11	7,428	193	36,290	4,985	111,498	199,471
	1890	8	164,236	12	5,250	103	15,856	8,775	46,537	71,913
	1880	27	160,550			154	20,565		119,277	177,430
Louisiana	1900	3	1,741,688	18	26,941	1,335	282,536	79,887	584,324	1,162,762
	1890	6	1,616,660	16	22,574	1,237	267,468	16,650	737,212	1,126,761
	1880	2	195,000			108	12,572		72,470	86,776
Texas	1900	8	2,514,097	31	47,151	1,125	295,889	181,056	761,888	1,403,330
	1890	5	895,084	20	24,155	644	190,999	28,561	424,218	700,018
	1880	3	147,500			107	28,166		50,262	102,100
Western states										
	1900	376	31,168,217	1,171	1,415,348	22,634	6,264,820	2,071,250	16,193,282	29,450,573
	1890	504	28,581,689	1,070	977,140	21,381	5,397,594	1,811,829	15,674,232	27,029,868
	1880	651	15,263,576			14,284	3,171,147		11,375,888	18,305,722
Ohio	1900	67	4,019,267	156	165,297	2,334	796,276	364,752	2,690,483	4,828,889
	1890	125	4,820,526	210	189,614	3,760	940,904	314,894	3,233,787	5,437,483
	1880	163	2,323,340			2,389	511,923		1,780,099	3,032,669
Michigan	1900	51	3,652,060	243	225,338	3,563	873,902	340,247	2,850,219	4,878,984
	1890	44	1,691,461	84	64,898	1,551	366,098	119,060	1,110,018	1,964,974
	1880	51	726,189			1,397	185,364		624,241	928,766
Indiana	1900	35	6,533,302	197	316,512	4,672	1,393,985	323,925	2,949,048	5,561,460
	1890	61	5,431,065	151	130,884	4,283	1,010,179	379,881	3,208,276	5,214,211
	1880	95	3,413,105			2,784	662,310		2,587,954	4,074,576
Wisconsin	1900	66	5,440,759	197	244,319	4,135	998,616	365,213	2,516,810	4,667,294
	1890	60	4,603,613	137	145,450	3,747	807,483	279,328	2,399,217	4,100,201
	1880	53	1,559,964			1,146	285,566		1,096,474	1,827,275
Illinois	1900	37	4,345,696	148	211,505	3,361	961,332	294,943	2,205,894	4,087,869
	1890	75	4,119,495	201	202,330	3,871	1,113,005	284,455	2,426,564	4,666,115
	1880	85	1,325,203			2,337	555,209		1,937,336	2,980,116
Minnesota	1900	27	1,246,829	41	50,107	593	168,251	67,648	469,667	906,904
	1890	25	815,144	36	35,421	439	135,282	70,917	398,300	730,458
	1880	15	203,500			263	55,327		190,867	303,378
Iowa	1900	14	620,164	38	29,321	366	82,825	24,722	213,769	386,055
	1890	20	896,741	45	35,470	494	146,170	53,069	629,882	899,918
	1880	37	555,700			505	118,252		437,301	682,812
Missouri	1900	29	702,309	25	28,628	441	112,521	27,472	325,785	568,028
	1890	45	896,020	71	41,052	733	168,215	38,603	452,068	798,738
	1880	109	1,665,550			1,350	235,107		1,105,497	1,563,641
Kansas	¹ 1900									
	¹ 1890									
	1880	6	141,425			126	26,075		107,401	212,065
Utah	1900	13	509,881	27	15,310	291	92,514	22,333	148,157	292,200
	1890	14	612,579	20	16,575	324	104,601	29,301	189,339	392,094
	1880	12	402,000			306	70,208		150,698	237,361
Oregon	1900	12	1,178,370	30	33,420	675	209,421	74,863	467,205	901,512
	1890	6	1,350,585	44	32,775	353	142,538	86,906	327,502	614,932
	1880	10	566,800			215	86,088		227,486	549,030
California	1900	14	1,819,481	40	51,568	922	340,420	100,821	888,200	1,463,836
	1890	20	3,235,263	61	68,366	1,733	448,224	199,373	1,238,067	2,080,215
	1880	14	1,840,800			986	375,718		1,078,534	1,794,033
All other Western states ²	1900	11	1,080,099	29	44,023	781	234,807	64,311	470,485	907,942
	1890	9	109,197	10	5,305	88	19,895	6,087	58,312	130,531
	1880	1	40,000			29	4,000		52,000	70,000

¹Included in "all other Western states."

²Includes establishments distributed as follows: 1900—Colorado, 2; Idaho, 2; Kansas, 2; Montana, 1; Nebraska, 2; North Dakota, 1; Wyoming, 1. 1890—Colorado, 2; Idaho, 1; Kansas, 2; Nebraska, 1; South Dakota, 2; Washington, 1. 1880—Washington, 1.

A comparison of the facts relating to the textile industry by geographic divisions and states illustrates a condition that has existed from the beginning and which is undergoing a slow but steady change, namely, that the establishments engaged in this manufacture are concentrated most densely in the Northeastern part of the country, but that the Southern states are rapidly advancing in the number and importance of their establishments. The capital in the year 1900 reported by the New England states is slightly more than one-half

of the whole country; in 1890 it was 57.6 per cent, and in 1880 it was 63.4 per cent. A somewhat similar condition is shown in the number of wage-earners, the amount paid for wages, the cost of materials, and the value of products. The percentages differ from those given for capital, but in general the importance of New England, as shown by these items, is nearly or quite that of all the rest of the country, but is less than it was in 1890, and still less than the condition in 1880.

Among the New England states Massachusetts is, as

it has always been, conspicuously in the lead. Practically one-half of the capital, the employees, the wages paid, materials used, and products are to be credited to that state. Rhode Island is second among the New England states, and Connecticut is third, this order having been observed without variation ever since the textile manufacture existed in the United States.

Taking capital as the standard, the Middle states represent 30.7 per cent of the total for the country, Pennsylvania being first, New York second, and New Jersey third.

The sudden springing of the Southern states into prominence in this industry is shown strikingly by the total increase of capital from \$20,413,414 in 1880 to \$62,623,729 in 1890, and to \$137,172,561 in 1900.

Ten years ago, and also in 1880, Georgia was easily the leader among the Southern states, but it has now been surpassed by both South Carolina and North Carolina, in each of which states the value of products was not much less than in the states of Maine and New Hampshire, where the industry has been established for half a century; and in the number of hands employed both North and South Carolina surpass both of these two New England states. The growth in Alabama has been also very great, the amount of capital having almost exactly quadrupled in ten years.

The situation in the Western states is not different from that which has previously existed. The textile industry has never obtained a strong foothold in these states, and shows no great tendency to become important.

COTTON MANUFACTURES.

COTTON MANUFACTURES.

By EDWARD STANWOOD, *Expert Special Agent.*

Civilized man finds three things absolutely essential to his life and comfort—food, shelter, and clothing. The labor necessary to procure the indispensable articles which represent these wants diminishes as one approaches the equator, and conversely it increases as one passes from torrid to temperate climates and thence onward toward the poles of the earth. Tillage of the soil, the construction of dwellings, and the conversion of skins and furs or of vegetable or animal fibers into clothing, are arts which establish themselves naturally wherever man fixes his abode. The provision of shelter always remains a local art, from the necessity of the case. An adequate supply of fuel, which is a concomitant of shelter, was frequently the first want for which pioneer communities in early times were compelled to provide from without. Next they supplemented their own provision of clothing with fabrics and garments made elsewhere; and finally as population became dense, and labor was drawn from agriculture and was specialized in commerce and manufactures, they were obliged to import their food.

In the sense indicated, the colonists of America were engaged in all the arts necessary to supply their own wants, and among those arts was the manufacture of cloth and of clothing. They were prohibited by the laws of the mother country from carrying on manufactures for purposes of trade and profit, but the household manufacture always existed. A considerable part of their clothing was made from domestic material, spun and woven in their homes, and made up by members of their own families. When Hamilton wrote his great Report on Manufactures, in 1791, he referred to certain branches of the textile industry as already established, yet at that time there was but one cotton factory where spinning was carried on by means of machinery moved by waterpower, and that factory had been established less than a year and had but 72 spindles. There were no woolen mills in the modern sense of the term, but there were many fulling mills where wool was prepared for household spinning.

Although some progress was made during the next twenty years, it was not until the War of 1812 cut off foreign supplies that the cotton manufacture was truly "established." Since that time it has expanded steadily and marvelously. During every decade, not even

excepting that which covered the years of the Civil War, there has been an increase in the number of operatives employed and in the quantity and value of the goods manufactured. The census of 1850 showed a total value of products of \$61,869,184. Ten years later, in 1860, the value of products had almost doubled, being \$115,681,774. In 1870 the value had increased to \$177,489,739, a large part of the increase being due to inflation of the currency. The decline to normal price in the ensuing decade masked the actual growth of the industry, and in 1880 the value of products was only \$192,090,110. In 1890 the value was \$267,981,724; at the census of 1900 it was \$339,200,320—five and a half times as much as in 1850, when it was already the leading manufacturing interest in the United States. It was the first, the largest, and the most typical factory industry in the country, and still holds its ranks, almost undisputed, in all these respects.

The growth of the industry is sufficient proof, were such proof needed, that it has been profitable. Nevertheless it has been subjected to many and sometimes protracted seasons of discouragement and loss. The margin between the price of a pound of raw cotton and that of a pound of goods, whether yarn or cloth, is, in the face of the keen competition which exists, so small that the profits of a mill during a whole year may depend upon the luck or judgment of the treasurer in buying his raw material at the right or the wrong season, which in turn largely depends upon his skill or his fortune in forecasting a large or a small cotton crop. So far as that were the case, what one treasurer might lose another treasurer would gain, and the ultimate effect upon the profits of the industry as a whole would be *nil*. But the fact of a large or a small cotton crop makes an enormous difference in the profits of manufacturers. The general condition of the country determines the demand for goods, and consequently the price; but the cost of production depends greatly upon the price of cotton. Cheap cotton and a quick demand make the manufacture profitable; dear cotton, a sluggish rate of consumption, and labor troubles reduce or extinguish profits. Unfortunately the latter set of conditions is too often presented. Fortunately it is not usually met in so virulent a form as to cause actual loss, and the situation does not ordinarily last long.

Upon the whole, the history of the past ten years was not one of prevailing prosperity. Two influences interfered to reduce profits—an extremely wide fluctuation in the price of cotton, and the great increase of competition caused by the growth of the industry in the Southern states. The first of these influences was general in its application; the other applied to Northern mills only. The new Southern mills, equipped with the most efficient machinery, favored by peculiarly free conditions as to labor, chiefly engaged in the production of goods for which the demand was most steady, and helped not a little by close proximity to the field of supply of their raw material, were able to show constant and large profits; whereas their Northern competitors passed through seasons of no profit or of moderate gains, with only one or two periods when their business was eminently satisfactory.

The condition throughout the census year 1889-90 was highly favorable to manufacturers, and they made extraordinary profits. Barely 1 per cent of the cotton spindles in the country was idle, and most of those were so because they were antiquated and not worth running. But a rise in the price of cotton, from 10 cents a pound in January, 1890, to 11½ cents in April, brought discouragement, because a slackened demand for goods compelled a reduction in the price of cloth at the same time that the cost of producing it was increased. The change to unfavorable conditions was felt first in the great print-cloth center, at Fall River, where a stoppage of the mills and a general curtailment of production became necessary in August. Other branches of the cotton manufacture continued fairly profitable for a few months longer, but before the end of the year all branches were depressed. There was, nevertheless, a somewhat speedy recovery; an improvement set in quite early in the spring for all except print cloths, which continued to be weak. There was an extraordinary fall in the price of cotton, owing to the prospect of a large crop, from 12¼ cents in May, 1891, to 8 cents in June. Notwithstanding this favorable turn of the market, the Northern mills felt the first check to prosperity, owing to Southern competition. Again in September of that year it became necessary both to curtail production by the Fall River mills and to reduce wages. This time the means taken were effectual. Stocks were worked off and the market demand became strong. Accordingly the year 1892 was one of the good years of the industry. No complaints were heard from any part of the country.

In 1893 there was once more a reverse. Cotton manufacturing in England, which had been in an extraordinarily depressed state in 1892, now became prosperous, whereas in the United States it was dull and unsatisfactory. In August there were strikes and closing of mills, and the unfavorable conditions continued throughout the year 1894. No doubt apprehension by manufacturers of tariff legislation less

favorable to their interests than the existing import duties went far to create the difficulties with which they contended. The passage of the act of 1894, however, did no injury to the interests of the manufacturers, and the industry revived, and was in a prosperous condition in 1895. Stocks were small, prices were fair, and although cotton was higher, the results of the year were remunerative. This was brought about because mills were well provided with stocks of low-priced cotton of the 1894 crop, and the prospect of a short crop in 1895 gave tone to the market for cloth. Orders were large, prices advanced, machinery was in full operation, and the year 1895 ended with excellent prospects of a continuance of prosperity.

These prospects were not realized. Early in 1896 the market demand began to decline, and as the machinery continued in operation, goods accumulated. The situation became such that in June, efforts were made by means of auction sales of large stocks of goods to reduce the surplus. There was also the suggestion that there be once more an organized curtailment of production, which was not carried out. The attempt to work off the surplus goods was successful, and the prospects of manufacturers brightened to a certain extent, but it was soon discovered that the market had been choked. Cotton advanced in price, narrowing the margin between the cost of raw cotton and the selling value of finished goods, and the demand was not great enough to absorb the output of the largely increased number of mills. The depression that existed in 1896 was due to the agitation and uncertainty that always prevail in a year of Presidential election, which were in this instance more acute than usual. But the peculiar situation of the two markets that determine the financial result of a cotton manufacturer's operations prolonged the depression, and continued it after other branches of business had begun to experience the great prosperity that marked the closing years of the century. Many mills were shut down in May and June, 1897. Renewed sales of goods by auction in the spring broke prices and demoralized the market, as well as reduced to petty proportions the demand for goods of current manufacture. There was another curtailment of production, then a great drop in the price of cotton; but the quick absorption of goods, owing to the generally prosperous condition of the people, rectified the situation altogether, and manufacturers entered upon a somewhat prolonged period of great prosperity. The only interruption was in the print-cloth branch, which was in a very unfavorable condition at Fall River in 1898, and the average return upon capital by the mills of that city for the year was only 2.2 per cent. But prosperity came to Fall River also during the year 1899, beginning about the month of March, and during the whole of the census year, from June, 1899, to June, 1900, all the mills of the country were fully occupied. Goods were produced from cotton costing within a

fraction of the lowest on record, and although they were sold at prices which were low as compared with the average for any five years in the past, yet they yielded a profit which, taking the country as a whole, has never been exceeded.

It must always be borne in mind that the foregoing statements apply more particularly to establishments and to the conditions of trade in the manufacturing centers of the North. Prior to the close of the census year there had been scarcely any interruption of the exceeding prosperity of Southern spinners. They did not curtail production when many Northern manufacturers were in a state bordering upon despair; on the contrary, a large number of their mills were running day and night. They did not seek to dispose of their product by auction, but sold all they could make at prices which gave their stockholders handsome dividends.

THE FOREIGN TRADE IN COTTON GOODS.

It is further to be noted in this connection that for the first time in the history of American cotton manufacturing, the domestic market was more than once relieved and steadied by the exportation of goods to foreign markets. This statement does not signify that the export of domestics is a new thing, for it was a feature of the American foreign trade eighty years ago, but that for the first time the existence of an

important outlet for such goods saved manufacturers from a disastrous glut, and mitigated the keenness of the competition that became most serious when the South entered the market as a great producer.

The history of the trade of the United States in cotton goods presents some peculiarities which distinguish it from the trade in any other class of articles. In a broad sense the cotton manufacturers have possessed the home market for three-quarters of a century. Nevertheless, in the intervening years there has been a large and important import trade. The seeming paradox disappears when the first of the following tables is critically examined. The imports consist mostly of goods which American manufacturers have never undertaken to produce on a large scale. An overwhelming proportion of the manufactures of cotton consumed in this and other countries consists of plain cloth woven from coarse or medium yarns. Save in a few exceptional years, the American manufacturers have been able to supply fully the demand for such goods. Meanwhile the arrangement of the tariff has been usually such that foreign manufacturers were not permitted to compete successfully in this market.

Table 1 shows the annual imports of manufactures of cotton from 1821 to 1900, inclusive, as compiled from the annual reports on Commerce and Navigation, published by the United States Treasury Department.

TABLE 1.—ANNUAL IMPORTS OF MANUFACTURES OF COTTON, 1821 TO 1900, INCLUSIVE.¹

YEARS.	Total value.	CLOTHS.				Value of clothing, ready-made, and other wearing apparel, not including knit goods.	Value of embroideries, laces, insertings, trimmings, and lace curtains, cords, and gimps.	Value of knit goods made on knitting machines or knit by hand.	THREAD (NOT ON SPOOLS), YARNS, WARPS, OR WARP YARNS.		JEANS, DENIMS, AND DRILLINGS.		All other manufactures.
		Bleached and unbleached.		Printed, painted, and colored.					Pounds.	Value.	Square yards.	Value.	
		Square yards.	Value.	Square yards.	Value.								
Total.	\$91,972,247	\$29,300,792		\$52,709,603			\$5,422,605		\$1,881,085			\$2,657,562	
1821	7,788,514	2,873,383		4,366,407			397,586		151,138				
1822	10,680,216	3,774,992		5,856,763			866,618		181,843				
1823	8,869,482	3,237,513		4,899,499			629,211		103,259				
1824	7,239,759	1,991,666		4,609,236			523,821		115,036				
1825	12,509,516	3,676,451		7,709,830			545,915		201,549			875,771	
1826	8,348,034	2,565,004		5,056,725			404,870		175,143			146,292	
1827	9,316,153	2,841,215		5,816,546			439,773		268,772			464,847	
1828	10,996,230	2,839,547		6,138,844			640,360		344,040			1,038,489	
1829	8,362,017	2,784,984		4,404,078			586,997		173,120			412,838	
1830	7,802,326	2,716,037		4,856,675			387,454		172,785			229,375	
Total.	116,486,231	21,065,018		75,274,878			10,268,156		4,324,967			5,563,212	
1831	16,090,224	4,399,251		10,046,500			887,957		393,414			363,102	
1832	10,399,653	2,379,301		6,355,475			1,035,513		316,122			318,242	
1833	7,660,449	1,218,513		5,181,647			623,369		345,059			293,861	
1834	10,145,181	1,793,819		6,688,823			749,356		373,793			533,390	
1835	15,367,585	2,747,514		10,610,722			906,369		544,473			558,507	
1836	17,876,087	2,795,135		12,192,080			1,358,608		555,200			974,074	
1837	11,150,841	1,647,388		7,087,270			1,267,267		404,603			744,318	
1838	6,599,330	1,007,191		4,217,551			767,856		222,114			384,618	
1839	14,692,397	2,153,703		9,000,216			1,879,783		779,004			874,691	
1840	6,504,484	913,203		3,898,694			792,078		387,095			513,414	
Total.	136,804,969	16,674,286		88,005,850			\$3,612,457		11,503,447			6,014,843	10,994,086
1841	11,757,036	1,573,722		7,434,727			980,639		865,180			904,818	
1842	9,578,515	1,285,947		6,168,544			1,027,621		457,917			638,486	
1843	2,958,796	393,105		1,739,818			307,243		26,227			492,903	
1844	13,641,478	1,670,789		8,894,219			1,121,460		637,006			1,313,024	
1845	13,863,282	1,823,451		8,572,546			1,326,631		565,769			1,574,885	
1846	13,530,625	1,597,120		8,755,392			1,308,202		656,571			1,213,840	
1847	15,021,550	2,630,979		10,023,418			1,173,824		511,136			632,193	
1848	19,138,141	2,487,256		12,490,501			1,387,218		727,422			661,873	
1849	16,540,200	1,438,635		10,286,894			1,552,586		770,509			1,175,793	
1850	20,775,346	1,773,302		13,640,291			672,653		799,156			2,331,771	

¹ Annual Reports on Commerce and Navigation, United States Treasury Department.

TABLE I.—ANNUAL IMPORTS OF MANUFACTURES OF COTTON, 1821 TO 1900, INCLUSIVE¹—Continued.

YEARS.	Total value.	CLOTHS.				Value of clothing, ready-made, and other wearing apparel, not including knit goods.	Value of embroideries, laces, insertings, trimmings, and lace curtains, cords, and gimps.	Value of knit goods made on knitting machines or knit by hand.	THREAD (NOT ON SPOOLS), YARNS, WARPS, OR WARP YARNS.		JEANS, DENIMS, AND DRILLINGS.		All other manufactures.
		Bleached and unbleached.		Printed, painted, and colored.					Pounds.	Value.	Square yards.	Value.	
		Square yards.	Value.	Square yards.	Value.								
Total.	\$265,744,157	\$64,692,197		\$112,936,494		\$19,794,631	\$27,728,527	\$12,486,172		\$28,106,186			
1851	22,921,093	1,499,044		14,449,421		2,715,425	2,117,899	980,899		1,158,465			
1852	20,224,552	2,477,486		11,558,368		2,289,863	2,152,340	887,840		863,717			
1853	28,578,070	2,718,846		14,623,268		4,056,621	3,002,681	1,095,518		3,076,186			
1854	34,803,055	2,191,217		17,423,249		5,088,667	3,013,664	1,076,987		6,009,271			
1855	18,524,167	12,563,522		10,278,826		895,555	2,053,595	997,673		2,011,822			
1856	27,109,018	19,110,752		12,891,713		1,385,024	2,516,848	1,276,760		2,819,634			
1857	29,815,480	21,441,082		16,561,533		1,348,578	3,210,287	1,401,153		2,419,380			
1858	18,584,810	741,077		2,315,849		660,049	2,120,863	1,080,671		1,589,882			
1859	26,973,831	784,964		4,003,637		646,870	3,228,086	1,918,417		3,388,561			
1860	38,215,531	1,164,207		25,934,004		712,379	4,310,359	1,775,814		4,319,268			
Total.	186,119,390	160,189,415	29,195,616	152,889,316	42,920,114	\$3,349,446	7,387,253	23,688,747	10,741,743	28,828,725	\$6,996,084	56,890,387	
1861	24,985,889	705,156		14,947,744		341,880	3,822,761	1,380,119		3,787,729			
1862	8,907,305	13,343,169		15,651,728		402,578	1,116,782	1,116,782		4,673,893			
1863	14,121,589	15,911,460		17,007,719		693,672	1,605,781	1,605,781		8,372,846			
1864	14,841,501	12,039,629		1,424,775		741,310	1,279,424	1,279,424		9,153,991			
1865	7,558,932	7,400,680		10,278,826		831,851	2,025,767	608,292		1,564,042			
1866	29,519,228	55,127,685		48,762,557		676,101	1,467,392	5,020,167		8,997,060			
1867	26,164,007	5,276,551		5,062,505		1,445,459	1,767,243	5,620,776		3,656,383			
1868	16,660,074	2,795,079		2,315,849		1,227,886	1,541,827	3,457,525		3,805,374			
1869	20,481,312	26,860,698		3,533,132		2,960,918	4,007,276	1,674,804		8,988,985			
1870	23,880,053	29,506,164		3,925,266		30,027,259	4,784,478	5,838,611		9,898,769			
Total.	266,905,606	211,443,055	26,001,955	189,863,275	25,851,170			51,237,968		29,963,783	4,380,640	159,433,873	
1871	29,876,640	36,938,026		4,883,622		28,975,376	3,684,324	5,085,993		5,886,146		15,535,469	
1872	35,307,447	41,700,373		5,316,877		36,573,465	4,975,625	5,451,523		6,483,461		18,684,843	
1873	35,201,324	81,152,540		8,865,553		33,355,661	5,028,256	5,449,208		3,685,477		20,321,909	
1874	28,193,869	26,361,866		3,093,933		23,380,235	3,185,494	4,621,259		2,220,653		16,996,045	
1875	27,738,401	28,418,257		2,873,222		18,899,891	2,593,936	4,948,024		1,955,825		17,054,480	
1876	22,725,598	15,007,450		1,845,653		15,501,344	2,074,944	4,682,871		1,299,627		13,939,873	
1877	18,923,614	11,048,698		1,237,312		10,299,915	1,415,112	3,804,520		641,611		86,919	
1878	19,081,037	9,676,594		1,076,142		8,335,123	1,086,426	4,682,246		825,323		104,633	
1879	19,928,310	6,678,088		789,859		5,195,126	707,064	4,997,335		1,043,268		141,066	
1880	29,929,366	9,466,163		1,020,277		9,341,639	1,179,999	7,514,989		6,422,387		1,067,664	
Total.	302,987,592	47,807,813	5,015,870	199,782,036	24,741,393	3,184,912	74,346,572	71,435,037	11,184,370	6,303,612	24,895,570	4,384,210	118,025,936
1881	31,219,329	11,230,712		1,253,428		7,128,860	928,043	8,391,634		7,608,861		1,332,326	19,313,838
1882	34,351,292	13,798,147		1,593,127		6,087,837	924,602	7,501,449		12,797,527		2,257,594	22,164,520
1883	36,853,689	9,368,287		1,039,752		7,163,840	1,120,574	8,560,063		4,489,132		794,290	25,339,010
1884	29,074,626	1,637,613		174,823		19,504,784	2,187,044	6,994,841		1,895,699		1,339,777	7,574,345
1885	27,197,241	836,213		103,200		24,274,281	2,653,320	408,810		900,480		652,202	6,949,236
1886	29,709,268	2,176,606		225,103		120,551,543	3,467,485	384,770		1,147,181		669,096	6,472,389
1887	28,940,353	3,021,636		301,636		24,928,404	3,083,446	436,356		10,467,073		6,910,104	6,871,244
1888	28,917,799	1,077,070		82,613		26,483,126	3,356,532	392,307		11,071,907		6,373,780	6,682,955
1889	26,805,942	2,577,230		203,100		2,577,805,959	3,696,194	333,612		9,591,943		6,389,325	5,681,005
1890	29,918,055	1,508,239		129,588		20,251,402	3,373,653	336,655		11,447,670		7,149,030	6,577,324
Total.	314,624,770	20,444,335	1,831,419	241,203,936	62,536,729	17,190,458	123,266,407	54,733,325	20,891,442	8,426,407			56,640,025
1891	29,712,624	1,802,397		170,423		31,055,214	24,237,221	1,201,278		10,589,490		6,738,775	5,917,792
1892	28,323,341	1,572,224		140,001		32,407,238	24,505,666	1,261,848		11,248,289		5,333,652	4,669,433
1893	33,560,293	8,225,767		261,202		42,546,157	5,536,275	1,682,049		12,741,798		6,392,175	6,134,141
1894	22,346,547	1,152,743		95,565		27,172,415	3,385,241	1,658,778		8,021,769		4,360,655	4,493,315
1895	33,196,625	1,644,421		125,316		45,342,525	5,428,243	2,766,877		11,686,016		6,535,179	5,995,792
1896	32,437,504	2,136,657		179,864		41,161,822	2,683,315	10,378,954		6,190,672		2,431,855	6,712,072
1897	34,429,363	3,177,241		273,654		35,937,975	4,404,025	12,578,207		5,596,703		1,664,217	8,207,164
1898	27,267,300	1,520,103		120,767		43,258,291	5,313,633	1,050,564		11,768,704		4,084,433	4,291,110
1899	32,054,434	1,250,932		107,238		51,196,236	2,649,014	1,027,306		14,550,015		4,885,269	4,535,988
1900	41,296,239	3,061,790		357,604		61,936,063	8,156,301	1,231,231		19,208,165		4,715,762	5,232,218

¹Includes "bleached."

Table 1 shows that from 1821 to 1855 the value of plain, uncolored cotton cloth imported exceeded \$4,000,000 in a single year only, the year 1831; and that the annual average value of such goods imported declined from \$2,930,079 in the decade 1821-1830, to \$2,106,502 in the decade 1831-1840, and to \$1,667,429 in the decade 1841-1850. Except during the three years 1855-1857 the importation was not materially greater during the ensuing decade; and notwithstanding the great advance

of the country in population and wealth, the annual average value of the same class of goods in the years 1891-1900 was but \$183,142. This class consists of fabrics which are reported by the census as plain cloths for printing and converting, sheetings and shirtings, duck, etc., the value of the domestic production of which is so large that the foreign importation is undoubtedly less than 2 per cent of it.

The same table shows that the average value of the

imported cloths per square yard is much above the value of the domestic article. This is because the importation is confined almost exclusively to fine goods, which American manufacturers have only lately begun to produce. Another class of importations which is larger than that already mentioned is colored goods. Some purchasers have so rooted a preference for foreign ginghams and calicoes that they will not buy the American product. The imports of such goods have lately shown a tendency to increase, but the value of colored cloth imported in 1900, when the amount was the largest in recent years, was little more than twice the annual average from 1860 to 1883. The most important im-

portations of cotton are the fancy articles, classed as embroideries, laces, trimmings, cords, gimps, etc., which, with knit goods, constitute more than one-half of the total value of all articles of cotton imported. In short, the trade in foreign manufactures of cotton is almost altogether in special classes of goods which are not made extensively in the United States, or in articles which the customs and habits of buyers lead them to prefer, regardless of considerations of cost or superiority.

Table 2 shows the annual exports of cotton manufactures from 1826 to 1900, inclusive, as compiled from the annual reports on Commerce and Navigation published by the United States Treasury Department.

TABLE 2.—ANNUAL EXPORTS OF MANUFACTURES OF COTTON, 1826 TO 1900, INCLUSIVE.¹

YEARS.	Total value.	CLOTHS.				Wearing apparel. Value.	All other manufactures. Value.
		Uncolored.		Colored.			
		Square yards.	Value.	Square yards.	Value.		
Total.....	\$5,885,411		\$4,637,597		\$396,840		\$850,974
1826.....	1,138,125		330,532		68,884		238,709
1827.....	1,159,414		965,751		45,120		148,543
1828.....	1,010,232		892,777		76,012		41,443
1829.....	1,259,457		983,248		145,024		131,186
1830.....	1,318,183		965,289		61,800		291,094
Total.....	25,203,681		20,626,289		3,079,661		1,497,731
1831.....	1,126,313		950,329		96,931		79,058
1832.....	1,229,574		1,053,282		104,870		71,472
1833.....	2,532,517		1,804,170		421,721		305,626
1834.....	2,085,994		1,757,197		188,619		140,178
1835.....	2,858,681		2,355,602		397,412		105,667
1836.....	2,255,734		1,951,432		256,625		47,677
1837.....	2,331,473		2,044,930		549,801		230,742
1838.....	3,753,755		3,256,147		252,044		250,564
1839.....	2,975,033		2,526,793		412,661		35,579
1840.....	3,549,607		2,926,457		398,977		224,173
Total.....	39,557,256		31,797,461		4,181,847		3,577,948
1841.....	3,122,546		2,324,539		450,503		347,204
1842.....	2,970,690		2,297,964		385,040		237,636
1843.....	3,223,550		2,575,049		358,415		290,086
1844.....	2,398,780		2,298,800		385,403		214,577
1845.....	4,327,928		3,517,142		516,243		294,543
1846.....	3,545,481		2,827,320		380,549		337,612
1847.....	4,082,523		3,354,696		281,320		446,507
1848.....	5,713,205		4,868,924		351,169		493,112
1849.....	4,933,129		3,953,320		466,574		503,235
1850.....	4,784,424		3,774,407		606,631		353,336
Total.....	73,059,955		37,416,124		18,263,343		17,375,488
1851.....	7,241,205		5,571,576		1,006,561		663,068
1852.....	7,672,151		6,139,391		926,404		606,356
1853.....	8,768,894		6,926,455		1,086,107		756,242
1854.....	5,835,516		3,927,143		1,186,493		471,375
1855.....	5,357,181		2,793,910		2,613,655		449,616
1856.....	6,967,309		4,290,361		1,966,845		710,103
1857.....	6,115,177		3,463,230		1,735,685		866,262
1858.....	5,651,504		1,598,136		2,069,194		1,984,174
1859.....	8,316,222		1,302,331		2,320,890		4,692,951
1860.....	10,934,796		1,403,506		3,356,449		6,174,841
Total.....	39,339,343	28,477,444	6,712,606	12,912,368	6,437,918		26,633,319
1861.....	7,957,038		1,076,959		2,215,032		4,665,047
1862.....	2,946,464		595,004		537,500		1,850,960
1863.....	2,906,411		264,751		630,558		2,021,102
1864.....	1,459,901	177,035	56,639	1,569,235	401,411		993,351
1865.....	3,651,561	122,372	53,469	1,218,724	857,573		2,730,519
1866.....	1,780,175	3,041,715	713,006	405,938	38,742		973,427
1867.....	4,603,235	6,020,731	1,142,451	674,426	139,964		3,325,320
1868.....	4,371,054	10,839,177	1,551,339	2,979,275	531,669		2,733,046
1869.....	5,374,222						5,374,222
1870.....	3,737,232	3,276,334	1,346,938	6,064,715	1,035,469		1,405,825

¹ Annual Reports on Commerce and Navigation, United States Treasury Department.

TABLE 2.—ANNUAL EXPORTS OF MANUFACTURES OF COTTON, 1826 TO 1900, INCLUSIVE¹—Continued.

YEARS.	Total value.	CLOTHS.				Wearing apparel Value.	All other manufactures Value.
		Uncolored.		Colored.			
		Square yards.	Value.	Square yards.	Value.		
Total.....	\$66,210,965	445,869,911	\$89,672,104	190,462,898	\$16,454,141		\$10,084,820
1871.....	3,558,186	14,882,931	1,776,694	5,088,923	724,841		1,056,601
1872.....	2,804,930	8,859,191	1,317,719	2,844,888	458,998		527,618
1873.....	2,947,928	10,187,145	1,655,116	3,585,629	596,912		695,500
1874.....	3,095,840	13,247,142	1,681,209	4,625,180	668,781		745,850
1875.....	4,071,882	21,224,020	2,313,270	7,593,723	939,061		819,551
1876.....	7,722,978	59,319,267	5,314,738	16,488,214	1,455,462		952,778
1877.....	10,235,843	76,769,147	6,437,223	29,601,304	2,484,181		1,314,489
1878.....	11,438,660	88,528,192	7,053,463	37,765,313	2,959,910		1,425,287
1879.....	10,858,950	84,081,319	6,288,131	46,116,058	3,209,285		1,866,584
1880.....	9,981,418	68,821,557	5,834,541	37,758,166	2,956,760		1,190,117
Total.....	127,491,518	1,062,022,145	77,387,248	456,655,097	31,215,625	\$4,265,408	14,623,287
1881.....	14,105,348	80,399,154	6,624,374	68,184,208	4,983,312	533,961	1,963,701
1882.....	13,828,377	114,994,402	9,351,713	29,525,672	2,326,319	605,398	1,544,947
1883.....	13,721,605	108,634,459	8,629,728	34,066,292	2,643,278	770,460	1,673,144
1884.....	11,885,211	99,750,450	7,503,861	35,441,206	2,579,866	849,270	1,452,714
1885.....	11,836,591	114,806,595	7,919,670	82,788,123	2,230,567	267,775	1,418,579
1886.....	13,959,984	142,547,980	9,281,170	51,293,378	3,149,091	435,536	1,144,137
1887.....	14,929,342	136,809,074	9,256,486	67,793,013	4,003,772	442,757	1,226,327
1888.....	13,013,189	115,766,679	7,812,947	54,446,936	3,622,612	317,652	1,369,978
1889.....	10,212,644	77,596,862	5,577,401	40,856,329	2,885,373	301,803	1,448,067
1890.....	9,999,277	75,716,490	5,480,403	42,309,770	2,886,485	240,796	1,391,643
Total.....	169,240,352	1,784,369,304	97,111,912	661,332,474	37,566,275	7,558,516	27,003,649
1891.....	18,604,857	135,529,590	9,277,112	39,016,682	2,590,984	278,169	1,453,642
1892.....	13,226,277	142,938,371	8,673,663	40,315,450	2,484,360	433,102	1,635,162
1893.....	11,309,355	100,776,006	6,306,022	43,016,103	2,302,462	452,356	2,248,515
1894.....	14,340,886	124,349,278	7,639,851	61,538,453	3,354,935	476,617	2,369,433
1895.....	13,789,310	125,790,318	7,034,678	58,467,743	3,444,539	518,730	2,791,863
1896.....	16,837,396	166,391,639	9,539,199	58,747,729	3,419,153	708,099	3,170,940
1897.....	21,037,678	230,123,603	12,511,389	83,409,441	4,770,231	878,304	2,877,254
1898.....	17,024,092	191,092,442	9,151,936	79,415,376	4,133,887	934,192	2,799,077
1899.....	23,566,914	303,063,033	13,743,619	108,940,972	5,221,273	1,275,839	3,321,178
1900.....	24,003,087	264,314,474	13,229,443	87,880,515	4,330,491	1,602,608	4,331,545

¹ Annual Reports on Commerce and Navigation, United States Treasury Department.

Table 2 shows that the exportation of cotton goods has been a feature of the foreign trade for more than seventy-five years. It is impossible to go further back than 1826, because the separate values of articles exported were then reported for the first time. The trade was established soon after the foundation of the modern factory industry, at Waltham, Mass. It became prominent when that first great success was followed up in the development of Lowell. As early as 1851 the annual value of cotton goods exported exceeded \$7,000,000; and it is safe to say that this amount represented more than one-half of the total value of American manufactures of all kinds sent to foreign countries in that year. The year 1860 marked the temporary culmination of this trade, when the declared value of cotton manufactures exported was but a trifle less than \$11,000,000. The Civil War ensued and not only this branch of the foreign trade, but the cotton trade itself also, was well-nigh annihilated for several years.

When the growth of the cotton crop was resumed, the United States had lost its foreign markets, had given up its shipping formerly engaged in the foreign trade, and had closed most of the mercantile houses in other lands which had previously given its merchants access to the markets of Asia, Africa, and South America. Moreover, the extraordinary increase of population and of

wealth at home, and the great demand for cloth to replenish family supplies exhausted during the war period, gave manufacturers ample field for their enterprise in supplying the home consumption. In these circumstances scarcely any attempt was made to recover foreign markets. The exportation declined to a value of less than \$1,500,000 in 1864, and from 1866 to 1876, eleven years, the annual average was barely \$4,000,000. From 1877 onward there was a moderate revival of the trade. In only five years in the last quarter of a century, 1877 to 1902, has the value fallen below the high mark of 1860, and on the whole there has been steady progress. The following table shows the value of exports of cotton goods in five-year periods:

PERIOD.	Total exports.	Yearly average.
1877-1881.....	\$56,615,219	\$11,323,044
1882-1886.....	65,231,713	13,046,324
1887-1891.....	61,759,309	12,251,862
1892-1896.....	70,003,724	14,000,745
1897-1901.....	105,904,189	21,180,838

The exportation during the census years of the last half century has been as follows: In 1860, \$10,934,796; in 1870, \$3,787,282; in 1880, \$9,981,418; in 1890, \$9,999,277; and in 1900, \$24,003,087. These figures do not show the actual progress so well as the preceding

table, inasmuch as the exportation in 1880 and again in 1890 was less than during the years preceding or following those dates. The exportation in 1900 was the largest on record in declared value, although in the quantity of goods it was not so great as in 1899.

It was not possible, of course, to account for all the exports declared upon the clearing of vessels for foreign ports, since a considerable part of the domestics sold abroad are made for the home market and are purchased for sale in other countries after they have passed wholly out of the control and the knowledge of manufacturers; but so far as the managers of mills are able to trace their products, they furnished goods for export during the year 1899-1900 to the value of \$15,357,502, or about five-eighths of the value of cloth exported during the fiscal year. Almost 60 per cent of the total value represents the product of Southern mills, and nearly 37 per cent the goods of New England. It is an interesting fact that South Carolina, which was histor-

ically and politically, during the years preceding the Civil War, the most conspicuous champion of a policy favorable to the exportation of raw cotton, upon which the planters most relied, and opposed to the fostering of manufactures of cotton, spun in its own mills in 1900 a quantity of cotton exceeding the half of its own crop, and exported close upon one-half of all the cotton cloth reported to the census as having been dispatched to foreign countries. The exact percentage of South Carolina of the total export reported was 45.5.

Table 3 shows the annual exports of foreign manufactures of cotton goods from 1821 to 1900, inclusive, as compiled from the annual reports on Commerce and Navigation published by the United States Treasury Department. It is presented only for the purpose of furnishing the means of ascertaining—by subtracting the amounts and values from the corresponding statistics in Table 1—the actual consumption of foreign goods.

TABLE 3.—ANNUAL EXPORTS OF FOREIGN MANUFACTURES OF COTTON, 1821 TO 1900, INCLUSIVE.¹

YEARS.	Total value.	CLOTHS.				Value of clothing ready-made and other wearing apparel, not including knit goods.	Value of embroideries, laces, insertings, trimmings, and of lace and window curtains.	Value of knit goods made on knitting machines or knit by hand.	THREADS (NOT ON SPOOLS), YARNS, WARPS, OR WARP-YARNS.		JEANS, DENIMS, AND DRILLINGS.		All other manufactures.
		Bleached and unbleached.		Printed, painted, and colored.					Pounds.	Value.	Square yards.	Value.	
		Square yards.	Value.	Square yards.	Value.								
Total.	\$20,747,327	\$9,740,469		\$9,954,599				\$447,591	\$288,994			\$315,074	
1821	1,583,473	1,194,910		379,701			2,880		6,592				
1822	1,682,010	1,083,253		572,626			17,314		8,817				
1823	2,654,174	1,386,024		1,268,502			86,881		24,767				
1824	2,561,168	923,272		1,544,231			79,191		3,474				
1825	2,404,465	1,148,610		1,105,252			46,311		9,412			94,870	
1826	2,226,090	1,018,702		1,032,381			74,462		34,862			65,688	
1827	1,838,314	726,636		964,904			46,788		63,413			88,073	
1828	2,242,739	730,837		1,402,103			44,988		46,786			18,015	
1829	1,564,940	693,468		751,871			42,222		27,656			48,728	
1830	1,989,464	823,697		995,028			57,104		58,325			65,310	
Total.	23,581,508	6,916,171		15,009,337				342,713	664,813			648,474	
1831	3,228,858	1,211,104		1,740,442			57,015		70,254			144,048	
1832	2,322,087	968,301		1,094,412			62,775		29,026			167,673	
1833	2,604,518	822,911		1,352,286			45,987		134,229			149,165	
1834	2,866,854	893,508		1,813,678			43,649		62,403			48,716	
1835	3,697,837	1,245,592		2,308,636			33,994		87,089			19,520	
1836	2,765,676	683,327		1,975,156			16,689		78,176			12,828	
1837	2,683,418	377,465		2,103,627			41,360		86,766			74,310	
1838	1,153,606	271,692		826,111			14,746		29,768			11,180	
1839	1,255,265	250,173		945,686			12,916		34,082			12,468	
1840	1,103,489	189,093		888,653			13,032		58,030			9,176	
Total.	6,331,153	1,583,311		3,892,170			\$59,953	107,048	539,911			198,760	
1841	929,056	131,632		574,503			15,943		198,996			7,932	
1842	336,892	110,069		502,072			4,429		208,193			12,129	
1843	303,616	33,993		251,808			4,681		16,028			2,901	
1844	404,646	30,351		276,434			4,625		24,958			6,550	
1845	502,553	162,590		281,775			2,465		10,922			44,802	
1846	673,203	357,047		290,282			1,780		8,482			15,012	
1847	486,135	38,715		372,877			19,595		3,808			6,140	
1848	1,217,221	487,456		640,319			19,272		40,783			17,956	
1849	583,241	31,690		424,941			19,225		7,718			39,182	
1850	439,588	44,724		274,559			30,833		21,023			45,506	
Total.	10,543,191	4,315,219		2,339,349			284,541	290,033	327,205			2,336,844	
1851	691,734	132,020		440,441			31,928		25,923			40,926	
1852	1,018,285	401,215		457,620			30,389		49,155			57,619	
1853	1,259,313	362,052		622,540			11,104		69,607			173,614	
1854	1,515,584	502,387		684,483			54,353		40,795			181,146	
1855	2,033,854	1,336,634					104,492		38,460			477,077	
1856	1,607,340	1,145,178					32,333		17,531			865,485	
1857	575,063	305,392					6,754		11,819			228,482	
1858	396,204	40,024		126,000			5,216		6,313			208,139	
1859	331,072	25,603		142,673			2,181		2,638			156,379	
1860	1,064,692	64,649		465,692			5,841		3,015			497,977	

¹Annual Reports on Commerce and Navigation, United States Treasury Department.

TABLE 3.—ANNUAL EXPORTS OF FOREIGN MANUFACTURES OF COTTON, 1821 TO 1900, INCLUSIVE¹—Continued.

YEARS.	Total value.	CLOTHS.				Value of clothing ready-made and other wearing apparel, not including knit goods.	Value of embroideries, laces, insertings, trimmings, and of lace and window curtains.	Value of knit goods made on knitting machines or knit by hand.	THREADS (NOT ON SPOOLS), YARNS, WARPS, OR WARP-YARNS.		JEANS, DENIMS, AND DRILLINGS.		All other manufactures.
		Bleached and unbleached.		Printed, painted, and colored.					Pounds.	Value.	Square yards.	Value.	
		Square yards.	Value.	Square yards.	Value.								
Total.	\$5,710,385	8,640,053	\$834,814	10,932,705	\$1,428,134	\$108,061	\$37,202	\$58,362	.....	\$18,267	788,805	\$131,762	\$3,094,283
1861	323,867	.....	32,301	.....	67,934	.....	.....	8,100	.....	1,683	.....	.....	217,896
1862	341,324	.....	.....	.....	.....	.....	.....	11,410	.....	.....	.....	.....	329,914
1863	714,358	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	714,358
1864	872,428	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	872,428
1865	681,916	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	681,916
1866	434,672	395,018	60,323	259,011	41,472	60,557	11,872	2,914	.....	.....	19,977	3,085	254,449
1867	409,304	582,620	67,928	545,725	80,560	19,324	2,126	1,283	.....	1,519	158,817	28,124	208,445
1868	949,411	2,428,075	227,165	3,750,009	447,805	28,180	8,094	22,961	.....	15,065	374,516	62,419	187,122
1869	541,699	1,790,546	155,668	2,298,584	297,263	.....	.....	9,854	.....	.....	88,981	11,102	67,712
1870	941,476	3,443,794	290,934	4,084,376	493,100	.....	.....	20,367	.....	.....	146,514	27,082	110,043
Total.	9,991,789	31,068,319	2,417,108	47,472,719	5,012,219	.....	.....	185,302	.....	.....	3,869,768	568,225	1,808,935
1871	1,703,029	6,429,725	493,353	8,954,387	996,571	.....	.....	22,078	.....	.....	262,965	45,377	145,650
1872	1,880,048	4,200,048	380,543	6,666,891	722,742	.....	.....	14,163	.....	.....	542,099	89,658	222,942
1873	1,456,946	4,355,951	351,041	6,549,228	727,919	.....	.....	20,878	.....	.....	540,107	99,008	253,100
1874	1,218,092	3,505,641	278,897	4,884,367	549,164	.....	.....	21,279	.....	.....	445,571	81,916	286,836
1875	997,187	2,801,844	223,343	4,619,899	501,265	.....	.....	26,913	.....	.....	429,931	72,227	179,439
1876	908,612	2,286,009	191,526	4,400,036	458,471	.....	.....	24,520	.....	.....	426,552	69,505	166,590
1877	699,450	2,634,940	208,899	3,328,721	325,639	.....	.....	11,388	.....	.....	135,874	25,132	131,892
1878	551,928	1,848,025	129,607	2,859,015	269,345	.....	.....	17,937	.....	.....	118,209	19,443	124,541
1879	386,370	1,773,167	57,303	1,617,072	147,449	.....	.....	9,459	.....	.....	208,672	28,016	144,143
1880	689,632	2,282,369	152,096	3,598,103	324,654	.....	.....	16,637	.....	.....	264,788	40,943	155,302
Total.	2,351,339	4,945,717	339,128	7,922,925	726,036	34,408	108,294	73,664	15,957	5,180	907,444	139,214	1,425,415
1881	679,075	2,451,652	166,594	2,748,868	247,507	.....	.....	14,707	.....	.....	341,680	52,468	197,799
1882	498,312	1,833,175	123,107	1,479,381	134,633	.....	.....	16,628	.....	.....	261,408	43,979	174,965
1883	270,144	462,837	33,200	388,899	37,125	.....	.....	5,376	.....	.....	304,356	42,767	151,676
1884	167,210	27,437	2,602	479,973	35,052	3,430	7,496	6,852	5,014	2,356	.....	.....	109,422
1885	293,831	2,944	206	237,326	20,713	14,504	28,650	10,103	5,209	1,044	.....	.....	218,156
1886	435,735	493	26	1,830,765	178,878	1,245	18,341	4,723	2,135	598	.....	.....	231,924
1887	160,718	29,869	1,564	236,943	24,459	764	27,939	3,956	934	411	.....	.....	101,625
1888	128,343	65,880	2,787	141,199	13,888	1,981	9,450	1,091	2	1	.....	.....	99,645
1889	83,779	25,326	1,745	180,620	12,508	4,756	8,013	4,679	352	114	.....	.....	51,964
1890	134,642	46,054	2,297	193,956	21,768	7,728	8,405	5,549	2,311	656	.....	.....	88,239
Total.	2,106,172	161,919	9,283	3,980,825	342,166	186,013	207,318	103,062	80,074	24,723	.....	.....	1,143,107
1891	129,632	7,052	401	196,473	13,800	6,384	6,397	6,022	4,557	1,922	.....	.....	89,206
1892	141,263	720	40	293,965	29,044	7,703	19,097	9,244	.....	.....	.....	.....	76,130
1893	161,429	10,500	478	223,376	21,167	8,504	55,083	3,623	1,700	464	.....	.....	72,105
1894	212,880	18,395	1,384	324,256	32,892	21,735	25,746	11,516	26,161	5,524	.....	.....	113,583
1895	177,004	20,955	1,066	242,899	22,183	22,963	40,992	9,279	3,544	954	.....	.....	80,157
1896	291,162	60,144	2,986	781,361	53,775	41,665	51,608	19,753	.....	.....	6,670	2,875	113,500
1897	285,212	6,237	292	313,196	25,614	29,992	26,245	17,610	1,509	590	.....	.....	131,369
1898	290,036	1,525	107	1,012,910	78,125	16,654	28,166	8,330	3,140	1,241	.....	.....	157,413
1899	179,351	18,901	1,104	215,449	19,649	12,417	14,912	7,324	3,602	1,244	.....	.....	122,701
1900	288,103	17,490	1,425	371,440	32,912	17,986	29,072	10,856	29,191	9,909	.....	.....	186,443

¹ Annual Reports on Commerce and Navigation, United States Treasury Department.

THE GENERAL PROGRESS OF THE INDUSTRY.

Table 4 presents the summary of the cotton manufacture from 1840 to 1900, inclusive. The figures for 1900 do not include the manufacture of cotton small wares, which branch of the industry has been sep-

arately treated at the Twelfth Census, and is made the subject of a special chapter at the conclusion of the report on cotton manufactures.

TABLE 4.—COMPARATIVE SUMMARY, COTTON GOODS, 1840 TO 1900, WITH PER CENT OF INCREASE FOR EACH DECADE.

	DATE OF CENSUS.							PER CENT OF INCREASE.					
	1900	1890	1880	1870	1860	1850	1840	1890 to 1900	1880 to 1890	1870 to 1880	1860 to 1870	1850 to 1860	1840 to 1850
Number of establishments..	973	905	756	956	1,091	1,094	1,240	7.5	19.7	120.9	112.4	10.8	111.8
Capital.....	\$460,842,772	\$354,020,848	\$208,280,846	\$140,706,291	\$98,585,269	\$74,500,981	\$51,102,359	30.2	70.0	48.0	42.7	32.3	45.8
Salaries, etc., number.....	4,713	2,709	(3)	(3)	(3)	(3)	(3)	74.0	.....	.....	.....	.....	.....
Salaries.....	\$7,123,574	\$3,464,794	(3)	(3)	(3)	(3)	(3)	105.6	.....	.....	.....	.....	.....
Wage-earners, average number.....	297,929	218,876	174,659	135,369	122,028	92,286	72,119	36.1	25.3	29.0	10.9	32.2	28.0
Total wages.....	\$85,126,310	\$66,024,583	\$42,040,510	\$39,044,132	\$23,940,108	(3)	(4)	28.9	57.0	7.7	68.1	.....	.....
Men, 16 years and over..	134,354	88,837	61,760	42,790	46,859	33,150	(3)	51.2	43.8	44.3	18.7	41.4	.....
Wages.....	\$46,923,365	\$33,797,517	(3)	(3)	(3)	(3)	(4)	38.8	.....	.....	.....	.....	.....
Women, 16 years and over.....	123,709	106,607	84,558	69,687	75,169	59,136	(3)	16.0	26.1	21.4	17.4	27.1	.....
Wages.....	\$32,917,933	\$29,165,086	(3)	(3)	(3)	(3)	(4)	12.9	.....	.....	.....	.....	.....
Children, under 16 years.....	39,866	23,432	28,341	22,942	(3)	(3)	(3)	70.1	117.8	23.5	.....	.....	.....
Wages.....	\$5,285,012	\$3,061,985	(3)	(3)	(3)	(3)	(3)	72.6	.....	.....	.....	.....	.....
Miscellaneous expenses.....	\$21,650,144	\$16,716,524	(4)	(4)	(4)	(4)	(4)	29.5	.....	.....	.....	.....	.....
Cost of materials used.....	\$173,441,390	\$154,912,979	\$102,206,847	\$111,736,936	\$57,285,534	\$34,835,056	(4)	12.0	51.6	18.5	95.1	64.5	.....
Value of products.....	\$332,806,156	\$267,981,724	\$192,090,110	\$177,489,739	\$115,681,774	\$61,869,184	\$46,350,453	24.2	39.5	8.2	53.4	87.0	33.5
Active spindles, number....	19,008,352	14,188,103	10,653,435	7,132,415	5,235,727	(4)	2,284,631	34.0	33.2	49.4	36.2	.....	.....
Looms, number.....	450,682	324,866	225,759	157,310	126,313	(4)	(4)	38.7	43.9	43.5	24.5	.....	.....
Cotton consumed, bales.....	3,639,495	2,261,600	1,570,344	(4)	(4)	(4)	(4)	60.9	44.0	.....	.....	.....	.....
Cotton consumed, pounds....	1,814,002,512	1,117,946,776	750,343,981	398,305,257	422,704,975	(4)	(4)	62.3	49.0	33.4	15.8	.....	.....

¹ Decrease.

² Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this table. (See Table 24.)

³ Not reported separately.

⁴ Not reported.

The classification of cotton goods applies in all the statistics for the Twelfth Census to results in those establishments only in which the chief industry is the spinning of cotton yarn and the weaving of piece goods—one or both. The designation of cotton small wares applies to establishments chiefly engaged in the manufacture of the following classes of articles: Shoe and corset lacings, lamp and stove wicks, tapes, web-bings (other than elastic), lace edgings, dress and upholstery trimmings.

In order to preserve the basis for comparison with statistics of former censuses, Table 5 combines the statistics for cotton manufactures and cotton small wares for 1900, and shows the percentage that each is of the total.

Table 5 shows that the totals for capital, wages, cost of materials, and value of products for cotton small wares represented about 2 per cent of the totals for the entire cotton manufactures, and for the number of establishments about 8 per cent.

At the census of 1890 the average capital for the 905 establishments, which included both cotton goods and cotton small wares, was \$391,182. In 1900 for the 1,055 establishments of both classes the average capital was \$442,882; for the 973 establishments reported as cotton goods only it was \$473,631; and for the 82 classified as cotton small wares it was \$78,017.

TABLE 5.—COMBINED SUMMARY, COTTON GOODS AND COTTON SMALL WARES: 1900, WITH PERCENTAGE THAT EACH ITEM IS OF TOTAL.

	Total.	Cotton goods.	Cotton small wares.	PER CENT OF TOTAL.	
				Cotton goods.	Cotton small wares.
Number of establishments.....	1,055	973	82	92.2	7.8
Capital.....	\$467,240,157	\$460,842,772	\$6,397,385	98.6	1.4
Salaries, etc., number.....	4,902	4,713	189	96.1	3.9
Salaries.....	\$7,350,199	\$7,123,574	\$226,625	96.9	3.1
Wage-earners, average number.....	302,861	297,929	4,932	98.4	1.6
Total wages.....	\$86,689,752	\$85,126,310	\$1,563,442	98.2	1.8
Men, 16 years and over.....	135,721	134,354	1,367	99.0	1.0
Wages.....	\$47,594,831	\$46,923,365	\$671,516	98.6	1.4
Women, 16 years and over.....	126,882	123,709	3,173	97.5	2.5
Wages.....	\$33,746,665	\$32,917,933	\$828,732	97.5	2.5
Children, under 16 years.....	40,258	39,866	392	99.0	1.0
Wages.....	\$5,348,206	\$5,285,012	\$63,194	98.8	1.2
Miscellaneous expenses.....	\$22,112,678	\$21,650,144	\$462,534	97.9	2.1
Cost of materials used.....	\$176,551,527	\$173,441,390	\$3,110,137	98.2	1.8
Value of products.....	\$339,200,320	\$332,806,156	\$6,394,164	98.1	1.9
Active spindles, number....	19,050,952	19,008,352	42,600	99.8	0.2
Looms, number.....	455,752	450,682	5,070	98.9	1.1
Cotton consumed, bales.....	3,646,708	3,639,495	7,213	99.8	0.2
Cotton consumed, pounds....	1,817,643,390	1,814,002,512	3,640,878	99.8	0.2

With this general explanation of the new system of classification, it will be understood that all the tables hereafter given, except Table 23, make the comparison

between cotton goods alone in 1900 and cotton manufactures generally prior to this census. It is believed that the slight difference of 2 per cent will not seriously impair their general usefulness for purposes of comparison or may be allowed for by those who desire more exact figures.

GEOGRAPHIC DISTRIBUTION OF THE INDUSTRY.

The following tabular statement will bring to light the most interesting and the most important fact relating to the growth of the cotton-manufacturing industry during the decade 1890-1900:

SECTIONAL DISTRIBUTION OF ESTABLISHMENTS.

GEOGRAPHIC DIVISIONS.	1900	1890	1880
New England states.....	332	402	480
Middle states.....	225	290	189
Southern states.....	400	239	161
Western states.....	16	25	17
Total.....	973	905	756

The decrease in the number of establishments in the New England states is more apparent than real. It results partly from the elimination of certain mills from the classification as "cotton manufactures," already mentioned, and partly from the consolidation of establishments under one management. The same reasons account fully for the decline in the number of establishments in the Middle states: New York, New Jersey, Pennsylvania, Delaware, and Maryland. The manufacture has never existed on a considerable scale in the Western states. Comparative distance and inaccessibility with respect to the supply of raw cotton, distance from the commercial cities which are the headquarters of the dry goods trade, and difficulty in procuring the requisite trained labor—these and other causes have hitherto rendered the West an undesirable location for cotton mills, which need for economical operation cheap transportation of raw material, cheap fuel or unflinching waterpower, and nearness to large markets. The cotton manufacture, moreover, is essentially gregarious, and enjoys the greatest prosperity where it is carried on by large establishments or by large groups of small mills.

The growth of the industry in the South is the one great fact in its history during the past ten years. It will be seen that in 1880 there were, in that part of the country, 161 establishments only which made reports to the census; in 1890 there were only 239, an increase of 78, or 48.4 per cent; and in 1900 there were 400 separate establishments, an increase from 1890 of 161, or 67.4 per cent. A scrutiny of the returns by states shows that substantially the whole increase in the South has been in the 4 states of North Carolina, South Carolina, Georgia, and Alabama. The number of establishments in these 4 states was 119 in 1880, 191 in 1890, and 355

in 1900. In the other states of the Southern group the number was 42 in 1880, 48 in 1890, and 45 in 1900.

It would be revealing but a part of the truth to rest the statement of Southern industrial expansion upon the number of establishments; for in the decade 1880-1890 the number of spindles in the four leading Southern states increased almost twofold, from 422,807 to 1,195,256; and the average number of spindles to a mill increased from 3,553 to 6,258. In the decade from 1890 to 1900 the progress has been at an even greater ratio, although the basis of the calculation is larger, for the total number of spindles is 3,791,654, the numerical increase 2,596,398, the percentage of increase 217, and the average number of spindles to a mill has become 10,651. The subsequent tables in this report will give abundant evidence of the expansion of the Southern cotton industry in all directions—in capital, consumption of material, employment of labor, and quantity and value of product.

Speaking broadly, the cotton manufacturing industry did not exist in the South before the Civil War, and it existed only on the most restricted scale before 1880. There are now single establishments in Massachusetts which pay annually a larger sum in wages than the entire cost of labor in Southern cotton mills in 1880. The mills were small, equipped with antiquated machinery, engaged in spinning the coarsest numbers only, and in producing from cotton grown in the neighborhood the stout fabrics used for clothing by the negroes. It is probably not an exaggeration to say that prior to 1880 there was not a mill south of the latitude of Washington that would be classed as an efficient modern cotton factory, even according to the standard of that time. Before the Civil War the people of the South were almost exclusively engaged in agricultural pursuits. The ruling classes looked with disfavor upon manufactures and discouraged the introduction of the industrial arts save as they were necessary to meet local wants.

After the war closed it was some years before the people had recovered sufficiently from the disaster to undertake manufacturing. There had been attempts in the direction of cotton spinning and weaving before 1880, but the cotton exposition in Atlanta, in 1881, gave the industry an impetus which it has never since lost. The possibilities of the region were shown when the governor of Georgia appeared at the fair dressed in a suit of clothes made of cottonade manufactured on the grounds from cotton which had been picked from the stalk on the morning of the same day, in the sight of the visitors to the fair. That the local product of cotton could be worked up into finished cloth without transportation to a distant manufacturing town, together with the fact that the region had abundance of unemployed labor of a class similar to that which in the early days operated the mills of Waltham, Lowell, and

Manchester, brought before the people the vision of a new source of individual and public wealth to which they had previously been blind.

Once the opportunity had been presented to them the chance was eagerly seized, and all who were able to do so contributed to make the new enterprise successful. The press urged it upon those who had capital to invest, hailed joyfully every manufacturing project, and made much of every successful establishment. Municipal aid was given in the shape of exemption from taxation for a term of years. The railroads favored the scheme by arranging their freight schedules so as to encourage Southern manufacturers. The factories first established under the new régime showed large profits, and thus attracted more capital to the new industry. The advantages of the Southern country for cotton manufacturing began to attract attention in the North; and in many cases corporations already established increased their capital and built new mills in the South Atlantic states.

The earliest Southern enterprises were not in all cases begun as first-class establishments. Some of them were equipped with discarded machinery from Northern mills. But the manufacturers quickly learned the lesson that there is no industry in which profits are more directly proportioned to the perfection and speed of the machinery than in the spinning and weaving of cotton; and the old spindles and looms were speedily replaced with others of the newest pattern. A great proportion of the mills built and started within the past decade have been thoroughly up to date in all respects. In fact some improvements in mill construction are to be found in that section, which are not yet introduced in the manufacturing regions of the North. The first factory operated wholly by electricity, without shafting or belts, was located in the South, and until near the time of the writing of this report it was the only factory so equipped. By the use of electrical power it is possible to place the mill on high ground at a suitable distance from mill race and water wheel, and thus to secure accessibility, the health of operatives, and other benefits which could not be enjoyed when it was necessary to put the foundations of the mill below the foot of the waterfall.

The growth of the manufacturing industry in the South has been fairly continuous during the past ten years. How large it has been the figures show. For the most part the product of the region has been coarse or medium goods, as is usually the case in the early stages of the industry. But not a few mills have been constructed to make yarns of the higher medium numbers and cloth which approaches the lower limit of those classed as fine. A considerable part of the product of the region is exported. The industry is now important enough in the 4 states of North Carolina, South Carolina, Georgia, and Alabama to consume nearly one-third

of the crop of cotton grown in those states; and both North Carolina and South Carolina spin more than half the cotton grown within their limits.

The growth of the industry in the South has been remarkably steady. As is commonly the case with enterprises of this nature, it has been attended with not a little public excitement; more mills have been projected than have been built; some have been erected which their projectors would not have erected had they studied the matter carefully before entering upon the experiment. But the failures have been few, and upon the whole the return upon investment in Southern cotton mills has greatly exceeded that upon factories in the North. The fact that after a phenomenal growth during more than twenty years the expansion of old mills and the erection of new ones are still going on in the South is ample proof of the success of the enterprise.

The following table, made up from files of the New York Commercial and Financial Chronicle, presents a view of the annual increase in the number of spindles in the states south of the District of Columbia during the past twenty years. The Chronicle is recognized as among the best authorities upon the cotton crop and its distribution. Its statements for the first few years of the period covered were admittedly estimates; but from the year 1888 they are based upon actual returns from the Southern mills made directly to the Chronicle. For the census years, the census figures are substituted.

SPINDLES IN SOUTHERN MILLS, AND THEIR CONSUMPTION OF COTTON.

YEARS.	Number of spindles.	Bales of cotton used.
1880-81.....	610,000	205,000
1881-82.....	680,000	238,000
1882-83.....	860,000	331,000
1883-84.....	1,100,000	384,000
1884-85.....	1,150,000	266,000
1885-86.....	1,200,000	340,000
1886-87.....	1,225,000	397,929
1887-88.....	1,177,901	443,373
1888-89.....	1,344,576	486,603
1889-90.....	1,554,000	526,856
1890-91.....	1,750,017	605,916
1891-92.....	1,938,524	681,471
1892-93.....	2,082,197	733,701
1893-94.....	2,167,242	723,329
1894-95.....	2,379,281	833,352
1895-96.....	2,770,284	915,810
1896-97.....	3,197,545	1,024,432
1897-98.....	3,574,754	1,227,939
1898-99.....	3,832,201	1,400,026
1899-1900.....	4,298,188	1,477,775

Although there has been a surprising growth of the industry in the Southern states, yet it still remains true, as it has been true ever since Samuel Slater set in motion the first spindles operated by power in this country at Pawtucket, R. I., in 1791, that the largest and densest concentration of cotton manufacturing in the United States is in southern New England. A list is printed in the American State Papers¹ of the cotton mills within 30 miles of the town of Providence,

¹ Finance, Vol. III.

R. I., in November, 1809. The mills are enumerated in the chronological order of their establishment, beginning with the Pawtucket mill of Almy, Brown & Slater. Twenty-seven mills are mentioned as having in the aggregate 20,406 spindles "now in operation," but as having, including these, 34,900 spindles "which might be employed." There were also 14 other mills, all established in 1809, with 23,600 spindles, which were evidently not yet in operation. One mill, a Titan for those times, contained 10,000 spindles. The average of the 41 factories, counting their greatest capacity, was less than 1,500 spindles, and all combined they did not greatly exceed the average of one Fall River mill of the present time; yet they constituted the greatest concentration of the industry as it existed ninety years before the Twelfth Census was taken. In the year 1900 there were, within the same area, 7,209,235 spindles, as is shown by the following table:

TABLE 6.—NUMBER OF SPINDLES IN COTTON MILLS WITHIN 30 MILES OF PROVIDENCE, R. I.

LOCATION OF ESTABLISHMENTS.	Producing spindles (not including twisting, or doubling spindles).
Total	7,209,235
Brooklyn, Windham county, Conn	59,864
Killingly, Windham county, Conn	85,808
Plainfield, Windham county, Conn	74,736
Putnam, Windham county, Conn	106,800
Thompson, Windham county, Conn	111,688
Woodstock, Windham county, Conn	1,200
Voluntown, New London county, Conn	16,500
Bristol county, Mass	4,661,129
Blackstone, Worcester county, Mass	43,548
Grafton, Worcester county, Mass	62,344
Northbridge, Worcester county, Mass	89,264
Oxford, Worcester county, Mass	5,600
Sutton, Worcester county, Mass	54,496
Uxbridge, Worcester county, Mass	11,172
Webster, Worcester county, Mass	81,000
Bristol county, R. I	102,104
Hopkinton, Washington county, R. I	20,194
Kent county, R. I	472,406
Newport county, R. I	43,008
Providence county, R. I	1,206,374

In round numbers one-third of all the spindles in the United States are in the factories within that small area. It was remarked in the report on the Eleventh Census that 29.61 per cent of all the cotton spindles were operated in the two adjoining counties of Bristol, Mass., and Providence, R. I. The percentage has been maintained. It is now 30.3, and it greatly exceeds that of any other two counties. Indeed, the spindles of Providence county, the smaller of the two, outnumbered those of any Southern state except South Carolina. But the percentage of New England as a whole has suffered a considerable decline. In 1870 these six states had 77 per cent of all the spindles; in 1880 they had 81 per cent; in 1890 there was a decline to 76 per cent; and the percentage in 1900 was but 67.6.

CAPITAL.

Table 7 is a comparative summary, by geographic divisions, of the capital invested in the cotton manufacture in 1900, compared with 1890, with percentages of increase for the decade.

Table 7 shows that the total capital employed has increased 30.2 per cent. Taking the country as a whole, there is a small decrease in the reported value of the land. This is explained by the fact that in a great number of cases the land upon which factories are placed has but a nominal value; indeed, it had scarcely any value before the factories were erected and would be wholly unsalable if the buildings were removed. In these circumstances the officers making returns can only estimate the value, and estimates made at intervals of ten years may be expected to vary. There appears to have been an absolute decrease in the value of land in New England attached to cotton-manufacturing establishments; and the increase in land value in Southern states is 30.8 per cent, although the whole value of the plant has increased 131.4 per cent.

TABLE 7.—COMPARATIVE SUMMARY, COTTON GOODS, CAPITAL, BY GEOGRAPHIC DIVISIONS, WITH PERCENTAGES OF INCREASE: 1890 AND 1900.

GEOGRAPHIC DIVISIONS.	Year.	Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.
United States.....	1900	\$460,842,772	\$22,546,549	\$91,621,757	\$181,009,280	\$165,665,186
	1890	354,020,843	23,225,097	69,742,664	188,025,806	123,027,276
Per cent of increase		30.2	12.9	31.4	81.1	34.7
New England states.....	1900	272,608,914	14,820,368	55,523,598	99,093,175	103,231,838
	1890	243,153,249	17,074,774	47,871,383	91,666,375	86,640,717
Per cent of increase		12.1	118.2	16.0	8.1	19.3
Middle states.....	1900	59,078,820	3,277,033	11,327,917	20,779,919	23,693,951
	1890	51,676,249	2,680,935	10,124,364	20,306,550	18,664,400
Per cent of increase		14.3	27.0	11.9	2.8	26.9
Southern states.....	1900	124,532,864	4,250,540	23,741,094	59,179,798	37,361,432
	1890	53,827,303	3,248,968	10,590,952	24,079,920	15,907,463
Per cent of increase		131.4	30.8	124.2	145.8	184.9
Western states.....	1900	4,562,174	198,668	1,029,153	1,956,368	1,377,966
	1890	5,364,042	320,420	1,155,965	1,972,961	1,914,696
Per cent of increase		14.9	138.0	111.0	10.8	128.0

¹ Decrease.

In view of the current discussion as to the capitalization of corporations it becomes interesting to note that the objections to the practice of overcapitalization can not justly be urged against cotton-manufacturing establishments. The form of ownership of such establishments is to a remarkable degree the corporate. Of the 973 separate establishments here reported, 708 are classed as corporations, 142 are individual, and 123 are partnerships or firms. Even this does not show the actual situation definitely, since 56 of the individual and 68 of the partnership establishments in Pennsylvania, and most of them in the city of Philadelphia, are weaving factories only, and individually of moderate importance. Outside of Pennsylvania there are 678 corporations, 86 individual, and 55 partnership establishments. With reference to the two latter classes, there can, of course, be no question of overcapitalization. The capital they report is simply that employed in their business. But the incorporated companies have a share capital to an amount specified in their respective charters. Table 8 shows, by geographic divisions, the capital for corporations as reported at the census of 1900, compared with the nominal capital of corporations as represented by their capital stock.

TABLE 8.—COMPARISON OF CAPITAL OF CORPORATIONS, AS REPORTED AT CENSUS, WITH CAPITAL STOCK, BY STATES AND GEOGRAPHIC DIVISIONS: 1900.

STATES.	Capital as reported at census.	Capital stock.
United States.....	\$385,863,827	\$204,157,914
New England states.....	288,502,315	128,703,500
Maine.....	20,974,669	11,680,000
New Hampshire.....	28,713,786	17,725,000
Vermont.....	1,696,381	1,050,000
Massachusetts.....	135,878,779	71,088,500
Rhode Island.....	30,466,097	15,367,000
Connecticut.....	20,777,653	11,843,000
Middle states.....	38,521,797	15,205,000
New York.....	12,455,548	5,046,000
New Jersey.....	12,503,262	5,145,000
Pennsylvania.....	5,814,968	2,784,000
Maryland.....	3,248,019	2,280,000
Southern states.....	109,569,031	57,101,352
Virginia.....	4,338,206	2,886,700
North Carolina.....	25,840,465	14,304,500
South Carolina.....	36,276,727	17,835,200
Georgia.....	21,829,464	10,874,352
Kentucky.....	1,867,035	1,325,000
Tennessee.....	3,105,095	1,634,000
Alabama.....	10,509,595	5,300,000
Mississippi.....	2,199,249	1,231,000
Arkansas.....	249,328	200,000
Louisiana.....	1,716,088	850,000
Texas.....	1,660,109	600,000
Western states.....	4,250,684	3,148,082
Ohio.....	58,692	25,000
Indiana.....	1,632,536	800,000
Illinois.....	881,047	500,000
Wisconsin.....	455,235	375,000
Missouri.....	165,500	248,082
Nebraska.....	190,819	150,000
Colorado.....	647,805	250,000
California.....	371,000	800,000

NOTE.—In the foregoing table the nominal capital stock reported of the companies now united in the three industrial combinations is that of the separate companies before the amalgamation. The present capital stock is larger by \$15,200,000, and the total capital stock for the whole country is \$219,357,914. The addition can not conveniently be shown by states, inasmuch as the plants of two of the three combinations are located in several states. Moreover, the three industrial combinations have issued an aggregate amount of \$26,500,000 bonds.

It appears from Table 8 that not only in the United States as a whole, and in each of the geographical divisions, but in every individual state, except Missouri and California, the actual invested capital exceeds the par value of the share capital. Undoubtedly a considerable amount, many millions of dollars in the aggregate, of the capital reported to the census represents borrowed money; but after making the largest reasonable allowance for this item there must remain an excess of at least 25 per cent of assets over the nominal value of the share capital. Very few cotton-manufacturing establishments have a bonded debt.

In this connection it may be remarked that the system of industrial combination, commonly known as the "trust," has not seriously invaded the cotton-manufacturing industry. There were in 1900 only three such combinations: The New England Cotton Yarn Company, which produces but a small fraction of the yarns made for sale; the Mount Vernon-Woodberry Cotton Duck Company, which produces a considerable part of the sail duck made in the country; and the American Thread Company, which has combined several of the large establishments which produce sewing thread. The total value of the plants and miscellaneous items of capital of all the establishments controlled by these three industrial combinations is \$31,077,609. Their combined capital stock is \$33,000,000, and the total of their bonded debt is \$26,500,000.

EMPLOYEES AND WAGES.

In 1900 the average number of employees in the cotton industry (excluding cotton small wares), including officers and clerks, was 302,642, an increase of 81,057, or 36.54 per cent over the total for cotton goods and cotton small wares in 1890. Of this increase more than 60,000, or three-fourths of the whole, were in the Southern states. The figures which show the number and compensation of officers, clerks, and superintendents require no discussion. They are useful merely for the completion of the statistics and to bring out in its true light the magnitude of the industry. The real interest lies in the facts regarding those who are more strictly classified as wage-earners, the operatives in the mills. The importance of the figures relating to them is enhanced by the circumstance that the cotton-manufacturing industry is typical of the factory system in its highest form and on the largest scale. There is scarcely another industry that approaches it in the numbers of hands employed within mills; and the numbers of men and women employed are more nearly equal than is the case with any other industry of a magnitude to be compared with this.

Table 9 shows the number of wage-earners, men, women, and children, by geographical divisions, at the censuses of 1880, 1890, and 1900; and Table 11 shows the percentages of men, women, and children of total wage-earners, by geographic divisions, for 1880, 1890, and 1900.

TABLE 9.—COTTON GOODS, WAGE-EARNERS, AVERAGE NUMBER OF MEN, WOMEN, AND CHILDREN, BY GEOGRAPHIC DIVISIONS: 1880 TO 1900.

GEOGRAPHIC DIVISIONS.	TOTAL.			MEN, 16 YEARS AND OVER.			WOMEN, 16 YEARS AND OVER.			CHILDREN, UNDER 16 YEARS.		
	1900 ¹	1890	1880	1900	1890	1880	1900	1890	1880	1900	1890	1880
United States.....	297,929	218,876	172,544	134,354	88,837	59,685	123,709	106,607	84,539	39,866	23,432	28,320
New England states.....	162,294	147,859	125,779	78,217	63,749	45,521	73,258	73,445	62,554	10,819	10,165	17,704
Middle states.....	34,843	31,841	28,118	14,473	11,580	8,319	16,056	10,240	13,185	4,314	4,021	6,014
Southern states.....	97,494	30,415	16,317	40,528	12,517	4,633	32,528	15,083	7,587	24,488	8,815	4,097
Western states.....	3,298	3,261	2,330	1,136	991	612	1,867	1,889	1,213	295	431	505

¹ Does not include cotton small wares in 1900.

TABLE 10.—COTTON GOODS, WAGE-EARNERS, PERCENTAGE OF MEN, WOMEN, AND CHILDREN, BY GEOGRAPHIC DIVISIONS: 1880 TO 1900.

GEOGRAPHIC DIVISIONS.	MEN.			WOMEN.			CHILDREN.		
	Per cent of all wage-earners.			Per cent of all wage-earners.			Per cent of all wage-earners.		
	1900	1890	1880	1900	1890	1880	1900	1890	1880
United States...	45.1	40.6	34.6	41.5	48.7	49.0	13.4	10.7	16.4
New England states...	48.2	43.3	36.2	45.1	49.8	49.7	6.7	6.9	14.1
Middle states.....	41.5	36.4	31.7	46.1	51.0	46.9	12.4	12.6	21.4
Southern states.....	41.6	34.1	28.4	33.4	41.4	46.5	25.0	24.2	25.1
Western states.....	34.4	30.4	26.3	56.6	56.4	52.0	9.0	13.2	21.7

Tables 9 and 10 show that of the men, women, and children employed, first, the actual numbers of each class have increased during the past ten years, and, second, the number of men has increased much more rapidly than the number either of women or of children.

In the whole country there has been a numerical increase from 1890 to 1900 of 45,517 men, of 17,102 women, and of 16,434 children. There was an increase in the number of men in every section; a very slight decrease in the number of women in every division except the Southern states, and an increase in the number of children in the South, whereas in the rest of the country the number was nearly stationary. Since, in an expanding industry, the numbers of all classes ought to increase, a better medium for the sociological study of the condition of affairs is afforded by the second table, from which it appears that there is now for the first time a preponderance of the proportion of men employed, over the women. The proportion of men for the whole country increased from 40.6 per cent in 1890 to 45.1 per cent in 1900; the proportion of women declined from 48.7 per cent in 1890 to 41.5 per cent in 1900; the proportion of children advanced from 10.7 per cent to 13.4 per cent.

The returns for the Tenth Census afford the means of discovering that with a slight modification the readjustment of labor conditions has been going on for at least twenty years. Between 1880 and 1890 there was an increase of 6 men in every group of 100 mill operatives. The number of women in the group remained unchanged, owing to the partial discontinuance of the practice of employing children in all parts of the coun-

try except the South. In the mills of New England, which then formed a larger fraction of the total than they do now, the number of children in mills was reduced from 14 in every 100 to 7. Between 1890 and 1900 occurred the marvelous expansion of the industry in the South, with the usual result of such an event, a great demand for labor and the employment of whole families. The proportion of children was slightly increased there, by 1 in 100, but the proportion of women diminished by 8, and that of men increased by 7, in each 100. In New England the proportion of men increased 5, that of women decreased 5, in each 100, and the proportion of children remained stationary.

The important fact resulting from an examination of all these proportions is that the tendency is more and more to the employment of men, which, looking at the matter from the social point of view, is highly desirable, in that it diminishes the use of the labor of women in factory service, and doubly desirable in discontinuing the employment of child labor. In this last respect reform has not yet reached the Southern mills, where the supply of labor is not equal to the demand. But the evils of the system of employing children are fully recognized, an agitation for its abandonment is in progress, and no doubt the coming decade will see a substantial diminution of it.

The explanation of the generally increased employment of men is obvious. The chief reasons are two: First, that the operation of some of the modern machines requires the care of men, because it is beyond the physical and nervous capacity of women. For example, the improved high-speed and automatic looms, many of which are put under the charge of one weaver, can be operated most efficiently by men. Moreover, there has undoubtedly been a decrease in the number of women employed as mule spinners. The second cause of the change in the relative proportion of men and women, which, for reasons presently to be stated, is largely influential in the North, is itself a result of a generally improved condition of labor. Whereas formerly it was the custom for an entire family, or, at least, several of its members, to be employed in a mill, the father now earns enough to relieve the mother and some of the children of the necessity of going into the factory; or, perhaps, the mother and the elder daughters find other employment in the shops and offices

which manufacturing industry attracts to a community. It is not suggested that the change is one universally to be observed. Possibly the tendency is so slight that the fact of such a change going on can be discovered only when the statistics are studied in a large way. Nevertheless, the cases are sufficiently numerous to justify the assignment of this as one cause of the gradual change that is taking place in the proportion of men and women in the industry as a whole.

The change has not yet perceptibly affected the South. There the labor conditions are different. The industry is growing at a wonderful rate. The help employed is chiefly local. Whole families in that region enter the factories, because in no other way can the demand for labor be satisfied. Consequently the changes in the proportion of men, women, and children employed are largely fortuitous. Roughly speaking, there were three times as many men, twice as many women, and nearly three times as many children employed in Southern mills in 1900 as there were in 1890. The numerical increase was 28,011 men, 17,445 women, and 15,623 children. Manufacturers took whom they could get for operatives in the new mills. The employment of children was not a matter of choice but of necessity, and, economically, is a losing rather than a profitable system; for more than the saving in the dollars and cents of their wages is lost when the quantity and quality of their work are considered.

SKILLED OPERATIVES.

It was intended to make a complete canvass of the spinners and weavers employed in the cotton mills of the country, classified as men, women, and children. Owing to a defect in the form of the inquiry, which was not discovered in season to make a correction, there is reason to believe that some of the numbers were incorrectly returned, and the full table is not presented. Some facts which are trustworthy were, nevertheless, obtained. It was ascertained that during the census year there were between 5,000 and 6,000 persons employed as mule spinners, of whom about 2,250 were employed in Massachusetts mills, 750 in Rhode Island, 600 in New York, and 350 in Connecticut. About nine-tenths of the mule spinners were men. On the other hand, of about 43,000 frame spinners, only about one-sixth were men, and five-sixths were women and children.

The report of the number of weavers is entitled to more confidence than that of spinners, but it is not sufficiently accurate to be presented in detail. The number of weavers returned was 91,515, of whom 41,776 were men, 47,941 were women, and 1,798 were children. There are no earlier returns with which to compare these numbers. But it is well known to those conversant with the industry that only a few years ago the weaving of cotton goods was regarded as peculiarly the

work of women. The introduction of improved and fast looms has led more and more to the employment of men as weavers. The tendency is so marked that the next enumeration should show the men in a majority.

WAGES.

It is a matter of general experience that wages in cotton mills were higher in 1900 than they were in 1890. It is almost impossible to obtain a true average by applying the rules of arithmetic to magnitudes of such diverse nature as those which represent the numbers of operatives employed and the gross amount paid to them in wages. Moreover the method of ascertaining the average number of persons employed, which was used at the census of 1900, was quite different from that adopted in 1890, and the figures for 1890 are exclusively those for skilled labor.

MISCELLANEOUS EXPENSES.

Table 11 is a comparative summary of miscellaneous expenses, showing the per cent that each item is of the totals for 1890 and 1900.

TABLE 11.—COMPARATIVE SUMMARY, COTTON GOODS, MISCELLANEOUS EXPENSES,¹ 1890 AND 1900, WITH PER CENT WHICH EACH ITEM FORMS OF TOTAL.

	1900		1890	
	Amount.	Per cent of total.	Amount.	Per cent of total.
Total.....	\$20,057,190	100.0	\$16,716,524	100.0
Rent of works.....	691,075	3.4	488,735	2.9
Taxes, not including internal revenue.....	3,521,000	17.6	2,089,632	16.1
Rent of offices, interest, insurance, and all sundry expenses not hitherto included.	15,844,509	79.0	13,538,157	81.0

¹ Exclusive of contract work.

Table 11 shows that the amount paid for rent of works was exceedingly small when the magnitude of the industry is considered. As against the total value of land and buildings owned in 1900, of \$114,168,306, and in 1890, of \$92,967,761, there was paid for rent of works by manufacturers who did not own all the plant used, in 1900 the sum of \$691,075, and in 1890 the sum of \$488,735. Estimating the average rent at 6 per cent, the value of the land and buildings rented would have been \$11,517,917 in 1900, and \$8,145,583 in 1890, or about one-tenth of the real estate owned at the time of each census.

MATERIALS USED.

COTTON.

The consumption of raw cotton of all kinds, domestic and foreign, in all the textile mills of the country during the census year was 3,872,165 bales, having an

aggregate weight of 1,923,704,600 pounds. The use of cotton by the several textile industries was as follows:

	Bales.	Pounds.
In cotton mills proper.....	3,639,495	1,814,002,512
In hosiery and knit goods mills.....	99,518	49,451,301
In woolen mills.....	80,725	34,967,959
In worsted mills.....	12,079	5,276,751
In cotton small wares mills.....	7,213	3,640,878
In carpet mills.....	3,813	1,943,942
In cordage and twine mills.....	26,540	13,022,755
In felt and shoddy mills.....	2,782	1,398,502
Total.....	3,872,165	1,923,704,600

At the Twelfth Census no inquiry was made which reveals the variety of cotton used, save in respect to the cotton manufacturing industry proper, cotton small wares, and cordage and twine. It may nevertheless be assumed without risk of serious error that in establishments dealing with the wool fiber all the cotton used was the ordinary domestic staple. A certain amount of the cotton consumed in the few hosiery mills which reported spindles was Egyptian, and a small quantity of sea-island cotton was reported by one establishment, which is classified as "cordage and twine," as having been used in the manufacture of sewing thread. Disregarding these exceptions we may make the following classification of the cotton consumed:

	Bales.	Pounds.
Sea-island.....	47,207	18,442,634
Other domestic.....	3,748,750	1,849,417,034
Egyptian and other foreign.....	76,208	55,844,932
Total.....	3,872,165	1,923,704,600

The figures in the two preceding tables are those which are to be compared with the commercial and official statistics, in which no discrimination is made between the several classes of factories in which the cotton is consumed. Taking first the greatest item, that of ordinary domestic cotton, the report of the New York Commercial and Financial Chronicle—which is generally accepted by manufacturers as the most thorough and accurate—accounts for the taking of 3,792,618 bales, by manufacturers North and South during the crop year 1899-1900. The corresponding census number is 3,748,750 bales. Inasmuch as the commercial returns are for a year beginning September 1, 1899, whereas those of the census are for the year beginning June 1, 1899, and in the case of not a few mills some months earlier, the divergence of the two reports is small and easily to be accepted; and the close approximation of the two, especially when it is remembered that there is a not inconsiderable amount of cotton which is used for purposes other than spinning, is a confirmation of the accuracy of both. Against the census return of 47,207 bales of sea-island cotton used in the mills herein reported, the Chronicle reports 49,543 bales of that variety of cotton left for consumption in the United States

after deducting the amount exported from the total crop. This is a still closer correspondence between the two sets of figures. The difference between them is no greater than may easily be explained upon the grounds already mentioned. The imports of foreign cotton during the fiscal year ended June 30, 1900, amounted to 67,398,521 pounds, of which 1,381,463 pounds was reexported. The importation during the calendar year 1899, with which the consumption during the census year corresponded more nearly, was 62,014,809 pounds, and the net importation was 61,296,346 pounds, which exceeded by about 10 per cent the amount reported in the preceding table. It has already been explained that a certain amount—the exact quantity can not be stated—is masked in the returns of cotton-hosiery mills which were not asked to specify the kind of cotton used. Relative to these figures, it should be borne in mind that, whereas, the quantities reported in commercial returns are the gross purchases of material by manufacturers, the census figures are those of cotton which was actually manufactured and which entered into the merchandise reported under the head of products.

In 1900 the consumption of cotton in cotton mills proper was as follows:

	Bales.	Pounds.
Sea-island.....	47,207	18,442,634
Other domestic.....	3,516,080	1,739,714,946
Egyptian and other foreign.....	76,208	55,844,932
Total.....	3,639,495	1,814,002,512

"OTHER DOMESTIC" COTTON.

The consumption of domestic cotton, other than sea island, in the cotton mills of the country during the census year was 3,516,080 bales, as compared with 2,231,385 bales reported at the census of 1890, an increase of 58 per cent. The average weight of bales was 494.8 pounds. By geographic divisions the consumption of cotton by bales and pounds, and the average weight of bales, was as follows:

GEOGRAPHIC DIVISIONS.	Bales.	Pounds.	Average weight of bales.
New England states.....	1,719,622	874,011,257	508.3
Middle states.....	272,947	135,004,971	494.6
Southern states.....	1,477,775	707,159,521	478.5
Western states.....	45,736	23,589,197	514.7
Total.....	3,516,080	1,739,714,946	494.8

The variation shown in the weight of bales between the Northern and the Southern sections of the cotton-spinning industry is in strict accordance with experience. The bales made up from the crop of the Mississippi valley and of Texas are heavier than those of the Atlantic coast states. Spinners in the Carolinas and in Georgia, therefore, relying largely upon the local supply, make use of lighter bales than manufacturers in

the Eastern states, who draw largely upon the South-west for their raw material. The average weight of bales of the entire cotton crop of the United States during the crop year ending August 31, 1900, was, according to the commercial reports, 503.69 pounds; but the average weight of bales in the Carolinas and Georgia, from which states the bulk of the cotton con-

sumed in the South was derived, was but 489.91 pounds; whereas, the bales of Louisiana and Texas averaged a weight of 514.8 pounds.

Table 12 presents the facts relating to the cotton crop of the United States for twenty-one years, 1880 to 1900, inclusive, as reported by the United States Treasury Department.

TABLE 12.—QUANTITIES OF RAW COTTON PRODUCED, IMPORTED, EXPORTED, AND RETAINED FOR CONSUMPTION, 1880 TO 1900.¹

YEAR ENDING JUNE 30—	PRODUCTION.		Exports of domestic.	Domestic retained for consumption.	Imports.	Exports of foreign.	Foreign retained for consumption.	Total consumption, domestic and foreign.	Per cent of domestic product exported.
	Annual crop. ²	Crop in pounds, gross weight.							
	Bales.	Pounds.							
1880.....	5,761,252	2,771,797,156	1,822,061,114	949,736,042	3,547,792	234,729	3,313,063	953,049,105	65.73
1881.....	6,605,750	3,199,822,682	2,191,928,772	1,007,893,910	4,449,866	1,240,576	3,209,290	1,011,103,200	68.47
1882.....	5,456,048	2,588,240,050	1,739,975,961	848,264,089	4,339,952	1,843,490	2,496,462	850,700,551	67.23
1883.....	6,949,756	3,405,070,410	2,288,075,062	1,116,996,348	4,081,945	3,238,930	843,015	1,117,838,963	67.20
1884.....	5,713,200	2,757,544,422	1,862,572,530	894,971,892	7,019,492	1,353,936	5,665,556	900,637,448	67.52
1885.....	5,706,165	2,742,906,011	1,891,659,472	851,306,539	5,115,680	1,609,260	3,506,420	854,812,959	68.96
1886.....	6,676,691	3,132,305,659	2,058,037,444	1,124,268,215	5,072,334	1,276,961	3,795,373	1,128,063,588	64.08
1887.....	6,505,087	3,137,378,443	2,169,457,380	987,921,113	3,924,531	716,371	3,208,160	991,129,273	68.70
1888.....	7,046,833	3,439,172,391	2,264,120,826	1,175,051,505	5,497,892	203,972	5,293,920	1,180,345,185	65.53
1889.....	6,938,290	3,439,934,799	2,384,816,669	1,056,118,130	7,373,039	187,959	7,185,080	1,062,903,210	69.33
1890.....	7,311,322	3,627,366,133	2,471,799,853	1,155,566,330	8,606,049	248,104	8,357,945	1,163,924,275	68.15
1891.....	8,652,597	4,316,043,982	2,907,353,795	1,408,688,187	20,908,817	447,794	20,461,023	1,429,146,210	67.86
1892.....	9,035,379	4,506,575,984	2,935,219,811	1,571,356,173	28,663,769	182,777	28,480,992	1,599,887,167	65.13
1893.....	6,700,365	3,352,658,468	2,212,115,126	1,140,543,322	43,367,952	360,832	43,007,120	1,182,550,452	65.99
1894.....	7,549,817	3,769,331,478	2,683,282,326	1,086,099,153	27,705,949	1,029,936	26,676,013	1,112,775,166	71.19
1895.....	9,901,251	5,036,961,409	3,517,633,109	1,519,431,300	49,332,022	771,614	48,560,408	1,567,991,708	69.83
1896.....	7,157,346	3,592,410,851	2,335,226,385	1,257,190,466	55,350,520	1,188,356	54,162,164	1,311,352,630	65.00
1897.....	8,767,964	4,397,177,704	3,103,764,949	1,293,422,755	51,838,926	1,188,523	50,710,403	1,344,133,158	70.59
1898.....	11,199,994	5,677,250,827	3,850,204,295	1,826,995,532	52,660,363	499,684	52,160,679	1,879,156,211	67.82
1899.....	11,274,840	5,794,767,917	3,773,410,293	2,021,357,624	50,158,153	293,988	49,864,170	2,071,221,794	65.12
1900.....	9,436,416	4,757,062,942	3,100,588,188	1,656,479,754	67,398,521	1,381,463	66,017,058	1,722,496,812	65.18

¹Statistical abstract of the United States. U. S. Treasury Department, 1900.

²The "annual crop" represents the commercial movement for the years ending August 31, and was furnished by the New York Shipping and Commercial List, the New York Commercial and Financial Chronicle, and the New Orleans Cotton Exchange.

Inasmuch as a very large percentage of the cotton supply is of American origin, this statement of the crop by bales and pounds, and of its distribution, furnishes a measure of the annual increase of the cotton manufacturing industry in the United States, as compared with its increase in the rest of the world. It will be seen that the interval of twenty years made hardly any change in the percentage of the domestic products retained and of that which was exported, the difference being merely an increase of six-tenths of 1 per cent in the amount consumed at home. The ratio varies, of course, from year to year, but on the whole the table shows that the rate of increase of domestic

production is equal to that of Great Britain and the continent of Europe.

Table 13 exhibits the quantity, cost, and cost per pound of "other domestic" cotton consumed, by states, in 1880, 1890, and 1900. Inasmuch as the purpose of this table is to show the average cost of cotton, and not to compare quantities consumed—which fact is sufficiently brought out in the preceding tables—the returns for 1900 exclude the consumption in "cotton small wares" establishments, and cover those of cotton mills only, whereas for the two preceding decadal periods "cotton small wares" are included.

TABLE 13.—COTTON GOODS, QUANTITY, AND COST OF DOMESTIC COTTON, OTHER THAN SEA ISLAND, CONSUMED, BY STATES GEOGRAPHICALLY ARRANGED: 1880 TO 1900.

STATES.	1900				1890				1880 ¹			
	Bales.	Pounds.	Cost.	Cost per pound (cents).	Bales.	Pounds.	Cost.	Cost per pound (cents).	Bales.	Pounds.	Cost.	Cost per pound (cents).
United States.....	8,516,080	1,739,714,946	\$116,108,879	6.67	2,231,385	1,103,492,910	\$114,337,802	10.36	1,570,344	750,343,981	\$86,945,725	11.59
New England states.....	1,719,622	874,011,257	53,329,174	6.67	1,405,637	704,792,220	74,683,860	10.60	1,129,498	541,373,880	63,160,434	11.67
Maine.....	156,674	79,212,256	5,400,379	6.82	132,504	65,717,252	7,053,168	10.73	112,381	54,185,061	6,234,901	11.61
New Hampshire.....	271,262	136,805,127	9,394,529	6.87	214,034	107,319,124	11,203,742	10.44	157,675	76,386,499	8,629,063	11.80
Vermont.....	12,493	6,410,674	385,491	6.01	8,954	4,647,889	498,348	10.72	7,404	3,562,088	458,607	12.87
Massachusetts.....	1,015,305	517,088,846	33,771,414	6.53	765,773	383,539,221	40,206,887	10.48	574,857	273,713,889	31,107,154	11.86
Rhode Island.....	170,514	86,712,235	6,074,331	7.01	186,558	94,558,738	10,446,155	11.05	167,480	81,137,172	10,467,770	12.89
Connecticut.....	93,374	47,782,119	3,303,060	6.91	97,814	49,012,916	5,275,560	10.76	109,703	52,384,171	6,281,939	11.99

¹Includes sea-Island, Egyptian, and other foreign.

MANUFACTURES.

TABLE 13.—COTTON GOODS, QUANTITY, AND COST OF DOMESTIC COTTON, OTHER THAN SEA ISLAND, CONSUMED, BY STATES GEOGRAPHICALLY ARRANGED: 1880 TO 1900—Continued.

STATES.	1900				1890				1880 ¹			
	Bales.	Pounds.	Cost.	Cost per pound (cents).	Bales.	Pounds.	Cost.	Cost per pound (cents).	Bales.	Pounds.	Cost.	Cost per pound (cents).
Middle states	272,947	185,004,971	\$9,327,774	6.91	251,260	123,630,916	\$12,917,244	10.45	228,729	109,321,428	\$13,258,526	12.13
New York	99,064	50,464,770	3,513,661	6.96	78,171	39,038,689	4,192,105	10.74	64,614	31,656,594	3,981,106	12.58
New Jersey	15,872	8,183,469	641,858	6.62	15,482	8,231,147	905,524	11.00	21,069	9,950,609	1,319,422	13.26
Pennsylvania	74,382	35,033,214	2,521,768	7.19	92,705	44,629,588	4,371,693	9.80	83,997	40,311,809	4,749,428	11.78
Delaware	2,675	1,371,563	106,358	7.75	8,876	4,465,825	475,490	10.65	7,512	3,236,184	427,855	13.22
Maryland	80,954	39,901,955	2,644,129	6.63	55,026	27,265,667	2,972,432	10.90	51,537	24,166,232	2,780,715	11.51
Southern states	1,477,775	767,159,521	46,988,926	6.64	526,556	250,837,646	24,508,776	9.77	182,349	84,528,757	8,890,408	10.52
Virginia	88,118	17,832,465	1,154,215	6.47	22,731	10,616,206	1,080,773	10.18	11,461	5,087,519	601,796	11.83
North Carolina	404,148	189,984,759	13,004,720	7.16	114,371	53,546,289	5,396,974	10.08	27,642	11,832,641	1,125,984	9.52
South Carolina	485,024	229,899,760	14,909,520	6.49	133,342	64,000,000	6,242,593	9.75	33,624	15,001,005	1,723,187	11.05
Georgia	303,836	145,470,324	9,665,464	6.64	145,859	69,139,410	6,663,560	9.64	71,389	33,757,199	3,591,554	10.64
Kentucky	23,982	11,971,815	770,363	6.43	11,980	5,751,305	554,206	9.64	4,050	1,882,234	188,856	10.03
Tennessee	30,234	15,028,584	982,146	6.54	33,114	15,779,360	1,554,851	9.85	10,436	4,944,279	508,305	10.28
Alabama	134,371	67,987,299	4,206,721	6.19	29,962	14,726,454	1,372,653	9.32	14,702	7,271,791	729,202	10.03
Mississippi	20,962	10,363,458	623,576	6.02	17,366	8,449,834	793,600	9.39	6,411	2,881,853	301,226	10.45
Texas	18,045	9,304,434	568,517	6.09	18,181	8,828,188	850,156	9.63	2,446	1,119,986	11,280	9.40
All other Southern states ²	19,055	9,316,623	505,684	5.43	18,181	8,828,188	850,156	9.63	2,388	1,150,250	109,018	9.43
Western states	45,736	23,539,197	1,463,005	6.21	47,632	24,232,128	2,227,922	9.19	20,768	15,119,916	1,627,357	10.76
Ohio	19,884	10,283,614	608,822	5.92	11,023	5,840,078	383,556	6.57	5,323	2,506,182	258,198	10.30
Indiana	19,884	10,283,614	608,822	5.92	16,306	8,240,434	798,178	9.69	11,558	6,304,887	679,911	10.68
Illinois	4,565	2,316,727	145,773	6.29	6,405	3,267,188	312,621	9.57	2,261	1,099,130	110,969	10.10
Wisconsin	4,565	2,316,727	145,773	6.29	6,924	3,470,388	359,117	10.35	3,173	1,541,797	180,072	11.68
All other Western states ³	21,287	10,938,556	708,410	6.48	6,974	3,414,040	374,450	10.97	7,453	3,607,920	398,207	11.04

¹ Includes sea-Island, Egyptian, and other foreign.

² Includes establishments distributed as follows: 1900—Arkansas, 2; Louisiana, 2; West Virginia, 1. 1890—Arkansas, 2; Louisiana, 2; Texas, 1. 1880—Florida, 1; Arkansas, 2; Louisiana, 2; Texas, 2.

³ Includes establishments distributed as follows: 1900—California, 1; Colorado, 1; Illinois, 1; Missouri, 2; Nebraska, 1. 1890—California, 1; Iowa, 2; Missouri, 1. 1880—Illinois, 2; Michigan, 1; Minnesota, 1; Utah, 1; Wisconsin, 1.

It will be seen from an examination of Table 13 that the average price of cotton in 1899-1900 was much below that in 1890, and that the decline was still greater when compared with 1880. Another fact which has a certain bearing upon the future of cotton manufacturing is that the average price in all parts of the country was fairly uniform. In 1880 the average price in states using a considerable amount of cotton varied between 9.52 cents per pound in North Carolina and 13.26 cents in New Jersey. In 1890 the variation was between 9.32 cents per pound in Alabama and 11.05 cents in Rhode Island. In 1900 the variation in states using as many as 75,000 bales each was from 6.19 cents in Alabama to 7.16 cents in North Carolina. Of course no general inferences of great value can be drawn from such facts further than that the price of cotton tends, under the influence of a local demand for the local crop and the steady cheapening of transportation charges, to equalize itself over the whole country. Differences in the quality of cotton used in the industry in the several sections of the country, and the season at which cotton is bought—often a mere matter of lucky or unlucky prognostication on the part of manufacturers—these things have too much influence in establishing average prices to allow definite conclusions to be drawn from the figures. It will be interesting to note how far consumption is overtaking production in some of the cotton states.

STATES.	COTTON GINNED, 1899-1900 ¹ (CENSUS BULLETIN No. 58).		CONSUMPTION.	
	Bales.	Pounds.	Bales.	Pounds.
Total	3,693,432	1,772,213,188	1,365,497	651,174,607
Virginia	9,239	4,310,840	38,118	17,832,465
North Carolina	473,155	220,199,727	404,148	189,984,759
South Carolina	868,316	415,689,985	485,024	229,899,760
Georgia	1,239,032	592,752,992	303,836	145,470,324
Alabama	1,108,690	539,259,644	134,371	67,987,299

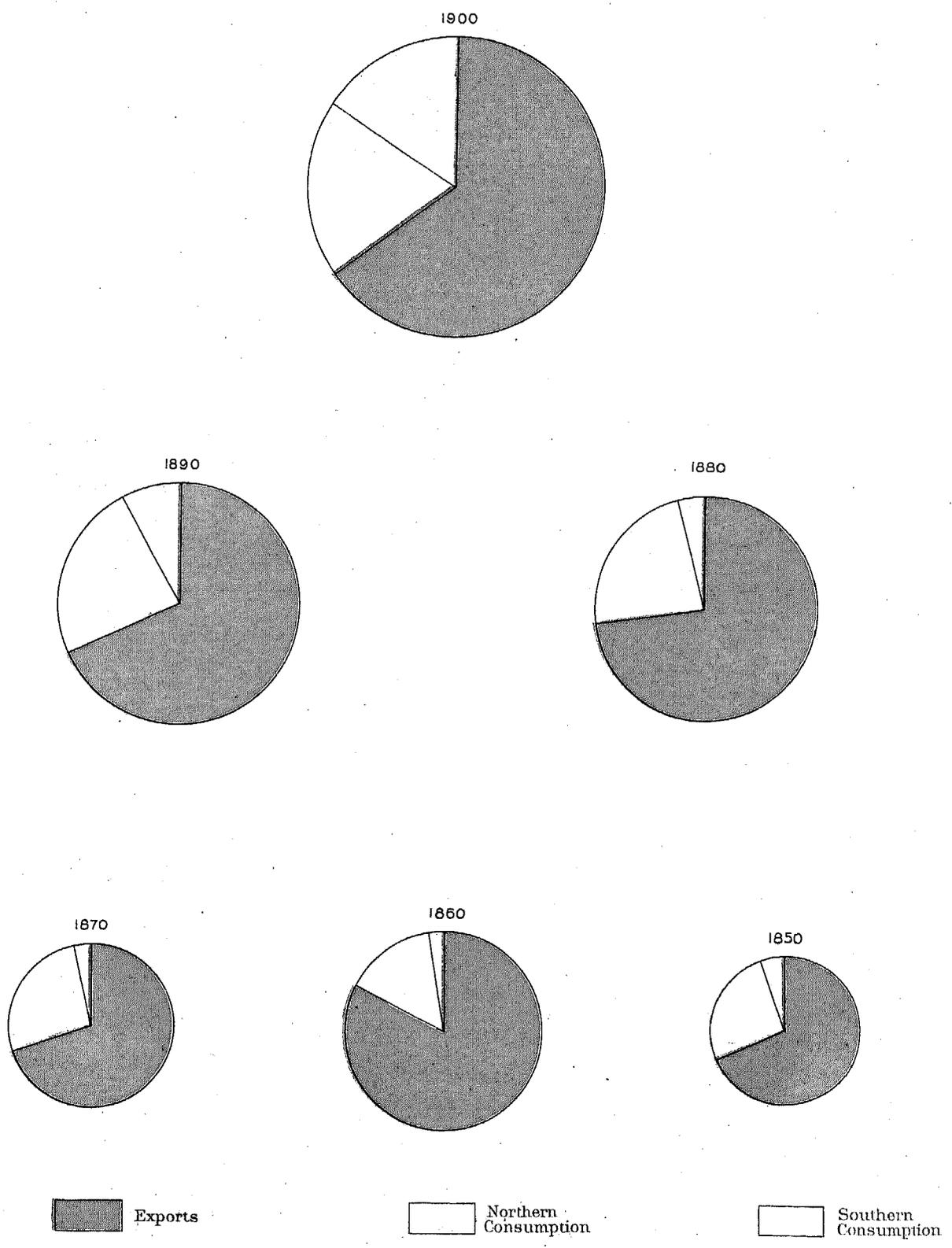
¹ Not including sea island.

It appears that South Carolina, the leading Southern state, consumed during the census year more than one-half as much cotton as its own crop; that North Carolina spinners took no less than 86 per cent of the ordinary cotton raised in the state; that in Georgia nearly one-fourth and in Alabama more than one-eighth of the crops of those great cotton-growing states was manufactured at home; and that Virginia, which is neither a large raiser nor a large user of cotton, produced only one-fourth of the amount needed for consumption within the state. Taking all five states together the Southern spinners left considerably less than two-thirds of the crop for export to Northern factories and to foreign countries. At the present rate of progress it will be but a short time before a full half of the cotton supply of the Atlantic Seaboard states will be consumed at home.

SEA-ISLAND COTTON.

The amount of sea-island cotton here reported as consumed in the United States is not only larger than

COTTON PRODUCTION, EXPORTS AND CONSUMPTION : 1850 TO 1900



the amount reported at any previous census, but it is also larger than the commercial report for any previous year. The nearest approach to the current figures are those for the crop year 1896-97 when the American consumption is fixed at 40,670 bales. The New York Chronicle reports are taken for the years intervening between 1890 and 1900.

AMERICAN CONSUMPTION OF SEA-ISLAND COTTON.

YEARS.	Bales.	YEARS.	Bales.
1890.....	21,283	1896.....	40,530
1891.....	26,651	1897.....	40,370
1892.....	32,093	1898.....	34,140
1893.....	22,811	1899.....	38,654
1894.....	34,845	1900.....	47,207
1895.....	34,981		

Notwithstanding an extending use of sea-island cotton, an increase in the crop has caused a decline in the price, which at this census is but 14.8 cents per pound, as compared with 25.1 cents in 1890. The use of this material is restricted to 5 states—Massachusetts, Rhode Island, Connecticut, New York, and New Jersey—although a small quantity is returned by one establishment in North Carolina.

EGYPTIAN COTTON.

The use of Egyptian cotton for the manufacture of fine fabrics, but more particularly as the material for knit underwear, has grown greatly during the last decade. The amount imported into the country nearly doubled during the ten years 1881-1890, rising from 4,440,996 pounds, valued at \$757,352, to 8,407,160, valued at \$1,393,071. But in the ensuing ten years the importations have still further multiplied eightfold. The following statement shows by fiscal years the imports of foreign cotton, which was nearly all Egyptian:

YEARS.	Pounds.	Value.
1890-01.....	20,908,817	\$2,825,004
1891-02.....	28,068,709	3,217,521
1892-03.....	49,337,952	4,688,799
1893-04.....	27,705,949	3,003,888
1894-05.....	49,332,022	4,714,375
1895-06.....	55,350,520	6,578,212
1896-07.....	51,898,925	5,884,262
1897-98.....	52,600,303	5,019,503
1898-99.....	50,158,158	5,018,146
1899-1900.....	67,393,521	7,960,945
Total for 10 years.....	447,444,997	48,905,655
Annual average.....	44,744,500	4,890,565

During the census year 1889-90 there was reported a use of 6,560,951 pounds of Egyptian cotton. The present returns account for a consumption of 55,844,932 pounds, which should properly be increased by an unknown amount consumed in a few hosiery establishments which spin a part, at least, of their own yarn.

Egyptian cotton possesses some peculiarities which adapt it especially to the uses to which it is put. It is especially desirable, on account of its natural silkiness, for the process of mercerization.

The engraved diagrams represent, for the United States, the cotton production, the amount exported, and the amount of Northern and Southern consumption.

YARN PURCHASED.

Although there has been no perceptible movement during the last ten years in the direction of the English system of treating spinning and weaving as distinct industries—in the sense that both processes are not usually carried on in one factory—yet there has been a large proportionate increase in the number and importance of yarn mills. At the census of 1890 a little less than one-eighth of the value of products reported consisted of “yarns for sale;” at this census almost exactly one-sixth of the product is so classed. Although this increase, as will presently be noted, was demanded largely for consumption in collateral industries, there was an augmented use of cotton yarn in weaving establishments. The return of cotton yarn purchased for use in cotton mills proper, in the census year 1899-1900, was 83,832,216 pounds, valued at \$15,749,536, as compared with 48,779,715 pounds, valued at \$10,853,536, in 1890, an increase in value of about 50 per cent. Nevertheless, the situation has not changed substantially since it was noted in the report on the Eleventh Census that the establishments classed as “cotton goods,” which make use of yarn not spun by themselves, are of three classes: (1) Those which both spin and weave, but do not produce enough yarn to supply their looms; (2) those which purchase fine yarn to be converted into sewing thread; and (3) those which weave only. It is noted elsewhere that the number of spindles in Pennsylvania has diminished during the last ten years. But there are in that state, chiefly in Philadelphia and its suburbs, a great many establishments which operate looms only in the production of the highest class of fancy-woven fabrics. They are by far the largest users of the yarn here reported among materials consumed. During the census year the factories in Pennsylvania took 36,304,919 pounds of this yarn, valued at \$6,741,518, about 43.3 per cent of all the yarn so taken by the mills of the United States. Pennsylvania, with but 1.6 per cent of the spindles operated in the United States, has 3.5 per cent of the looms.

YARNS OTHER THAN COTTON.

The consumption of raw fibers, other than cotton, in the cotton mills of the country is quite unimportant; but in special mills there is a large use of yarn made of such fibers. The facts relating thereto were, at the census of 1900, obtained in much greater detail than

heretofore. The following statement makes such comparisons as are possible with the statistics published in 1890:

MATERIALS.	1900		1890	
	Pounds.	Value.	Pounds.	Value.
Silk.....	298,716	\$1,158,321	32,851	\$154,336
Spun silk.....	208,403	625,658	18,583	83,064
Linen.....	1,676,403	350,962	17,722	9,823
Worsted.....	687,019	415,904	87,257	62,514
Woolens.....	435,361	176,467	196,874	181,657
Merino.....	87,064	21,946		
Mohair.....	21,393	21,435		
Camel's hair.....	184,595	62,838		
Jute.....	220,507	17,967	99,983	8,976
Mercerized cotton.....	16,233	15,752		
Tussur.....	15,918	19,102		
Other yarn.....	103,157	10,221	224,729	59,812
Total.....	3,508,774	2,896,577	677,954	509,682

It appears from the foregoing tabular statement that the use of yarn made from fibers other than cotton has increased more than fivefold in the last ten years. Such yarns are, of course, employed for mixing with cotton. With the exception of jute, and the inconsiderable amount reported indefinitely as "other yarn,"

they are all of higher cost than ordinary cotton yarn; and their use implies not an adulteration, but an improvement of the fabrics into which they enter.

OTHER MATERIALS.

Raw cotton and yarn account for 80 per cent of the total value of the materials used. The rest is made up of oil and starch, mill supplies, fuel, and freight. The purity of the goods manufactured in American mills is attested by the fact that no place needs to be reserved in this branch of the statistics for any articles used elsewhere for "loading" fabrics. A careful return was required of the quantity of starch consumed—a necessity in dressing warps—and it appears that it constitutes only 3.7 per cent of the weight of piece goods and yarn produced.

PRODUCTS.

Table 14 exhibits the kinds, quantity, and value of products of cotton mills in 1900, together with such comparison with the corresponding figures for 1890 as the inquiries at the Eleventh Census render possible.

TABLE 14.—PRODUCTS OF COTTON MILLS IN DETAIL: 1890 AND 1900.

KINDS.	1900		1890	
	Square yards.	Value.	Square yards.	Value.
Aggregate value.....		\$332,806,156		\$267,981,724
Woven goods:				
Total.....	4,509,750,616	243,218,155	3,004,320,473	193,874,275
Plain cloths for printing or converting—				
Total.....	1,581,618,827	57,780,940	955,294,320	43,550,174
Not finer than No. 28 warp.....	1,056,278,952	35,610,575	(1)	(1)
Finer than No. 28 warp.....	525,339,875	22,164,365	(1)	(1)
Brown or bleached sheetings and shirtings.....	1,212,403,048	55,513,032	962,238,062	55,193,439
Ginghams.....	278,392,708	16,179,200	268,996,715	20,686,390
Ticks, denims, and stripes.....	171,800,853	16,446,633	167,121,426	16,987,546
Drills.....	237,206,549	11,862,794	² 334,020,091	² 23,601,239
Twills and sateens.....	235,860,518	14,301,302		
Cottonades.....	26,323,947	2,791,431	(3)	(3)
Napped fabrics.....	268,852,716	18,231,044	⁴ 132,524,706	⁴ 10,574,924
Fancy woven fabrics.....	237,841,603	21,066,310	127,373,179	12,545,929
Corduroy, cotton velvet, and plush.....	7,961,523	2,682,017	(3)	(3)
Duck—				
Total.....	129,234,076	14,263,008	55,192,538	8,664,395
Sail.....	11,750,151	2,216,371	(3)	(3)
Other.....	117,483,925	12,046,637	(3)	(3)
Bags and bagging.....	30,039,616	2,554,192	(3)	(3)
Mosquito and other netting.....	41,885,023	875,868	(3)	(3)
Upholstery goods—				
Total.....	50,334,609	8,070,384	1,559,436	2,070,239
Tapestries (piece goods and curtains).....	10,131,538	4,123,600	642,061	354,987
Lace and lace curtains.....	36,880,198	3,585,138	(3)	1,225,364
Chenille curtains.....	805,414	257,840	666,405	360,705
Other, including covers.....	2,517,459	703,806	250,970	129,182
Yarns for sale.....	332,186,012	\$55,188,663	166,397,003	\$33,247,596
Sewing cotton.....	15,741,062	11,825,218	13,808,309	11,637,500
Twine.....	11,132,250	1,475,140	8,533,730	1,364,300
Tape and webbing.....	(3)	328,801	(3)	(3)
Batting and wadding.....	10,567,700	804,016	20,470,556	2,094,232
Waste for sale.....	270,100,756	5,532,234	141,109,597	5,679,701
Other products of cotton.....	(3)	5,154,170	(3)	(3)
All other products.....		9,199,753		20,084,120
	Pounds.	Value.	Pounds.	Value.

¹ No separation of print cloths was made in 1890.
² Drills, twills, and sateens.

³ Not separately reported.
⁴ Cotton flannels.

The total value of the products of all the mills here reported was \$332,806,156, of which \$243,218,155, or 73.1 per cent, represented the value of woven goods; \$55,188,663, or 16.6 per cent, the value of yarn spun

to be used in other mills; \$11,825,218, or 3.6 per cent, the value of sewing cotton; and \$22,574,120, or 6.8 per cent, the value of miscellaneous and by-products. The proportion of these several classes of goods varies but

slightly from that indicated in the census returns of 1890. There was a decline of about 1 per cent in the relative value of woven goods, an increase of about 4 per cent in the relative value of yarn for sale, and a decrease in miscellaneous products. It should, nevertheless, be remarked that the more thorough classification of products at this census is responsible for an apparent decline in miscellaneous products which is not real. A large part of the "all other products" reported in 1890 should undoubtedly fall into some of the newly specified classes of woven goods. In respect to the corresponding item in the returns of the present census, a still more detailed classification would have removed from "all other products" a large quantity and value of toweling and other woven products which are not properly classified as piece goods.

An inspection of the table brings out the fact which is known to all persons acquainted with the trade in cotton goods, namely, that the demand for coarse and medium goods is many times that for fine fabrics. The largest single item is that of sheetings and shirtings, 1,212,403,048 square yards, the whole of which is made from coarse or medium yarns; and the next in point of magnitude is the 1,056,278,952 square yards of print cloths, not finer than No. 28 warp. Most of the other classes of goods are wholly or mostly woven from medium or coarse yarns. The exceptions are the finer-print cloths, 525,334,875 yards (which is only one-ninth of the gross yardage of woven goods), a certain portion of the fancy woven fabrics, a part of the twills and sateens, and a small part of the gingham. The fact that there is a great demand for coarse and medium goods and a limited market for fine goods is pertinent to the suggestion that manufacturers who are unable to compete successfully in the production of standard plain cloths can find their salvation in turning to the spinning of fine yarns and the weaving of fine fabrics.

In comparing the quantities and values of goods in 1890 and in 1900 it will be seen that, taking both classes of print cloths, there was an increase in quantity of more than one-half, and an increase in value of little more than one-third. There was an increase in the quantity of standard sheetings and shirtings of rather more than one-fourth, but the aggregate value was almost the same in 1890 and 1900. A small increase in the quantity of gingham is accompanied by a reduction of more than one-fifth in the gross value. The same discrepancy is to be noted throughout the list. The explanation—the greatly diminished cost of cotton during the census year 1899–1900—is an interesting illustration of the untrustworthiness of statistics showing the value of products as a test of the condition of an industry, or for the purpose of comparing one industry with another.

An interesting feature of the details respecting woven

goods is the great increase in the quantity of articles classed as upholstery goods. In 1890 they were reported as of a total value of \$2,070,239; in 1900 they were returned at \$8,670,384, consequently, the industry has become more than four times as important as it was ten years ago. Practically the whole of this industry is located in the city of Philadelphia.

An important increase is also to be noted in the production of yarns for sale. The amount, in fact, has almost exactly doubled, and the value is two-thirds greater than in 1890. There is a large and growing demand for yarn in knitting mills and in weaving establishments which do no spinning, as well as in mills which spin too little for their own consumption. Prior to 1890 there were few yarn mills in the South, but during the last decade there have been many factories of that class put in operation. A large part of the yarn here reported can be traced to its ultimate use. Thus, we find that 83,832,216 pounds were used in other mills, classed as "cotton goods;" 55,217,994 pounds in the wool manufactures; 131,820,068 in the hosiery and knit goods manufactures; 10,860,648 pounds in cotton small wares establishments; 6,444,208 pounds in silk manufactures; 3,860,235 in cordage and twine; 810,957 pounds in linen manufactures; and 301,888 pounds in jute manufactures. This leaves but 39,037,798 pounds not accounted for, but the consumption of yarn for other purposes is large—for example, in winding wire to insulate it for electrical conduction. The production of sewing cotton has not kept pace, in expansion, with most other branches of the industry. It may be that the consolidation of the producing companies has led to a more close approximation of demand and supply. It will be noted that, in common with other branches of the cotton manufacture, the average price of sewing cotton has declined.

MATERIALS AND PRODUCTS TWICE REPORTED.

The gross value at the factory of all the products of cotton mills is reported as \$332,806,156. This sum is no doubt in excess of the net product, inasmuch as in many cases the finished product of one mill is the material of another. The excess is, nevertheless, far less proportionately than is the case with many other industries, for the reason that, as is elsewhere explained, the great majority of establishments in this branch of textile manufacturing carry through their raw material, cotton, from the baled lint to the woven cloth. In the aggregate, however, there is a large consumption of partially manufactured material consumed by weaving establishments, of which some spin a quantity of yarn insufficient to supply their looms, and others do not spin at all. Following is a statement, as complete as can be made, of the partially manufactured materials con-

sumed which must be eliminated from the total of both materials and products to show the facts regarding this industry:

ARTICLES.	Value.
Yarn:	
Cotton.....	\$15,749,536
Silk.....	1,158,321
Spun silk.....	625,658
Worsted.....	415,904
Woolen.....	176,467
Other.....	520,223
Total of yarn.....	18,646,109
Waste of other mills.....	1,513,281
Oil.....	491,179
Starch.....	1,223,102
Chemicals and dyestuffs.....	5,671,768
Mill supplies.....	7,064,490
Other materials.....	4,614,468
Total.....	39,827,397

Probably a considerable amount of the chemicals and dyestuffs reported consisted either of crude materials of domestic origin, which do not appear anywhere as a product of manufacture, or of articles imported in a con-

dition for immediate use; but it is impossible to separate the amounts from the total, or even to make a reasonable estimate of their value. The whole is therefore counted as a duplication.

Deducting the total above shown from the total value of materials used, the remainder is \$133,613,993. Deducting it also from the total value of products, the remainder is \$292,978,759.

DYEING AND FINISHING.

The dyeing and finishing of cotton yarn and cloth is carried on partly in cotton mills and partly in independent establishments. The statistics of this industry are presented in the reports on combined textiles, and on the dyeing and finishing of textiles. Table 15 shows the additional work done upon the products of mills after spinning or weaving in both classes of establishments, and the additional value reported to have been given to those products by the several processes.

TABLE 15.—DYEING AND FINISHING IN COTTON MILLS AND IN INDEPENDENT ESTABLISHMENTS: 1900.

PROCESS.	TOTAL.		IN COTTON MILLS.		IN INDEPENDENT ESTABLISHMENTS.	
	Quantity, pounds.	Value added.	Quantity, pounds.	Value added.	Quantity, pounds.	Value added.
Yarn:						
Bleached.....	12,780,518	\$252,685			12,780,518	\$252,685
Dyed.....	205,713,712	7,691,268	151,610,157	\$5,464,356	54,103,555	2,226,912
Mercerized.....	3,018,573	487,946	2,149,722	323,330	868,851	159,616
Total yarn treated.....	221,512,803	8,431,849	153,759,879	5,792,686	67,752,924	2,639,163
	Square yards.	Value added.	Square yards.	Value added.	Square yards.	Value added.
Cloth:						
Bleached.....	1,162,593,900	\$7,023,875	197,691,533	\$932,452	964,902,367	\$6,691,423
Dyed.....	685,374,965	8,923,925	125,894,626	1,398,721	559,480,339	7,585,204
Printed.....	1,233,191,438	21,239,782	292,741,100	5,242,695	940,450,338	15,997,087
Mercerized.....	7,973,506	400,118			7,973,506	400,118
Total cloth treated.....	3,089,133,809	38,187,700	616,327,259	7,513,868	2,472,806,550	30,673,832
Total value added.....		46,619,549		13,306,554		33,312,995

From Table 15 it appears that \$46,619,549 was added to the value of goods produced in the cotton mills of the country, by the various processes of dyeing and finishing. Manufacturers were not asked to return the amount of yarn bleached, and the full added value was therefore not ascertained. Even without this amount the returns show that of the yarn treated 69.4 per cent was treated in the cotton mills, and only 30.6 per cent in independent establishments. On the other hand four-fifths of the cloth treated was operated upon in independent establishments. Of the 4,509,750,616 square yards of woven goods reported in Table 14, 1,233,191,438 square yards were printed; 685,374,965 square yards were dyed; 278,392,708

square yards were ginghams, and 171,800,853 square yards ticks, denims, and stripes, containing dyed yarns—a total of 2,368,759,964 square yards. This indicates that something more than one-half of the woven goods produced in cotton mills is colored by printing or dyeing before entering into consumption. The figures relating to bleaching are to be considered with full allowance for the fact that bleaching is a necessary preliminary to printing and other processes, so that the same material is twice reported. Many manufacturers in making returns of dyeing or printing did not report separately the amounts bleached, but treated the whole process as one.

FINENESS OF GOODS—AVERAGE NUMBER OF YARN.

The method adopted for ascertaining the average number of yarn spun is the same as that first introduced at the Eleventh Census. The method in use prior to that time was based upon the number of spindles producing yarn of a particular fineness. For example, the average number of yarn produced by two mills, each having 10,000 spindles, the one spinning No. 20's and the other spinning No. 30's would be No. 25. This method was faulty, inasmuch as it assumed the equal speed and efficiency of all spindles, and also because it took no account of the fact that spindles of equal efficiency making coarse yarns spin a greater weight of yarn than those making fine yarn. The new mode of calculating it is based upon the quantity of yarn produced. The average of 5,000 pounds of No. 20 and 7,000 pounds of No. 36 would be No. 29.333. There would be 100,000 hanks (of 840 yards) of No. 20 and 352,000 hanks of No. 36, and the average is ascertained by dividing the number of hanks by the number of pounds. Of course, this method does not give an absolutely accurate result, inasmuch as manufacturers can not in all cases estimate exactly what is the average number of their own production, particularly if they make yarn of many degrees of fineness; but it is more nearly correct than the former system and is the most satisfactory method yet devised. To illustrate the inaccuracy that arises in the use of the present method, there is a mill in the state of New York which has a majority of its spindles producing yarn finer than No. 40; but as it operates also a comparatively small number of mules making coarse hosiery yarn, it reports its average number as 18.

It is, and probably it always will be, true that an overwhelmingly great proportion of the cotton goods demanded for use even in wealthy communities is made of medium or coarse yarns. It will be seen from the table showing the gross spinning of fine, medium, and coarse yarns, that not much more than one-twentieth of the yarn spun is classed as fine. Nevertheless there is a constant tendency toward finer spinning. The demand for cloth classed strictly as fine increases steadily, and, among the users of the heavy goods which represent the spinning and weaving industries in pioneer times, the desire grows for the standard sheetings and shirtings made of yarn ranging from No. 25 to No. 40. Yet the perversity of averages conceals these tendencies to a great extent, as will become evident upon an examination of the following statement, showing by states and geographic divisions the average number of yarn spun in 1900 and 1890:

STATES.	AVERAGE NUMBER OF YARN.	
	1900	1890
United States.....	21.573	22.93
New England states.....	25.560	26.20
Maine.....	22.987	22.66
New Hampshire.....	19.174	21.14
Vermont.....	27.894	25.95
Massachusetts.....	25.087	26.75
Rhode Island.....	36.541	34.73
Connecticut.....	30.373	29.91
Middle states.....	19.176	20.45
New York.....	23.457	27.69
New Jersey.....	35.370	37.14
Pennsylvania.....	16.489	16.65
Delaware.....	23.522	22.33
Maryland.....	9.357	9.35
Southern states.....	17.046	14.76
Virginia.....	15.287	17.04
North Carolina.....	18.830	15.30
South Carolina.....	19.040	15.13
Georgia.....	14.371	14.35
Kentucky.....	13.722	15.76
Tennessee.....	12.722	12.22
Alabama.....	14.437	12.67
Mississippi.....	14.344	14.58
Arkansas.....	5.878	.....
Louisiana.....	15.876	.....
Texas.....	9.680	.....
Western states.....	19.418	16.32
Indiana.....	18.262	14.66
Illinois.....	22.000	17.20
Wisconsin.....	20.870	20.87
Nebraska.....	27.000	.....
Missouri.....	15.426	.....
Colorado.....	20.000	.....
California.....	9.000	.....

From the foregoing figures it would be natural to conclude that the tendency has been toward coarser spinning. But it will be seen that the average number of yarn in the Southern states, where the largest increase has taken place, has advanced two and a quarter numbers. Yet because the average in that section is still eight and a half numbers below the average in New England, the general average of the whole country is reduced. In New England there was a large increase in the spinning of coarse, medium, and fine yarns. The proportional increase of fine spinning was 59.3 per cent more than the increase of coarse, and 94.7 per cent more than the increase of medium goods; but since the actual increase in pounds of fine yarn spun was less than the increase in the two other classes, the general average is slightly reduced. Table 16, showing the aggregate amount of yarn spun, by states geographically arranged, divided into coarse, medium, and fine, in 1900 and 1890, gives a much better idea of the situation than can be obtained from any calculation of the average number.

TABLE 16.—YARNS SPUN, CLASSIFIED BY GRADE, BY STATES GEOGRAPHICALLY ARRANGED: 1890 AND 1900.

STATES.	1900					1890			
	Number of hanks of yarn spun.	Total.	No. 20 and under.	No. 21 to No. 40.	No. 41 and over.	Total.	No. 20 and under.	No. 21 to No. 40.	No. 41 and over.
United States	31,660,042,486	<i>Pounds.</i> 1,467,565,971	<i>Pounds.</i> 850,203,953	<i>Pounds.</i> 540,166,147	<i>Pounds.</i> 77,195,871	<i>Pounds.</i> 901,842,238	<i>Pounds.</i> 480,273,239	<i>Pounds.</i> 386,723,173	<i>Pounds.</i> 34,845,826
New England states	19,067,774,000	745,990,534	304,842,149	369,423,518	71,724,867	574,084,144	207,672,353	331,611,339	34,800,452
Maine.....	1,536,861,865	67,003,337	40,530,149	23,608,965	2,864,273	54,963,253	26,577,650	23,385,603	.....
New Hampshire.....	2,089,377,338	108,963,243	79,300,869	29,667,374	.....	91,167,408	54,984,591	36,182,517	.....
Vermont.....	151,549,744	5,432,933	1,525,033	3,907,950	.....	3,752,391	1,243,508	2,508,883	.....
Massachusetts.....	11,106,618,977	442,533,758	164,190,352	235,617,217	42,731,189	308,797,274	103,234,514	186,750,241	18,812,519
Rhode Island.....	2,822,384,752	77,233,360	3,061,667	57,341,561	16,235,132	75,037,935	8,280,776	55,640,821	11,116,338
Connecticut.....	1,360,984,324	44,803,303	15,634,079	19,280,451	9,894,273	40,365,833	13,351,014	22,143,274	4,871,595
Middle states	2,260,033,536	117,856,490	86,166,567	27,105,119	4,584,804	103,035,788	62,850,759	40,139,655	45,374
New York.....	985,573,613	42,014,730	25,241,091	16,443,639	330,000	82,033,114	6,553,540	25,529,574	.....
New Jersey.....	432,593,550	12,230,347	5,366,044	2,379,499	3,884,804	6,133,039	1,456,672	4,631,593	45,374
Pennsylvania.....	555,394,994	32,463,390	25,344,251	6,754,139	370,000	40,233,918	32,215,744	8,023,174	.....
Delaware.....	24,965,630	1,061,474	133,632	927,842	.....	3,323,233	2,325,960	1,502,278	.....
Maryland.....	281,502,689	30,031,549	30,031,549	.....	.....	20,751,879	20,293,843	453,036	.....
Southern states	9,998,763,591	536,546,002	445,967,812	139,691,990	886,200	209,987,348	197,443,432	12,543,916	.....
Virginia.....	230,991,103	15,110,233	13,457,370	1,652,363	.....	7,719,379	7,719,379	.....	.....
North Carolina.....	2,945,812,639	156,435,539	99,021,341	55,527,998	886,200	45,043,638	41,972,080	3,076,558	.....
South Carolina.....	3,730,694,191	195,930,440	132,003,637	63,026,753	.....	54,520,363	53,275,593	1,244,770	.....
Georgia.....	1,680,985,417	116,967,671	103,276,364	8,691,307	.....	58,832,378	52,611,129	6,221,249	.....
Kentucky.....	124,480,316	9,071,044	5,818,514	3,252,530	.....	4,243,115	2,246,776	2,001,339	.....
Tennessee.....	141,889,665	11,152,567	11,152,567	.....	.....	12,310,343	12,310,343	.....	.....
Alabama.....	835,446,339	57,866,762	51,325,723	6,541,039	.....	11,699,255	11,699,255	.....	.....
Mississippi.....	113,456,633	7,909,625	7,909,625	.....	.....	6,966,959	6,966,959	.....	.....
Arkansas.....	5,251,553	393,279	393,279	.....	.....	.....	.....	.....	.....
Louisiana.....	111,105,000	6,993,216	6,993,216	.....	.....	.....	.....	.....	.....
Texas.....	78,650,620	8,210,626	8,210,626	.....	.....	.....	.....	.....	.....
All other Southern states.....	.....	.....	.....	.....	.....	8,641,918	8,641,918	.....	.....
Western states	833,471,859	17,172,945	13,227,425	3,945,520	.....	14,734,958	12,306,695	2,428,263	.....
Indiana.....	153,265,234	8,666,072	8,666,072	.....	.....	6,649,187	6,649,187	.....	.....
Illinois.....	48,345,506	2,197,523	.....	2,197,523	.....	2,374,131	950,000	1,424,131	.....
Wisconsin.....	86,855,304	1,705,128	938,756	776,372	.....	2,032,606	1,673,474	1,004,132	.....
Missouri.....	20,339,500	1,318,500	1,318,500	.....	.....	.....	.....	.....	.....
Nebraska.....	26,233,375	971,625	971,625	.....	.....	.....	.....	.....	.....
Colorado.....	42,031,940	2,104,097	2,104,097	.....	.....	.....	.....	.....	.....
California.....	1,350,000	150,000	150,000	.....	.....	.....	.....	.....	.....
All other Western states.....	.....	.....	.....	.....	.....	3,029,034	3,029,034	.....	.....

POWER.

The returns of power used in the cotton-manufacturing industry present the extraordinary fact, that of the 306,121 horsepower employed in all the establishments in the United States, only 12,602 horsepower, less than 1.6 per cent, was hired. It should be explained that a large number of corporations whose factories are operated by waterpower do not own the water privileges. That is to say, they pay in one form or another for the water which turns their wheels. This expense is not classed as rent, but as a part of the materials used. It is evidently an expense of the same sort as the fuel which is consumed in supplying steam power.

Although the statistics are lacking for a comparison of the kinds of power in use during the year 1900 with those employed in previous census years, yet it may be surmised with a degree of confidence that the present returns signalize a culmination of the use of steam as compared with waterpower. In the early days of the industry cotton factories were usually, one might almost say invariably, located upon waterpower. So universally was this the practice that cotton mills which were erected in coast towns, where coal could be procured at a low transportation cost for steam making,

were distinguished in the titles of the corporations as "steam" mills. But the inadequacy of waterpower as the motive force for great groups of factories, and the failures and stoppages caused by drought, flood and ice, led to the addition of steam engines for a supplementary power, and to the erection of mills without reference to waterpower. This change has gone to such an extent that steam power used in the factories is more than double the waterpower employed. The numbers representing the two kinds of power are 527,186 horsepower for steam, and 250,790 horsepower for water. There are, nevertheless, some reasons for believing that there may be a reaction, the importance of which can not be predicted. The development of the use of electricity carries with it the possibility of a cheap transmission of power to a distance without serious loss. In this way it becomes feasible to make available certain waterpowers which, on account of their location or the physical characteristics of the country, have heretofore been useless. The growing importance of electricity as a motor appears in the current returns which show a total of over 18,000 electric horsepower, owned and rented. The application of electricity direct to the machinery, without the use of shafting and belting, is comparatively new, but it is certain that it has a great future, and that here-

after manufacturers will find in the system great benefits, of which a saving in expense will not be the least.

MACHINERY.

Ever since the first application of mechanical power to the movement of the spindle there has been a constant improvement in the machinery employed in the spinning and weaving of cotton. The foundation of the cotton manufacture was laid in the almost simultaneous invention of the steam engine and the earliest form of spinning machinery. Hargreaves's spinning jenny, invented in 1764 and patented in 1770; Arkwright's water frame, the invention of drawing by rollers, brought out in 1769 and improved in 1775; Crompton's mule—so called because it combined the principles of Hargreaves's and Arkwright's inventions—patented in 1779; these antedated but a short time the introduction of Watts's steam engine, which was invented in 1769, became a practicable power agent by improvements made in 1781, and was first applied to the production of cotton yarn in 1785. All of Arkwright's patents, which included improvements in carding, drawing, roving, and spinning, were thrown open in 1785. In the same year Dr. Cartwright invented the power loom, and thus completed the group of fundamental inventions of which all modern spinning and weaving machinery is but an adaptation and a series of improvements.

But there has been another series of inventions directed to the economical, rapid, and thorough preparation of the cotton for spinning, as well as a constant succession of improvements in the final processes of the manufacture, which have multiplied a hundred if not a thousand fold the efficiency of the industry. In the year 1800 the scutching machine was introduced, the invention of Snodgrass, of Glasgow. The lap machine was introduced in nearly the form it has today by Mr. John Crighton, of Manchester, in 1814. Mr. Crighton also effected an important reform in the processes of opening and scutching. The invention of the carding machine and its gradual evolution into the almost perfect mechanism of to-day, cover nearly the whole of the Nineteenth century. The first important improvement was made in 1823. The principle of the revolving flat was devised in 1834. After being neglected for more than twenty years it was taken up and improved in 1857, and about 1880 became, in the hands of the Messrs. Ashworth, substantially the carding machine of the present day. The combing machine was first exhibited by its inventor, Mr. Josué Heilmann, of Mulhouse, at the Paris Exposition, in 1851.

The mule, as invented by Crompton, was a semi-manual machine. Richard Roberts, in 1835, transformed it into the purely automatic machine which we see at this time, so exact and precise in its several successive motions that it seems endowed with almost human intelligence. Since Roberts's time the history of the mule has been one of development in detail and

of better construction, but the changes of this sort have made it vastly more useful in speed, in precision of action, and in the quality of the yarn which it makes. The improvement in frame spinning has been much greater than in the mule. The invention of the ring and the traveler in the third decade of the last century opened a wide field to the genius of mechanics. Improvement followed improvement in rapid succession until the Rabbeth spindle reached what seems to be the practical limit of speed, and, therefore, of the production of yarn, at about 10,000 turns a minute. The final improvements, which made ring spinning more economical and profitable than mule spinning, for all except certain special purposes, in mills wherein both spinning and weaving are carried on, were accomplished in the closing decades of the century.

The most important advance in machinery during the past decade has been in the loom. Glancing backward we find that Cartwright invented the power loom in 1785, as has been already noted. The policy of the British Government at that time and for many years afterwards forbade the exportation of machinery and of patterns for making it. Accordingly, it was necessary to reinvent the power-loom for use in the manufacture of cotton in this country. The feat was successfully accomplished by Francis Cabot Lowell, in 1814. Numerous improvements were made during the ensuing three-quarters of a century. The efforts of inventors are always directed toward the discovery of devices by which the speed of machinery may be increased, of automatic motions which will diminish the amount of care and attention to be bestowed by operatives upon the machines, and to a reduction of the time during which the machines must be stopped, either after a breakage of the yarn or to replace exhausted shuttles. Stop-motions have been devised for many of the machines used in cotton mills, arrangements by which the breaking of a single thread at any point causes the whole machine to stop instantly.

The problem of the loom, so far as necessary stop-pages are concerned, has been most difficult. For spinning, the process, whether on the mule or on the frame, may be said to be almost continuous, the time required for doffing forming but an inappreciable part of the whole. But the capacity of the shuttle is limited. At the speed at which modern looms are run the yarn in the shuttle box is exhausted in about eight minutes, in the manufacture of medium shirtings or print cloths. If the yarn is coarser and the speed the same, the shuttle needs to be changed still oftener. Inasmuch as the cost of labor in weaving is fully one-half the labor cost of converting a pound of raw cotton into cloth, the importance of reducing or of doing away altogether with the time occupied in changing shuttles is too evident to be more than stated. Attention was long ago turned in this direction. In 1840 an English patent was taken out for a shuttle-changing device when the weft was broken or

exhausted; but it seems not to have been successful, otherwise it would have been adopted by manufacturers throughout the world. Many inventors have exercised their ingenuity to overcome the mechanical difficulty. Within the last decade the principle so long sought after has been found, but it consists not in a changing of the shuttle while the loom is in motion, but in giving the shuttle a fresh supply of weft without removing it from the loom. The success of the Northrop loom has stimulated inventors to accomplish equally brilliant results by new devices of the shuttle-changing variety. Although there are some machines which effect the change with promising efficiency, they are yet in the experimental stage.

On the other hand, the Northrop loom, which was first brought to the attention of manufacturers in April, 1895, has such self-evident advantages for the weaving of plain cloth that in less than five years, at the end of the year 1899, the output was more than 42,500 looms. This loom has two fundamental improvements—the filling-changing mechanisms and the warp-stopping devices. By the first, the time of stoppage on account of exhausted shuttles is wholly saved. By the second, the machine is stopped instantly upon the breaking of a single warp thread. In combination they add greatly to the productive capacity of the weaver. A good weaver, operating plain narrow looms, has a capacity of 8 looms. His time is chiefly occupied by replacing empty shuttles and in mending broken warp threads. The first is the more important, inasmuch as the failure to repair warp breaks merely causes an imperfection in the weaving, which is tolerated in many classes of goods; whereas an empty shuttle means a stoppage of the loom. The filling-changing mechanism reduces to a small fraction the time needed to supply looms with weft, and thus leaves most of the weaver's time free to repair warp breaks. His capacity is therefore increased to the number of looms for which he can perform this service, practically, to double or more than double the number of plain looms which he can tend. The saving which is effected is illustrated by the fact that in some cases the weaver, on leaving his work for dinner, has left all his looms running, the filling magazines all full, and on returning at the expiration of the dinner interval has found some of them still running. All those in which there had been a breakage of the warp had of course stopped, and therefore no imperfect cloth had been woven.

The stimulation to the production of a rival to this invention has already been mentioned. But the introduction of the Northrop loom has had an important reflex influence upon other parts of the cotton-manufac-

turing machinery. For example, an appreciable gain of time can be made if the frequency of stoppages for changing the shuttle can be diminished. Heretofore mule filling has not been adapted to the Northrop loom, where a large ring bobbin can be more readily handled than a mule cop on the spindle. Moreover, there has been in the past difficulty in making mule cops of large size that would be proof against breaking in the shuttle, or in being handled about the mill. The waste from mule filling was in many cases so great as to be prohibitive. Weavers preferred to use small cops rather than take the risks of large cops falling apart in weaving. But the problem of spinning large, well-wound mule cops of filling yarn has now been solved, and the necessary devices can be applied to old mules. A weaver tending 8 looms, and changing shuttles that contain yarn enough to supply the loom eight minutes, has to make an average change of one a minute. The larger mule cops contain enough No. 36 yarn to run twelve minutes, and of course his loom capacity is considerably increased. Many manufacturers prefer mule filling for certain fabrics on account of the soft appearance and "feel" of the cloth, as compared with ring-filling cloth, and the new mills which have been built to make the higher grades of fine cloths are still fully equipped with mules to make filling.

If the mule is being adapted to produce yarns usable where frame-spun yarn has heretofore had full sway, there has been a promising effort to adapt the ring-traveler principle to the production of a slack-twisted yarn, which could formerly be made only on the mule, at the same time winding it on the bare spindle, in cop form. This improvement is as yet only in the experimental stage. At present there seems to be a difficulty in the way of making use of the device for the production of knitting yarns, which constitutes the largest demand for yarns not immediately used by the spinner. Soft-twisted yarns for knitting purposes should be in large cops to avoid frequent piecings in the knitting machine. This does not now seem practicable, for the greater diameter of ring necessary would bring too great a strain upon the yarn. No doubt in time this difficulty can be overcome, as many difficulties greater than this have been surmounted. The attempt to solve the problem is cited as evidence that the age of invention in the marvelously developed cotton-manufacturing industry has not yet closed.

THE PROGRESS OF THE INDUSTRY AS INDICATED BY
THE NUMBER OF SPINDLES.

Table 17 shows the number of cotton spindles used in textile manufactures, by states, 1890 and 1900.

TABLE 17.—NUMBER OF ACTIVE COTTON SPINDLES IN THE TEXTILE INDUSTRY, BY STATES GEOGRAPHICALLY ARRANGED: 1890 AND 1900.

STATES.	1900						1890
	Total.	In cotton mills.	In hosiery and knit goods mills.	In worsted mills.	In woolen and carpet mills.	In cotton small wares and cordage and twine factories.	Total.
United States.....	19,472,232	19,008,352	206,698	95,356	59,460	102,366	14,384,180
New England states.....	18,171,377	12,850,987	187,876	95,356	27,844	60,814	10,934,297
Maine.....	848,377	841,521			3,584	3,272	892,762
New Hampshire.....	1,249,875	1,243,555	6,320				1,198,643
Vermont.....	100,028	100,028					71,591
Massachusetts.....	7,932,883	7,784,687	91,356	50,080	3,760	8,000	5,872,852
Rhode Island.....	1,976,198	1,880,622		45,276	10,000	40,300	1,959,294
Connecticut.....	1,064,016	1,000,674	89,700		10,000	13,742	939,155
Middle states.....	1,721,347	1,647,251	52,712		20,184	1,200	1,716,019
New York.....	764,492	720,268	38,404		5,820		629,324
New Jersey.....	481,730	481,730					374,442
Pennsylvania.....	336,509	306,637	14,308		14,364	1,200	496,551
Delaware.....	34,552	34,552					53,916
Maryland.....	154,064	154,064					161,786
Southern states.....	4,354,034	4,298,188	16,610		5,000	34,236	1,563,598
Virginia.....	132,707	126,827	5,880				94,294
North Carolina.....	1,137,328	1,133,432	2,860			1,086	844,006
South Carolina.....	1,496,969	1,481,849	6,620				832,781
Georgia.....	832,321	815,545				16,776	445,452
Kentucky.....	66,693	66,693					42,942
Tennessee.....	130,296	123,896			5,000	1,400	98,824
Alabama.....	419,968	411,828				8,640	79,362
Mississippi.....	78,146	75,122				3,024	57,004
Arkansas.....	13,060	9,700				3,360	5,780
Louisiana.....	57,850	55,600	2,250				48,050
Texas.....	48,756	48,756					16,000
Western states.....	225,474	211,926			6,932	6,016	170,266
Ohio.....	4,600					4,600	16,580
Indiana.....	108,983	102,483			6,500		80,064
Illinois.....	31,488	31,488					21,800
Wisconsin.....	21,496	21,496					32,532
Iowa.....							6,000
Missouri.....	13,654	13,654					6,090
Nebraska.....	15,488	15,488					
Utah.....	432				432		
Colorado.....	17,312	17,312					
Kansas.....	2,016					2,016	
California.....	10,000	10,000					6,000

The number of working spindles is the universally accepted measure of the capacity of cotton mills, and of the growth of the industry in any particular state or region. It is admittedly an imperfect measure; but it is not only more accurate than would be any expression in terms of capital employed, number of hands or their wages, quantity or value of materials consumed, or weight or value of product, but it is also a better gauge than is available for most industries. The present mill of 50,000 spindles is a vastly larger factory in all respects than was the mill of 50,000 spindles in 1850, and the 19,000,000 spindles of the year 1900 undoubtedly produce five times as great an amount of goods as the 7,000,000 spindles of 1870. Nevertheless, the necessity manufacturers are under to adopt improvements in machinery produces such an equalizing effect upon the several establishments at any one time that the percentage of correction needed is not great; and the rate of progress in the efficiency of machinery is so well known that it is easy to make allowance for it in comparisons of one time with another.

The grand total of active producing cotton spindles in all the textile mills of the United States during the

census year 1899-1900 was 19,472,232, as compared with 14,384,180¹ at the Eleventh Census, a numerical increase of 5,088,052 spindles, or 35.4 per cent. These spindles were located as follows:

	1900	1890
In cotton mills.....	19,008,352	14,138,103
In hosiery and knit goods mills.....	206,698	69,830
In worsted mills.....	95,356	98,225
In woolen mills ¹	59,460	53,022
In cotton small wares establishments.....	42,600	(5)
In cordage and twine factories.....	59,766	(3)
Total.....	19,472,232	14,384,180

¹ Including carpets. ² Included in cotton mills. ³ Not reported.

The indicated increase in the number of spindles in mills other than cotton factories is apparent rather than real. A company in New England having 75,000 spindles, which in 1890 made both woven goods and knit goods, and was then classed as operating a cotton factory, now makes hosiery and knit goods exclusively,

¹ The total number of spindles in the United States as reported at the Eleventh Census was 14,550,323, of which 166,143 were idle spindles in cotton mills. At this census no idle spindles which are likely to be put in operation again were reported from any state.

and being classed with that industry swells the total unduly. In many cases, both in 1890 and in 1900, companies that produce both cotton and woolen or worsted goods, or mixed goods, made divided returns of their operations; some such companies made but one return, being classified according to the relative importance of their cotton or their woolen business. The fact of their making one return or divided returns at one census and not at the other explains partially the apparent increase in 1900. No doubt a certain part of the increase is real.

Although the gross number of operating spindles in mills of all kinds, 19,472,232, is to be taken as the true measure of the magnitude of the cotton industry in the United States, the present report deals exclusively with the spindles in cotton mills proper. The percentage of increase in them in the whole country is almost exactly 34 per cent. If we estimate that the average efficiency of spindles has increased 5 per cent during the same period, the ability of American mills to supply a demand for goods has increased about 40 per cent. Numerically there has been an addition of 2,014,832 spindles, or 18.6 per cent, in New England; of 13,529 spindles in number, or 0.8 per cent, in the Middle states; of 2,744,188 spindles in number, or 176.6 per cent, in

the Southern states; and of 47,700 spindles in number, or 29 per cent, in the Western states. Taking account of the spinning capacity of spindles, the growth of the industry in the New England states is probably not greatly above that which is indicated by the actual number of spindles, since the mills in that part of the country were in advance of the South in installing improved spindles. On the other hand, not only has the number of spindles in the Southern states become nearly three-fold that reported in 1890, but the spindles themselves are for the most part of the latest and most efficient types. With respect to one state the test of capacity by the number of spindles wholly fails. The industry in Pennsylvania is largely one of weaving yarn made elsewhere. Although the state ranks fifth in the value of the products of its cotton mills, and fourth among the states in the amount of wages paid to employees, it is only the twelfth according to the number of spindles. It shows a considerable increase of looms, and the industry has in fact expanded during the decade, but the number of spindles has declined.

Table 18 shows the mule and frame spindles in cotton mills, by states geographically arranged: 1880, 1890, and 1900.

TABLE 18.—NUMBER OF SPINDLES IN COTTON MILLS, BY STATES GEOGRAPHICALLY ARRANGED: 1880, 1890, AND 1900.

STATES.	1900			1890			1880
	Total.	Mule.	Frame.	Total.	Mule.	Frame.	Total.
United States.....	19,008,352	5,563,480	13,444,872	14,188,103	5,863,486	8,324,617	10,658,495
New England states.....	12,850,987	4,477,199	8,373,788	10,836,155	4,391,895	6,444,260	8,632,087
Maine.....	841,521	256,948	584,573	885,762	344,697	541,065	695,924
New Hampshire.....	1,243,555	287,165	956,390	1,195,643	364,234	831,409	944,053
Vermont.....	100,028	43,316	56,712	71,591	42,735	28,856	55,081
Massachusetts.....	7,784,687	2,556,316	5,228,371	5,824,518	2,430,719	3,393,799	4,236,084
Rhode Island.....	1,880,622	940,328	940,294	1,924,486	811,869	1,112,617	1,764,569
Connecticut.....	1,000,574	393,126	607,448	984,155	397,641	586,514	936,376
Middle states.....	1,647,251	858,675	788,576	1,633,722	822,613	811,109	1,391,164
New York.....	720,268	367,136	353,132	606,796	334,210	272,586	561,658
New Jersey.....	431,780	367,092	64,688	374,442	304,480	69,962	232,221
Pennsylvania.....	306,637	124,447	182,190	439,638	176,687	263,951	425,391
Delaware.....	34,552	.....	34,552	53,916	2,880	51,036	46,188
Maryland.....	154,064	.....	154,064	158,930	5,356	153,574	126,706
Southern states ¹	4,298,188	180,534	4,117,654	1,554,000	108,474	1,445,526	1,542,048
Virginia.....	126,927	2,825	124,102	94,294	13,198	81,096	44,340
North Carolina.....	1,189,432	35,352	1,154,080	337,733	30,920	306,813	92,385
South Carolina.....	1,431,349	10,752	1,420,597	322,784	4,000	318,784	32,334
Georgia.....	815,545	84,926	730,619	445,452	20,624	424,828	198,655
Kentucky.....	66,933	13,359	53,574	42,942	8,784	34,158	9,022
Tennessee.....	123,896	20,780	103,116	97,524	21,568	75,956	35,735
Alabama.....	411,328	8,000	403,328	79,234	9,460	69,774	49,432
Mississippi.....	76,122	.....	76,122	57,004	.....	57,004	18,568
Arkansas.....	9,700	.....	9,700	.....	.....	.....	.....
Louisiana.....	53,600	.....	53,600	46,200	.....	46,200	.....
Texas.....	48,756	.....	48,756	15,000	.....	15,000	.....
Western states ²	211,926	47,072	164,854	164,226	40,504	123,722	188,136
Ohio.....	.....	.....	.....	16,560	8,152	8,408	13,328
Indiana.....	102,488	16,320	86,168	74,604	16,320	58,284	33,396
Illinois.....	31,488	16,000	15,488	21,800	8,000	13,800	.....
Wisconsin.....	21,496	2,816	18,680	32,592	5,632	26,960	.....
Iowa.....	.....	.....	.....	6,000	.....	6,000	.....
Missouri.....	.....	.....	.....	6,670	2,400	4,270	19,312
Nebraska.....	13,654	.....	13,654	.....	.....	.....	.....
Colorado.....	15,488	6,272	9,216	.....	.....	.....	.....
California.....	17,312	5,664	11,648	.....	.....	.....	.....
.....	10,000	.....	10,000	6,000	.....	6,000	.....

¹ Includes in 1880, 11,576 spindles reported by states other than those named.

² Includes in 1880, 22,100 spindles reported by states other than those named.

Attention was called in the report upon the Eleventh Census to the steady substitution of frame spindles for mules. The change has been going on to a marked degree during the past ten years. It would, perhaps, not be accurate to assert that mules have been to any great extent removed from old mills and ring spindles placed in them. The more correct view is that substantially all the new spinning is frame spinning. In New England the increase in mule spindles is less than 100,000; of frame spindles, nearly 2,000,000. In the South ten years ago there were only 108,474 mule spindles; there are now reported 180,534; but as contrasted with this very moderate increase we have an addition of almost 2,700,000 frame spindles. In the Middle states the mule has more than held its own. Ten years ago there was an excess of about 11,000 mule spindles over ring spindles. By the present count the excess is about 70,000. It is well known that although for most purposes in cotton manufacturing the yarn made upon ring spindles is altogether satisfactory, there is a demand for slack-twisted yarn chiefly for knit underwear, which has heretofore been produced by the mule only. Moreover, a mechanical difficulty which has not been overcome has been experienced in employing ring spindles for spinning upon cops, where the yarn made in one mill must be transported to another part of the country for consumption in hosiery mills. It is, therefore, not probable that there will be a reduction in the number of mules in use, and there may even be an increase; but the economy in the production of yarn by ring spindles, and the fact that the machinery can be operated by labor not so highly skilled as is required for mule spinning, will doubtless cause the tendency to install frame spindles in new spinning and weaving mills to continue. It will be observed that in Rhode Island there has been an actual decrease of ring spindles and an increase of mules. The mills of that state produce a large amount of fine yarn, and many of them are engaged extensively in spinning yarn for knitting mills. The ascendancy of the mule in New Jersey is explained by the fact that the industry in that state is for the most part devoted to the production of fine sewing thread, to which the mule is by far the better adapted.

No radical improvement has been made during the past decade in spinning machinery of either kind, nor do the makers of such machinery anticipate great changes in the future. The mule is already a perfect machine, in the sense that it is automatic in every part and that in none of the various operations which it performs without human guidance does any part act as a drag upon others. Inasmuch as the spindles are now operated at as high a speed as is compatible with the spinning of good yarn, it follows that in order to increase the production sensibly it would be necessary to im-

prove the machine not in one part only but in many parts. With respect to the ring spindle the quantity of yarn it can make of any particular count is directly proportioned to the speed of the spindle itself. Ten thousand turns a minute comes near to being the limit of the ring spindle under present conditions, because at a speed above that the travelers are apt to fly off badly. It is estimated that the average speed of the spindle on No. 28 warp yarn is about 9,000 turns. The production of yarn per spindle varies greatly with the number of yarn spun, and the speed varies in almost like proportion—that is, on coarse yarns a spindle running 7,000 turns a minute is running relatively as fast as when it is going 10,000 turns a minute on fine yarns.

During the ten years 1880–1890 the number of frame spindles sold by all manufacturers and placed in the old and new mills was 6,000,193. The corresponding number for the period 1890–1900 was 8,901,408. The total for the period of twenty years exceeds the whole number of ring spindles in the United States, a fact which suggests that substantially all the spindles of older types have been replaced. There were in 1880 in all the Northern states 10,111,387 spindles. No count was taken of the number of mule and frame spindles; but during the ensuing decade 1,569,589 new ring spindles were placed in old frames, and 3,561,896 spindles in new frames were installed, replacing either mules or old-fashioned ring spindles thrown out. At the close of the decade, at the census of 1890, there were in Northern mills 7,255,369 ring spindles. In the last ten years 3,520,640 spindles in new frames have been placed in mills which were built prior to 1890, in addition to 1,742,120 spindles in old frames. Thus more than one-half of the spindles in use ten years ago in Northern mills have since been replaced. The absolute increase of spindles in the South between 1880 and 1890 was 1,011,952. The number of new spindles installed in that part of the country during the same period was 868,708, which, it will be noticed, was 143,244 less than the total increase. During the early years of the Southern development it was not unusual to equip mills with machinery discarded by Northern mills. But in the last decade the numerical increase of frame spindles in the South has been 2,672,128, and the number of new spindles has been 3,283,884, showing that not only were all, or substantially all, the spindles in the new mills of the most modern type, but that about 600,000 old spindles in old mills were replaced by new. Combining the twenty years we find that there is a present total of 4,117,654 frame spindles in the South, and that 4,152,592 new spindles have been supplied to them in that time. The installation of new spindles, by years, and by a geographical division into North and South, is shown by the following table:

MANUFACTURES.

TABLE 19.—NUMBER OF FRAME SPINDLES SOLD, SUMMARY: JANUARY 1, 1890, TO JANUARY 1, 1900.

YEARS.	Aggregate.	NORTHERN STATES.				SOUTHERN STATES.			
		Total.	New frames.		Old frames.	Total.	New frames.		Old frames.
			To new mills.	To old mills.			To new mills.	To old mills.	
Total	8,901,408	5,617,524	354,764	3,520,640	1,742,120	3,283,884	1,467,024	1,485,469	330,801
1890.....	784,809	602,890	38,600	356,225	208,065	181,919	57,909	108,260	15,760
1891.....	656,306	499,099	14,656	298,288	187,055	156,307	18,697	116,425	21,186
1892.....	869,616	691,510	36,440	415,483	239,587	175,106	60,552	97,282	17,272
1893.....	1,042,203	823,008	54,656	498,435	274,917	219,260	48,080	135,524	35,656
1894.....	552,767	377,423	18,812	241,397	117,214	175,344	78,048	84,040	13,200
1895.....	958,426	669,075	45,120	464,056	159,899	289,351	113,560	145,691	30,100
1896.....	1,513,039	832,027	128,192	512,089	191,746	686,072	309,060	316,976	61,036
1897.....	651,427	278,439	11,424	154,160	112,855	372,988	206,468	121,252	45,208
1898.....	730,312	339,226	4,480	231,063	103,683	391,086	205,491	150,117	35,478
1899.....	1,140,378	503,927	2,384	354,444	147,099	636,451	374,759	210,892	50,800

CONSUMPTION OF COTTON PER SPINDLE.

The length of yarn spun is, in general, directly proportioned to the speed of spindles. The weight of yarn spun upon spindles of equal efficiency is proportioned to the coarseness or fineness of the yarn. Thus it might happen that spindles of an ancient pattern, producing No. 10 yarn, would consume several times as much raw cotton as an equal number of the high-speed modern spindles would convert into No. 50 yarn. Consequently, in studying the table which shows the average consumption of cotton per spindle in the several divisions of the country, it must be borne in mind that the indication is a resultant of two forces acting in opposite directions.

It will be seen that the tendency is, as it was during the preceding decade, to an enlarged average consumption. In the whole country it has gone up from 70.43 pounds in 1880, to 73.79 pounds in 1890, and 95.43 pounds in 1900. The increase is due chiefly to the greatly enlarged extent of the industry in the South. For although the average increase per spindle in that section is but little more than 3 pounds, yet the number of spindles which consume more than twice the average of New England spindles is three times as great as in 1890, and the proportion of the whole is much larger. Although the circumstance of the excessive increase of spinning in the South as compared with the rest of the country masks the actual facts of the case, yet an analysis of the figures by sections gives some useful indications. Thus in New England there has been an increased relative production of fine yarn, and yet the average annual consumption of cotton has increased by 7 pounds, or rather more than 10 per cent. We may, perhaps, infer that the average efficiency of spindles increased somewhere between one-eighth and one-seventh. On the other hand, the average consumption per spindle in the Southern states increased but a little more than 3 pounds a year, or about 2 per cent. But there was a notable increase in the number of yarn spun in those states. For example, in North Carolina from No. 15.30 to No. 18.90, and in South Carolina

from No. 15.13 to No. 19.04. It would require spindles averaging from 20 to 25 per cent greater efficiency to accomplish the conversion of an equal weight of cotton into the finer yarn; and since the actual consumption has also increased, we may fairly conclude that the average efficiency of spindles operated in Southern mills has increased by from 25 to 30 per cent, and that they are on the whole quite up to the average of the whole country. The industry, being stationary, or declining, in the Middle and Western states, except as regards the weaving business in Philadelphia, the facts regarding those divisions of the country call for no special comment. The situation presented is to be found in the following statement:

COTTON CONSUMED PER SPINDLE.

GEOGRAPHIC DIVISIONS.	1900	1890	1880
United States	Pounds. 95.43	Pounds. 73.79	Pounds. 70.43
New England states	72.04	65.95	62.72
Middle states	88.24	78.46	73.58
Southern states	104.65	101.41	155.94
Western states	111.07	147.65	171.55

Table 20, which is a continuation of one in the report on the Eleventh Census, is valuable rather in detail and for purposes of comparison than in any general deduction that may legitimately be drawn from it. This will appear from a consideration of the fact that although the number of spindles to each wage-earner has increased 5.64 in New England and 1.42 in the South—the two sections which combined contain 90 per cent of all the spindles in the country—the number of spindles to each wage-earner in the United States as a whole has decreased 1.02. The explanation is a simple one, namely, the marvelous increase of the industry in the South, where the number of persons employed by a mill of a given size is much greater than in the great factory towns of the North. As employees become more skilled and experienced, a greater average amount of machinery can be put in charge of each individual. This result is already beginning to appear in the labor returns

of the southern mills; but a great proportionate increase in the number of spindles in the South, and of hands employed, showing, even at the improved condition, an average number of spindles to hands barely half that in New England, makes the comparison for the whole country, as between 1890 and 1900, misleading.

TABLE 20.—COTTON GOODS, NUMBER OF SPINDLES TO EACH WAGE-EARNER, AND THE AMOUNT PAID FOR LABOR TO EACH SPINDLE, BY STATES GEOGRAPHICALLY ARRANGED: 1880 TO 1900.

STATES.	Year.	WAGE-EARNERS.		Number of spindles.	Number of spindles to each wage-earner.	Labor cost per spindle.
		Average number.	Total wages.			
United States	1900	297,929	\$86,126,310	19,008,852	63.80	\$4.48
	1890	218,876	66,024,538	14,188,103	64.82	4.05
	1880	172,544	42,040,510	10,653,435	61.74	3.95
New England states	1900	162,294	55,367,541	12,850,987	79.18	4.81
	1890	147,359	47,832,948	10,886,155	73.51	4.41
	1880	125,779	32,170,861	8,632,087	68.63	3.73
Maine	1900	13,723	4,330,297	841,521	61.32	5.15
	1890	13,912	4,213,523	885,762	63.67	4.76
	1880	11,759	2,936,640	695,924	59.18	4.22
New Hampshire	1900	20,454	6,759,422	1,243,555	60.80	5.44
	1890	19,383	6,242,204	1,195,613	61.69	5.22
	1880	16,395	4,290,960	944,053	57.58	4.55
Vermont	1900	1,015	259,753	100,028	98.55	2.60
	1890	724	204,533	71,591	93.88	2.80
	1880	721	161,748	55,081	76.40	2.91
Massachusetts	1900	92,085	32,327,443	7,784,687	84.54	4.15
	1890	75,544	25,118,365	5,821,518	77.10	4.31
	1880	61,246	15,828,571	4,236,084	69.17	3.74
Rhode Island	1900	21,323	7,207,119	1,880,622	86.18	3.88
	1890	24,576	7,814,767	1,924,486	78.81	4.06
	1880	21,174	5,320,308	1,764,569	83.34	3.02
Connecticut	1900	13,194	4,393,502	1,000,574	75.84	4.39
	1890	13,220	4,239,546	934,155	70.66	4.54
	1880	14,484	3,682,639	936,376	64.65	3.83
Middle states	1900	34,843	11,336,710	1,647,251	47.28	6.02
	1890	31,841	10,184,539	1,633,722	51.31	6.23
	1880	28,118	6,613,200	1,391,164	43.43	4.76
New York	1900	8,659	2,532,394	720,263	83.18	3.59
	1890	8,316	2,448,081	606,796	72.97	4.03
	1880	9,227	1,994,755	561,658	60.87	3.55
New Jersey	1900	5,518	1,887,119	431,730	78.24	4.37
	1890	5,632	1,934,659	374,442	68.48	5.30
	1880	4,179	1,156,961	232,221	55.57	4.98
Pennsylvania	1900	15,567	5,002,339	306,637	19.70	13.27
	1890	12,666	4,338,017	439,633	34.71	9.03
	1880	9,379	2,502,688	425,301	43.03	6.83
Delaware	1900	372	138,844	34,552	92.88	4.02
	1890	371	308,346	53,916	55.53	5.72
	1880	791	192,727	46,183	53.30	4.17
Maryland	1900	4,727	1,136,014	154,064	32.59	7.70
	1890	4,256	1,055,536	153,930	37.34	6.64
	1880	4,042	766,120	125,706	31.10	6.99
Southern states	1900	97,494	17,501,648	4,298,183	44.09	4.07
	1890	86,415	7,116,805	1,554,000	42.67	4.53
	1880	16,317	2,750,936	542,048	33.22	5.03
Virginia	1900	2,331	668,556	126,827	43.27	5.27
	1890	1,990	378,933	94,294	47.38	3.97
	1880	1,035	169,739	44,340	40.37	3.33
North Carolina	1900	30,273	5,127,087	1,133,482	37.44	4.52
	1890	3,515	1,475,932	337,789	39.67	4.37
	1880	3,232	439,659	92,366	23.58	4.76
South Carolina	1900	30,201	5,066,340	1,431,349	47.39	3.51
	1890	3,071	1,510,494	332,784	41.23	4.54
	1880	2,013	330,344	82,334	40.30	4.33
Georgia	1900	18,233	3,566,951	315,545	44.61	4.37
	1890	10,314	2,167,036	446,452	43.19	4.36
	1880	6,215	1,135,134	193,656	31.96	5.71
Kentucky	1900	1,351	280,407	66,633	49.32	4.21
	1890	318	170,573	42,342	52.50	3.97
	1880	343	63,350	9,022	25.93	7.03
Tennessee	1900	2,108	422,935	123,396	58.77	3.41
	1890	2,124	444,573	97,521	45.92	4.50
	1880	1,015	161,071	35,736	35.21	4.51
Alabama	1900	8,332	1,432,226	411,323	49.37	3.60
	1890	2,033	402,903	79,234	37.95	5.99
	1880	1,443	239,933	49,432	34.14	4.36

TABLE 20.—COTTON GOODS, NUMBER OF SPINDLES TO EACH WAGE-EARNER, AND THE AMOUNT PAID FOR LABOR TO EACH SPINDLE, BY STATES GEOGRAPHICALLY ARRANGED: 1880 TO 1900—Continued.

STATES.	Year.	WAGE-EARNERS.		Number of spindles.	Number of spindles to each wage-earner.	Labor cost per spindle.
		Average number.	Total wages.			
Mississippi	1900	1,675	\$339,546	75,122	44.85	\$4.52
	1890	1,154	263,997	57,004	49.40	4.68
	1880	695	133,214	18,508	26.72	7.17
Texas	1900	984	253,630	48,756	49.55	5.20
	1890					
	1880					
All other Southern states ²	1900	1,356	293,470	65,800	48.16	4.49
	1890	1,341	307,859	66,980	49.95	4.50
	1880	261	27,377	11,576	44.35	2.37
Western states	1900	3,298	860,411	211,926	64.26	4.06
	1890	3,261	890,141	164,226	50.35	5.42
	1880	2,330	505,403	88,136	37.83	5.73
Ohio	1900	106	27,861			
	1890	554	161,613	16,560	29.89	9.76
	1880	481	104,500	13,323	27.71	7.84
Indiana	1900	1,421	323,949	102,488	72.12	3.16
	1890	1,309	310,342	74,604	56.99	4.16
	1880	708	162,829	33,396	47.17	4.83
Illinois	1900					
	1890	480	123,986	21,800	50.70	5.69
	1880					
Wisconsin	1900	347	80,567	21,496	61.95	3.75
	1890	490	131,170	32,592	66.51	4.02
	1880					
Missouri	1900					
	1890					
	1880	508	97,680	19,312	33.02	5.06
All other Western states ²	1900	1,424	428,034	87,942	61.76	4.87
	1890	478	163,030	13,670	39.06	8.73
	1880	633	140,394	22,100	34.91	6.35

¹ Included in "all other Southern states."

² Includes establishments distributed as follows: Southern states—1900, Arkansas, 2; Louisiana, 2; West Virginia, 1; 1890, Arkansas, 2; Louisiana, 2; Texas, 1; 1880, Florida, 1; Arkansas, 2; Louisiana, 2; Texas, 2. Western states—1900, California, 1; Colorado, 1; Illinois, 1; Missouri, 2; Nebraska, 1; 1890, California, 1; Iowa, 2; Missouri, 1; 1880, Illinois, 2; Michigan, 1; Wisconsin, 1; Minnesota, 1; Utah, 1.

The figures examined in detail are nevertheless instructive and useful. It will be seen that the number of spindles to each wage-earner has increased in three of the four geographical divisions and in most of the states. The decline in the Middle states is to be ascribed chiefly to the fact mentioned elsewhere—that the industry in Pennsylvania is becoming more and more a weaving industry and that the number of spindles has declined. This feature becomes almost startlingly apparent in the last column of the table, where the labor cost per spindle is correctly reported as more than twice that of any other state. Indeed, the character of the industry in Pennsylvania differs so widely from that of any other state that it is not properly included in any table intended to show averages for the whole country.

With reference to the "labor cost per spindle" it is to be said that it shows upon the whole an increase, by states, by geographical divisions, and for the United States. It thus indicates a certain increase of wages, as the column showing the relation of the number of spindles to that of wage-earners indicates an increase of skill. But even here it is necessary to exercise caution in making deductions, for the problem is complicated by the fact that, premising an equal amount of skill on the part of operatives, a coarse-goods mill requires more

machinery and more hands for a given amount of output than a fine-goods mill. The average spinning in the South is coarser than that in New England, and consequently a larger force is needed. Moreover, the matter of the labor cost per spindle is complicated by considerations of the hours of labor in a working day, of the proportion of women and children, as compared with men, employed, and of other matters of less importance than these. The table invites analysis by students of industrial problems, but it would be hazardous to base any conclusions whatever upon it without a careful weighing of special conditions in each state—in some cases the conditions in individual manufacturing cities.

LOOMS.

Inasmuch as the American cotton manufacturing industry is essentially a weaving as well as a spinning industry, it follows naturally that the number of looms employed keeps pace practically with the corresponding number of spindles. Against an increase of 34 per cent in spindles, during the decade, there has been an increase of 38.7 per cent in the number of looms. In both cases, "cotton goods" only in 1900 are compared with all cotton manufactures, including "cotton small wares" in 1890. The total number of looms in 1900

was 450,682, compared with 324,866 in 1890. There was a numerical increase of 48,769 in New England, of 1,060 in the Middle states, of 73,744 in the Southern states, and of 2,243 in the Western states.

An analysis of the looms as classified in the following table brings out no important facts which are not deducible from other statistics here presented, but it is confirmatory of the inferences to be drawn from them. For example, it appears from the statement of looms operated upon fancy weaves, that there was an increase of 22,453 in the number of such looms, and that 12,735 of the increase was in New England mills and 7,673 in

mills of the Middle states; which is in accordance with the fact of a large increase in the fine spinning and weaving of the one section and of a wonderful growth of the weaving of upholstery and similar goods in Philadelphia. On the other hand, of the great numerical increase of 73,744 looms in the Southern states, 66,130 represent plain looms of all widths, compared with an increase of 33,621 plain looms in the New England states. It is an interesting fact that the increase in the number of looms in the whole country operated in the weaving of goods more than 36 inches wide exceeds the increase in the number of looms making goods of less width.

TABLE 21.—COTTON GOODS, NUMBER AND CLASSIFICATION OF LOOMS, BY GEOGRAPHIC DIVISIONS: 1890 AND 1900.

GEOGRAPHIC DIVISIONS.	Year.	NUMBER OF LOOMS.								
		Total.	On plain cloths.				On twills and satcens.	On fancy weaves.	On tapes and other narrow goods. ¹	On bags and other special fabrics.
			Less than 28 inches wide.	28 to 32 inches wide.	32 to 36 inches wide.	36 inches wide and over.				
United States	1900	450,682	35,601	98,965	79,849	126,082	58,889	45,686	1,700	4,421
	1890	324,866	23,648	91,862	55,356	71,591	53,726	23,233	.....	5,450
New England states	1900	298,885	16,765	77,326	37,722	84,916	47,080	31,635	1,586	1,855
	1890	250,116	12,609	72,928	35,063	62,508	46,346	18,900	.....	1,762
Middle states	1900	36,134	6,442	3,023	3,501	8,085	3,403	10,031	123	1,576
	1890	35,074	5,196	10,601	3,628	5,708	4,920	2,358	.....	2,653
Southern states	1900	110,010	12,374	17,930	34,446	32,323	8,356	3,856	.....	725
	1890	36,266	5,303	8,309	13,956	2,875	2,442	1,975	.....	906
Western states	1900	5,653	20	710	3,680	868	.....	164	.....	265
	1890	3,410	40	24	2,709	500	8	.....	.....	129

¹Included with bags and other special fabrics in 1890.

Table 22 presents for 1900 the number and capacity of spinning mills, weaving mills, and mills which do both spinning and weaving, by states geographically arranged.

Table 22 furnishes a basis for future comparisons, as well as showing the situation with respect to the operations carried on in the cotton mills of the United States. It will be seen from this table that, of the total number of establishments, more than half both spin and weave. In the matter of capacity the proportion is vastly greater, as 83.6 per cent of the spindles, and 96 per cent of the looms, are installed in what may be termed complete mills. Even these large proportions would be increased were the mills of the Middle states eliminated.

More than one-third of all the spindles and looms in those states are in mills which spin only, and more than one-third of the looms in mills which weave only. This circumstance is due to the fact that half the product of New Jersey mills is sewing cotton, and that weaving is the principal feature of the industry in Pennsylvania. Excluding the Middle states, the percentage of spindles in spinning and weaving mills is 85 per cent and that of looms is almost 99 per cent. The figures for the Southern states indicate a tendency to erect yarn mills. In North Carolina more than two-fifths of the spindles are the equipment of such mills, and the proportion is large in some of the other Southern states also.

TABLE 22.—COTTON GOODS, NUMBER AND CAPACITY OF SPINNING MILLS, WEAVING MILLS, AND MILLS WHICH DO BOTH SPINNING AND WEAVING, BY STATES GEOGRAPHICALLY ARRANGED: 1900.

STATES.	Number of establishments.	SPINNING AND WEAVING MILLS.			SPINNING MILLS.		WEAVING MILLS.		Number of establishments having no spindles or looms for spinning or weaving.
		Number.	Capacity.		Number.	Capacity.	Number.	Capacity.	
			Number of spindles.	Number of looms.					
United States.....	973	502	15,882,095	432,959	274	8,126,257	168	17,723	29
New England states.....	332	223	11,233,326	295,710	76	1,617,661	17	3,175	16
Maine.....	15	13	837,021	23,229	1	4,500	1	137	
New Hampshire.....	25	20	1,235,907	35,123	3	7,648			
Vermont.....	5	3	31,576	2,099	2	18,462			
Massachusetts.....	168	110	6,712,998	176,554	36	1,071,639	10	2,726	7
Rhode Island.....	71	44	1,469,404	39,366	20	411,218	3	106	4
Connecticut.....	55	33	395,420	19,339	14	104,154	3	206	5
Middle states.....	225	46	1,072,154	23,724	29	575,097	138	12,410	12
New York.....	84	14	626,040	14,110	7	94,228	10	435	3
New Jersey.....	20	3	101,688	1,576	4	330,042	10	650	3
Pennsylvania.....	154	17	168,810	4,791	17	137,827	114	11,024	6
Delaware.....	3	2	21,552	733	1	13,000			
Maryland.....	14	10	154,064	2,509			4	301	
Southern states.....	400	222	3,365,439	108,044	168	931,749	10	1,966	
West Virginia.....	1						1	19	
Virginia.....	7	7	126,827	4,603					
North Carolina.....	177	75	649,442	23,992	94	483,990	8	1,477	
South Carolina.....	80	57	1,304,181	42,193	22	127,168	1	470	
Georgia.....	67	42	652,611	19,393	25	162,934			
Kentucky.....	6	2	37,592	991	4	29,041			
Tennessee.....	17	9	97,558	2,995	8	26,338			
Alabama.....	31	18	325,560	8,549	13	85,768			
Mississippi.....	6	5	73,372	2,464	1	1,250			
Arkansas.....	2	2	9,700	257					
Louisiana.....	2	2	55,600	1,584					
Texas.....	4	3	33,496	1,018	1	15,260			
Western states.....	16	11	210,176	5,481	1	1,750	3	172	1
Ohio.....	3						2	153	1
Indiana.....	4	4	102,488	2,712					
Illinois.....	1	1	31,488	700					
Wisconsin.....	3	2	21,496	577			1	14	
Missouri.....	2	1	11,904	356	1	1,750			
Nebraska.....	1	1	15,488	416					
Colorado.....	1	1	17,312	480					
California.....	1	1	10,000	240					

MERCERIZATION.

During the past ten years the process known as mercerizing has been introduced, or, more strictly, reintroduced, as an adjunct of the cotton manufacturing industry. The process derives its name from its discoverer, John Mercer, an Englishman, who was born in 1791 and died in 1864. Mercer was a man of humble origin, by trade a handloom weaver, and self-taught. Entering a print works as an ordinary workman, he became interested in chemical processes, was made experimental chemist to the works, and in a short time introduced several new styles in calico printing. He was the first to prepare sulphated oil, which revolutionized the turkey-red industry; was the inventor of the blue-print photographic process, and even devised and improved several pharmaceutical preparations. In 1852 he was elected a Fellow of the Royal Society. About the year 1845 or 1846 appeared the first notice of the mercerizing process, and it was patented in 1850. It excited great attention at the first world's fair, in London, in 1851, and great commercial success

was anticipated for it; but for various reasons it did not become successful in Mercer's lifetime, nor, in its original form, at any time.

The process of mercerizing, proper, consists in treating vegetable fiber, chiefly cotton, in the condition of yarn or of woven goods, to the action of caustic soda dissolved in water, and treating it subsequently with pure water and with dilute sulphuric acid for the purpose of washing out or extracting chemically the soda that remains in the yarn or fabric. The process effectuates both a chemical and a physical change in the constitution of the fiber. The wing of the cottonseed is pure cellulose, the chemical symbol of which is $C_{12}H_{20}O_{10}$ —12 atoms of carbon, 20 of hydrogen, and 10 of oxygen. The caustic soda and the water in which it is held in solution unite with the cellulose; but the soda is afterward removed by washing with water and by "souring" with acid, and that which remains is hydrated cellulose—that is, cellulose combined with water. It is probably not strictly accurate to say that the cellulose and water are chemically combined, since the water contained may be removed by drying without restoring the

cellulose to its original condition; but, on the other hand, after the desiccation the mercerized yarn or cloth will reabsorb water from the atmosphere naturally.

The structural change in the fiber is a marked one. The filament of cotton is a flattened tube or band, the sides of which are pressed closely together, leaving a central cavity which is enlarged at each edge of the flattened tube. It is opaque, and the surface is not smooth. The fiber has also a slight natural twist. All these characteristics are modified by the mercerizing process. The tube becomes rounded into cylindrical shape; the cavity is made smaller and the walls of the tube thicker; the surface is made smoother and the opacity is diminished; and the fiber acquires a spiral form. These are not the only physical changes introduced by the process, for there is a perceptible shrinkage in the length of either yarn or cloth treated by Mercer's formula. As will presently be noticed, the modern method overcomes the shrinkage, but as originally introduced the loss in linear dimension varied from 15 to 25 per cent. Moreover, the weight, and consequently the specific gravity, of the yarn or fabric is increased, as is also the strength of the material, this last gain varying from 35 to nearly 70 per cent, according to the conditions under which the mercerizing is done. Another important result of the process is that mercerized cotton has a much greater affinity for certain dyes and mordants than cotton which has not been so treated.

The changes heretofore mentioned were those which Mercer specified in his application for a patent. The chief advantages which he claimed were the greater strength of yarn or cloth and the greater affinity for dyes. These are not the advantages which have caused the reintroduction of the process. Reference has been made to the fact that mercerizing causes a contraction of the fiber and a loss of length. Advantage was taken of the shrinkage to produce crepon effects in cloth, particularly in union cloth, but it was not availed of to any large extent. It has been discovered, however, that if the mercerizing be done under tension—that is, if it be simply held from shrinking, but not stretched, while the material undergoing treatment is immersed in the caustic bath and while the alkali is being removed by water and acid—the fiber becomes more translucent, the surface smoother, and the yarn or woven goods treated acquire a luster similar, and not greatly inferior,

to that of silk. The same result can be produced by stretching the material operated upon to its original length immediately after it has been subjected to the caustic bath, and before it has lost its pliable condition. The acquisition of a glossy appearance by mercerized goods was noticed in the early days of the process, but it is only recently that the increased luster imparted by holding the material from shrinking caused a revival of the manufacture.

The improved process in mercerization while the goods are in a state of tension is the subject of protracted patent litigation which has not yet been brought to a decision. The process itself is a simple one, but must be conducted with great care. As applied to yarn it consists in passing it through the bath between rollers which prevent all contraction, and then through the water bath and a weak solution of sulphuric acid under the same conditions. The rollers serve also the purpose of squeezing out the caustic, the water, and the acid, and so facilitating and rendering complete the removal of all chemicals which might cause a contraction after the tension is relaxed.

The uses to which mercerized material may be put are various. The process has not been applied with success to ordinary upland cotton, but only to Egyptian and sea-island cotton, which are naturally somewhat silky. These are the varieties of cotton which are employed in the production of underwear and the finest of woven goods, which are made much more beautiful by the luster imparted as well as by the brilliancy of the dyeing. It is believed, however, that the fact that mercerized yarn loses something of elasticity in gaining strength, is against its general availability in the manufacture of hosiery and knit goods.

The amount of yarn mercerized in cotton-mills during the census year was 809,468 pounds. In dyeing and finishing establishments 868,851 pounds of yarn and 7,973,506 square yards of cloth were mercerized. The total additional value given to yarn and cloth by mercerizing, in all establishments, was \$879,490.

Table 23 presents a comparative summary of the entire industry, cotton goods and cotton small wares, by states and territories, geographically arranged for the several censuses from 1840 to 1900, inclusive; and Table 24 presents the detailed statistics of cotton goods for 1900.

MANUFACTURES.

TABLE 23.—COMPARATIVE SUMMARY, COTTON GOODS AND COTTON SMALL WARES,

	Year.	Number of establishments.	Capital.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.				
				Number.	Salaries.	Total.		Men, 16 years and over.	Women, 16 years and over.	Children, under 16 years.
						Average number.	Wages.			
1 United States.....	1900	1,055	\$467,240,157	4,902	\$7,350,199	302,861	\$86,689,752	135,721	126,882	40,258
	1890	905	354,020,843	12,709	13,464,734	218,876	66,024,538	88,837	106,607	23,432
	1880	756	208,280,346	(2)	(2)	174,659	42,040,510	61,760	84,558	28,341
	1870	959	140,706,291	(2)	(2)	135,369	39,044,132	42,790	69,637	22,942
	1860	1,091	98,585,269	(2)	(2)	122,028	23,940,108	46,959	75,169	(2)
	1850	1,094	74,500,931	(2)	(2)	92,286	(2)	33,150	59,186	(2)
1840	1,240	51,102,359	(2)	(2)	72,119	(4)	72,119	(2)	(2)	
2 New England states.....	1900	364	276,089,821	2,061	3,806,248	164,944	56,258,205	79,014	74,882	11,048
	1890	402	243,153,240	1,359	2,075,648	147,350	47,832,943	63,749	73,445	10,165
	1880	439	156,754,690			127,185	32,170,861	46,807	62,568	17,720
	1870	508	100,103,770			94,775	23,740,788	30,203	50,805	13,767
	1860	570	69,260,279			81,403	16,720,920	29,386	51,517	
	1850	564	58,832,430			61,893		20,745	41,148	
1840	674	34,931,399			40,834					
3 Maine.....	1900	15	21,087,190	100	231,815	13,723	4,330,297	6,197	6,760	766
	1890	23	20,850,754	80	158,950	13,912	4,213,523	5,193	7,856	863
	1880	24	15,202,078			11,864	2,936,040	9,962	6,481	1,421
	1870	23	9,339,685			9,439	2,565,197	2,606	6,246	587
	1860	19	6,018,325			6,764	1,303,838	1,828	4,936	
	1850	12	3,329,700			3,739		780	2,959	
1840	6	1,398,000			1,414					
4 New Hampshire.....	1900	23	29,261,835	175	370,777	20,454	6,759,422	9,229	10,362	863
	1890	27	26,301,933	150	186,880	19,383	6,242,204	8,144	10,845	894
	1880	36	19,877,084			16,529	4,200,060	6,235	9,696	1,909
	1870	36	13,322,710			12,542	3,989,853	3,752	7,490	1,300
	1860	44	12,538,380			12,730	2,883,804	3,325	8,301	
	1850	44	10,950,500			12,122		2,911	9,211	
1840	58	5,523,200			6,991					
5 Vermont.....	1900	5	1,932,983	20	26,579	1,015	259,758	438	495	82
	1890	6	1,431,986	13	16,204	724	204,588	325	309	90
	1880	7	936,096			735	161,748	214	350	171
	1870	8	670,000			451	125,000	125	242	84
	1860	8	271,200			379	78,468	157	222	
	1850	9	202,500			241		94	147	
1840	7	118,100			262					
6 Massachusetts.....	1900	177	156,289,451	1,104	2,046,052	92,515	32,478,697	45,245	41,298	5,972
	1890	137	128,838,837	669	1,112,302	75,544	25,113,365	33,101	33,352	4,091
	1880	176	72,291,601			61,844	15,828,571	22,774	31,497	7,573
	1870	191	44,714,375			43,512	13,589,305	18,694	24,065	5,763
	1860	217	33,704,674			38,451	7,798,476	13,091	24,760	
	1850	213	28,455,630			28,790		9,293	19,487	
1840	278	17,414,099			20,928					
7 Rhode Island.....	1900	87	40,150,824	380	734,465	24,032	8,033,007	10,980	10,619	2,433
	1890	94	38,798,161	256	316,375	24,576	7,814,767	10,507	10,887	3,132
	1880	115	28,047,331			21,474	5,320,393	8,344	9,199	3,331
	1870	139	18,836,300			16,745	5,224,050	5,538	8,028	3,134
	1860	153	10,652,200			14,077	2,847,804	6,353	7,724	
	1850	158	6,675,000			10,375		4,959	5,916	
1840	209	7,326,000			12,086					
8 Connecticut.....	1900	57	27,367,538	282	396,560	13,205	4,897,024	6,925	5,848	932
	1890	65	26,431,578	191	284,937	13,220	4,239,546	6,479	5,696	1,045
	1880	82	20,310,500			14,739	3,032,039	6,368	5,445	2,926
	1870	111	12,710,700			12,086	3,246,733	4,443	4,734	2,909
	1860	129	6,627,000			9,002	1,743,480	4,028	4,974	
	1850	128	4,219,100			6,136		2,708	3,478	
1840	116	3,152,000			5,158					
9 Middle states.....	1900	272	61,935,519	1,015	1,423,138	37,050	12,058,932	15,012	17,584	4,454
	1890	239	51,676,249	503	579,284	31,841	10,184,589	11,580	10,240	4,021
	1880	139	31,014,759			28,367	6,613,260	9,161	13,188	6,018
	1870	274	27,723,306			28,974	7,994,470	8,466	14,126	6,382
	1860	340	18,789,089			29,078	5,464,772	12,212	10,866	
	1850	352	12,970,445			19,699		8,274	11,425	
1840	298	11,533,832			18,187					
10 New York.....	1900	52	15,060,149	193	263,150	9,259	2,745,848	4,240	4,208	811
	1890	42	13,290,745	85	115,699	8,316	2,448,031	3,246	4,034	1,036
	1880	36	11,399,638			9,305	1,994,765	3,012	4,201	2,092
	1870	81	8,511,336			9,144	2,626,131	2,608	4,546	1,900
	1860	79	5,383,479			7,659	1,405,232	3,107	4,562	
	1850	86	4,176,920			6,920		2,632	3,688	
1840	117	4,900,772			7,407					
11 New Jersey.....	1900	25	14,399,291	157	269,278	5,681	1,930,940	2,144	2,869	608
	1890	17	13,519,972	51	69,623	5,682	1,984,659	1,828	3,391	413
	1880	17	8,807,750			4,222	1,156,951	1,223	2,291	708
	1870	27	7,622,000			3,514	1,009,351	1,086	1,745	685
	1860	44	1,320,550			2,534	468,336	1,010	1,524	
	1850	21	1,483,500			1,712		615	1,096	
1840	43	1,722,810			2,408					
12 Pennsylvania.....	1900	178	24,331,965	565	741,923	17,011	6,057,286	7,074	8,120	1,817
	1890	158	15,884,936	294	299,071	12,666	4,333,017	4,991	6,253	1,417
	1880	59	10,381,985			9,957	2,502,638	3,413	4,457	2,087
	1870	138	12,550,720			12,730	3,496,986	3,859	6,097	2,774
	1860	185	9,203,040			14,994	2,768,340	6,412	8,582	
	1850	208	4,523,925			7,663		3,564	4,099	
1840	106	3,325,400			5,522					

¹ Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this table. (See Table 24.)
² Not reported separately.
³ Includes 2,115 officers and clerks for whom no salaries are reported.

COTTON MANUFACTURES.

BY STATES AND TERRITORIES GEOGRAPHICALLY ARRANGED: 1840 TO 1900.

MACHINERY.		Miscellaneous expenses.	MATERIALS USED.				All other materials.	Value of products.
			Total cost.	Cotton.				
				Bales.	Pounds.	Cost.		
Spindles.	Looms.							
19,050,952	455,752	\$22,112,678	\$176,551,527	3,646,708	1,817,648,890	\$125,169,616	\$51,381,911	\$389,200,820
14,188,108	324,866	18,716,524	154,912,979	2,261,600	1,117,945,776	117,892,576	37,520,403	267,981,724
10,688,485	225,759	(4)	102,206,347	1,570,844	760,848,981	86,945,725	15,200,622	192,090,110
7,182,415	157,810	(4)	111,786,986	(4)	398,808,257	(2)	(2)	177,489,739
5,235,727	126,818	(4)	57,285,594	(4)	422,704,975	(2)	(2)	115,081,774
(4)	(4)	(4)	34,885,056	641,240	(4)	(2)	(2)	61,869,184
2,284,631	(4)	(4)	(4)	(4)	(4)	(4)	(4)	46,350,463
12,891,787	302,018	18,286,637	98,147,668	1,329,678	940,908,114	66,039,133	27,108,535	191,690,913
10,836,155	250,116	12,086,480	101,101,446	1,425,958	714,691,714	76,749,180	24,852,316	181,112,453
8,632,087	184,701		74,290,026	1,129,498	541,878,880	68,169,484	11,120,592	143,363,030
5,498,308	114,982		78,816,481		275,625,278			124,950,053
3,858,962	98,844		87,670,782		288,701,806			79,359,900
			23,800,904	430,603				42,040,178
1,597,894								81,611,880
841,521	23,366	1,440,425	7,036,287	157,428	79,765,578	5,463,293	1,572,904	14,631,086
885,762	21,825	1,185,836	8,446,736	132,504	65,717,252	7,053,168	1,393,568	16,316,909
695,924	15,971		7,320,152	112,381	54,185,061	6,234,901	1,085,251	13,319,363
459,772	9,902		6,746,780		25,887,771			11,844,181
281,056	6,877		3,319,335		23,788,165			6,235,023
			1,573,110	81,531				2,596,356
29,786								970,397
1,243,555	35,123	1,502,420	11,960,102	271,629	136,988,647	9,413,526	2,546,576	22,998,249
1,195,648	31,850	1,840,222	12,962,939	214,034	107,819,124	11,203,742	1,759,197	21,958,002
944,053	24,299		10,146,904	157,673	76,886,499	8,629,033	1,517,841	17,953,403
749,843	19,091		12,318,867		41,469,719			16,999,672
636,788	17,336		7,128,196		51,002,324			13,699,994
			4,839,429	88,026				8,890,619
195,178								4,142,304
100,028	2,099	48,282	526,235	13,048	6,828,408	432,455	93,780	999,880
71,591	1,175	59,893	542,065	8,954	4,647,889	498,348	43,717	914,685
55,081	1,180		508,297	7,404	3,562,088	458,607	49,690	855,864
28,768	628		292,269		1,285,652			546,510
17,600	362		181,080		1,447,250			857,450
			114,415	2,243				194,100
7,254								118,000
7,784,687	179,582	7,275,111	54,889,045	1,085,236	560,934,204	38,916,998	15,472,047	111,125,175
5,824,618	133,227	6,675,285	56,586,283	772,520	386,767,326	40,870,307	15,715,976	100,202,882
4,236,084	95,321		35,994,109	674,857	273,718,889	31,107,154	4,886,955	72,265,518
2,619,541	55,343		37,371,599		180,664,040			59,493,153
1,673,498	42,779		17,214,592		134,012,750			38,004,255
			11,289,309	223,607				19,712,461
666,095								16,563,423
1,920,522	42,298	1,736,590	11,697,461	193,226	99,475,478	7,386,339	4,311,122	26,435,675
1,924,486	43,106	1,871,057	14,847,672	193,291	97,982,155	11,147,080	3,200,592	27,310,499
1,704,569	29,669		12,291,487	167,480	81,137,172	10,457,770	1,833,667	22,876,111
1,043,242	18,075		13,268,315		44,630,787			22,049,208
814,554	17,815		5,799,223		41,014,797			12,151,191
			3,484,579	50,713				6,447,120
518,817								7,116,792
1,001,474	19,550	1,288,809	7,588,538	109,111	56,865,809	4,426,522	3,112,016	15,500,842
984,155	18,933	954,637	8,215,751	104,655	52,257,968	5,976,485	2,239,266	15,409,476
936,376	18,261		8,029,127	109,703	52,384,171	6,281,939	1,747,188	16,069,771
597,142	11,948		8,818,651		31,747,309			14,026,334
485,466	8,675		4,028,406		31,891,011			8,911,887
			2,500,062	39,433				4,257,522
181,319								2,715,964
1,647,251	38,060	3,832,339	25,280,096	292,238	145,353,968	10,596,020	14,634,067	48,961,806
1,633,722	35,074	2,088,631	23,044,093	261,154	128,184,288	13,906,748	9,137,345	40,664,476
1,391,164	27,318		16,191,758	228,720	109,321,428	13,253,526	2,933,232	29,380,286
1,246,045	34,974		23,793,595		80,937,966			88,597,765
1,042,480	25,185		13,928,671		87,118,715			26,534,700
			7,349,795	125,392				12,782,718
487,571								12,222,200
720,268	14,737	948,848	5,718,295	102,590	52,243,040	3,743,267	1,975,028	10,788,003
606,796	13,466	724,405	5,564,251	78,324	39,522,057	4,270,665	1,293,586	9,777,295
561,658	12,403		4,652,745	64,614	31,666,594	3,981,106	671,639	8,266,836
492,678	17,218		6,990,626		24,783,351			11,178,211
848,584	7,885		3,061,105		23,945,027			6,676,878
			1,985,973	37,778				3,501,989
211,659								3,640,237
481,730	2,276	428,384	3,157,768	29,644	15,287,868	1,411,743	1,746,025	6,930,766
374,442	3,673	194,474	3,023,933	25,723	12,301,151	1,816,463	1,212,465	5,902,615
232,221	3,180		2,018,175	21,069	9,950,609	1,319,422	638,753	4,548,275
200,580	2,176		1,964,763		7,920,035			4,015,768
123,543	1,567		1,185,435		9,094,649			2,217,728
			666,645	14,437				1,109,524
63,744								2,086,104
806,637	17,499	2,057,143	13,176,718	76,425	86,549,533	2,690,532	10,486,136	25,447,697
439,638	13,974	730,125	10,485,247	92,705	44,629,588	4,371,693	6,113,554	18,431,773
425,391	8,488		6,105,700	83,997	40,311,309	4,749,423	1,356,272	11,021,054
434,246	12,862		10,724,052		32,963,318			17,490,080
476,979	12,994		7,386,213		37,496,203			13,650,114
			3,152,530	44,162				5,322,232
146,494								6,013,007

⁴Not reported.

⁵This item was not fully reported at the census of 1850.

⁶Includes 1 establishment in the District of Columbia which is not shown separately.

MANUFACTURES.

TABLE 23.—COMPARATIVE SUMMARY, COTTON GOODS AND COTTON SMALL WARES,

	Year.	Number of establishments.	Capital.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.				
				Number.	Salaries.	Total.		Men, 16 years and over.	Women, 16 years and over.	Children, under 16 years.
						Average number.	Wages.			
13 Middle states—Continued. Delaware.....	1900	3	\$484,858	11	\$15,449	372	\$138,844	108	222	42
	1890	7	1,683,803	16	15,982	971	308,346	266	488	217
	1880	8	874,570	.....	.....	797	192,727	243	362	192
	1870	6	1,105,000	.....	.....	726	190,069	225	286	215
	1860	11	522,500	.....	.....	1,109	220,224	520	589	.....
	1850	12	460,100	.....	.....	838	.....	413	425	.....
1840	11	330,500	.....	.....	566	.....	.....	.....	.....
14 Maryland ³	1900	14	7,709,256	84	133,338	4,727	1,186,014	1,446	2,165	1,116
	1890	15	7,296,793	57	78,909	4,256	1,053,536	1,249	2,069	983
	1880	19	4,600,816	.....	.....	4,086	766,129	1,270	1,877	939
	1870	22	2,734,250	.....	.....	2,800	671,933	688	1,452	720
	1860	21	2,299,500	.....	.....	2,782	602,580	1,163	1,619	.....
	1850	25	2,321,000	.....	.....	3,166	.....	1,049	2,117	.....
1840	21	1,304,400	.....	.....	2,284	.....	.....	.....	.....
15 Southern states.....	1900	401	124,596,874	1,760	2,013,362	97,559	17,509,189	40,555	32,545	24,459
	1890	239	53,827,303	753	700,204	36,415	7,116,866	12,517	15,038	8,815
	1880	161	17,375,897	.....	.....	16,741	2,750,986	5,056	7,587	4,008
	1870	151	11,088,315	.....	.....	10,173	1,929,779	3,640	4,190	2,348
	1860	105	9,840,221	.....	.....	10,192	1,481,704	4,113	6,039	.....
	1850	166	7,250,056	.....	.....	10,043	.....	3,886	6,157	.....
1840	248	4,331,078	.....	.....	6,642	.....	.....	.....	.....
16 Virginia.....	1900	7	4,403,206	32	50,387	2,981	668,556	1,280	1,000	651
	1890	9	2,966,889	29	32,831	1,990	373,993	563	951	476
	1880	8	1,130,100	.....	.....	1,112	169,789	301	530	281
	1870	11	1,128,000	.....	.....	1,741	229,750	921	507	313
	1860	16	1,367,543	.....	.....	1,441	260,856	694	747	.....
	1850	27	1,908,900	.....	.....	2,963	.....	1,275	1,688	.....
1840	22	1,299,020	.....	.....	1,816	.....	.....	.....	.....
17 North Carolina.....	1900	177	33,011,516	659	586,780	80,273	5,127,087	12,780	10,364	7,129
	1890	91	10,775,134	227	170,204	8,515	1,475,932	2,788	3,656	2,071
	1880	49	2,855,800	.....	.....	3,343	439,659	875	1,727	741
	1870	33	1,030,900	.....	.....	1,453	182,951	258	916	279
	1860	39	1,272,750	.....	.....	1,755	189,744	440	1,315	.....
	1850	28	1,058,800	.....	.....	1,619	.....	442	1,177	.....
1840	26	995,300	.....	.....	1,219	.....	.....	.....	.....
18 South Carolina.....	1900	80	39,258,946	415	537,193	30,201	5,066,840	13,418	8,673	8,110
	1890	34	11,141,833	121	136,080	8,071	1,510,494	2,849	3,070	2,152
	1880	14	2,776,100	.....	.....	2,053	380,844	696	772	585
	1870	12	1,337,000	.....	.....	1,123	257,680	289	508	326
	1860	17	801,825	.....	.....	891	123,300	342	549	.....
	1850	18	857,200	.....	.....	1,019	.....	399	620	.....
1840	15	617,450	.....	.....	570	.....	.....	.....	.....
19 Georgia.....	1900	68	24,222,169	388	485,201	18,348	3,574,492	7,836	6,512	4,500
	1890	53	17,664,675	210	199,049	10,314	2,167,036	3,849	4,005	2,460
	1880	40	6,348,657	.....	.....	6,849	1,185,184	1,987	2,951	1,411
	1870	34	3,433,205	.....	.....	2,846	611,868	1,147	1,080	619
	1860	33	2,126,103	.....	.....	2,813	415,332	1,131	1,682	.....
	1850	35	1,736,156	.....	.....	2,272	.....	873	1,399	.....
1840	19	573,835	.....	.....	779	.....	.....	.....	.....
20 Kentucky.....	1900	6	1,867,005	24	33,761	1,351	280,407	430	591	330
	1890	5	1,376,132	16	18,466	818	170,573	268	372	173
	1880	3	300,000	.....	.....	352	63,850	128	91	133
	1870	5	405,000	.....	.....	269	57,951	77	71	121
	1860	6	244,000	.....	.....	246	41,280	130	116	.....
	1850	8	239,000	.....	.....	402	.....	181	221	.....
1840	58	316,113	.....	.....	523	.....	.....	.....	.....
21 Tennessee.....	1900	17	3,767,726	47	54,364	2,106	422,985	807	918	383
	1890	20	2,928,657	30	50,865	2,124	444,573	670	997	457
	1880	16	1,145,600	.....	.....	1,044	161,071	311	502	281
	1870	28	970,650	.....	.....	890	178,156	252	468	175
	1860	30	965,000	.....	.....	899	139,180	323	576	.....
	1850	33	669,600	.....	.....	891	.....	310	581	.....
1840	38	403,240	.....	.....	1,542	.....	.....	.....	.....
22 Alabama.....	1900	31	11,688,757	159	197,700	8,332	1,482,226	3,152	2,743	2,437
	1890	13	2,858,015	49	44,265	2,088	402,908	735	852	501
	1880	16	1,246,500	.....	.....	1,490	239,998	426	631	433
	1870	13	931,000	.....	.....	1,032	216,679	303	445	284
	1860	14	1,316,000	.....	.....	1,312	198,408	543	799	.....
	1850	12	651,900	.....	.....	715	.....	346	369	.....
1840	14	35,575	.....	.....	82	.....	.....	.....	.....
23 Mississippi.....	1900	6	2,209,749	46	60,212	1,675	339,546	526	683	466
	1890	9	2,053,743	30	26,984	1,154	263,997	450	398	306
	1880	8	1,122,140	.....	.....	722	139,214	203	313	206
	1870	5	751,500	.....	.....	265	61,333	78	88	99
	1860	4	230,000	.....	.....	215	36,264	106	109	.....
	1850	2	38,000	.....	.....	36	.....	19	17	.....
1840	53	6,420	.....	.....	81	.....	.....	.....	.....
24 Arkansas.....	1900 ⁴	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1890 ⁴	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1880	2	75,000	.....	.....	64	7,339	20	17	27
	1870	2	13,000	.....	.....	17	4,100	8	8	6
	1860	2	37,000	.....	.....	25	4,428	14	11	.....
	1850	3	16,500	.....	.....	31	.....	13	13	.....
1840	2	2,125	.....	.....	7	.....	.....	.....	.....

¹Not reported separately.

²Not reported.

COTTON MANUFACTURES.

BY STATES AND TERRITORIES GEOGRAPHICALLY ARRANGED: 1840 TO 1900—Continued.

MACHINERY.		Miscellaneous expenses.	MATERIALS USED.				All other materials.	Value of products.
			Total cost.	Cotton.				
				Bales.	Pounds.	Cost.		
Spindles.	Looms.							
84,552	788	\$6,445	\$187,919	2,675	1,371,563	\$106,358	81,561	\$372,089
53,916	996	85,149	587,646	3,876	4,465,825	475,490	112,156	1,095,001
46,188	822		527,205	7,512	3,286,184	427,855	99,350	871,007
29,534	771		704,733		2,587,615			1,000,898
38,974	986		570,102		3,403,000			941,703
			312,065	4,730				583,439
24,492								382,272
154,064	2,810	397,016	3,039,396	30,954	39,901,955	2,644,129	395,267	5,423,251
158,990	2,965	354,478	3,378,016	55,026	27,265,667	2,972,482	405,584	6,457,792
125,706	2,425		2,887,983	51,537	24,109,232	2,780,715	107,218	4,682,114
89,112	1,947		3,409,426		12,693,647			4,852,808
54,395	1,753		1,745,816		13,174,236			5,048,277
			1,232,579	24,285				2,220,504
41,182								1,150,580
4,299,988	110,015	4,788,360	56,195,213	1,479,006	707,842,111	47,071,449	9,123,764	95,002,059
1,554,000	36,266	2,257,660	27,764,055	525,856	250,837,646	24,508,776	3,255,279	41,513,711
542,048	11,898		9,999,145	182,949	84,528,757	8,890,408	1,108,737	3,255,279
327,871	6,256		7,419,010		34,351,195			10,356,588
298,551	6,789		4,954,126		45,786,510			11,372,186
			3,332,631	73,140				8,400,537
180,927								6,404,488
126,827	4,608	135,173	1,412,332	38,118	17,832,465	1,154,215	258,117	2,241,695
94,294	2,517	102,565	1,199,578	22,731	10,616,206	1,080,778	118,805	2,655,002
44,340	1,322		640,391	11,461	5,087,519	601,790	38,595	1,732,648
77,116	1,310		937,820		4,255,383			1,040,962
49,440	2,160		811,187		7,544,297			1,435,800
			828,375	17,785				1,489,971
42,262								1,486,384
								446,063
1,133,432	25,469	1,030,918	17,386,624	404,535	190,133,759	13,627,720	3,758,904	28,372,768
337,736	7,254	423,324	6,239,902	114,371	58,546,289	5,396,074	842,323	9,503,445
92,385	1,790		1,463,645	27,642	11,332,641	1,125,984	337,661	2,554,432
39,897	618		963,809		4,238,276			1,345,052
41,884	761		622,363		5,540,738			1,046,047
			531,903	13,617				831,342
47,934								438,900
1,431,349	42,663	1,507,524	17,263,882	485,234	230,053,307	14,929,546	2,334,336	20,723,919
332,734	8,546	523,208	6,319,320	133,342	64,000,600	6,242,698	370,722	9,800,798
82,334	1,676		1,808,300	33,624	15,601,005	1,723,137	85,113	2,393,769
34,940	745		761,469		4,756,823			1,529,937
30,890	525		431,525		3,978,061			713,050
			295,971	9,929				748,338
16,355								359,000
817,345	19,398	1,050,088	11,169,700	304,431	145,833,115	9,702,798	1,466,902	18,544,910
445,452	10,459	724,822	7,832,230	145,859	69,139,410	6,663,560	1,168,070	12,035,629
198,656	4,493		4,019,673	71,889	33,757,199	3,591,554	423,119	6,431,334
35,602	1,837		2,504,758		10,921,173			3,643,373
35,186	2,041		1,466,375		13,907,904			2,371,207
			900,419	20,230				2,135,044
42,539								304,342
66,633	991	105,796	972,244	23,932	11,971,815	770,363	201,631	1,063,712
42,942	677	60,200	643,949	11,930	5,751,305	554,206	89,743	1,000,668
9,022	73		253,818	4,050	1,332,234	138,856	64,932	413,286
7,734	72		375,048		1,584,625			408,960
8,192	76		214,755		1,326,000			315,270
			180,907	3,760				273,439
12,358								323,330
123,896	2,995	142,378	1,143,234	30,273	15,040,336	984,309	153,925	1,994,935
97,524	2,043	173,353	1,765,162	33,114	15,779,369	1,554,851	210,311	2,507,719
35,736	818		553,761	10,436	4,944,279	503,305	45,456	374,717
27,923	313		595,789		2,372,582			941,542
29,350	243		384,543		4,072,710			693,122
			297,500	6,411				510,624
16,313								325,710
411,328	8,549	511,296	4,825,961	134,371	67,987,299	4,206,721	619,260	8,153,136
79,234	1,692	154,393	1,459,043	29,962	14,726,454	1,372,053	86,990	2,190,771
49,432	863		783,711	14,702	7,271,791	729,202	54,609	1,223,019
23,046	632		764,965		3,249,623			1,038,767
35,740	623		617,633		5,246,300			1,040,147
			237,081	5,208				332,260
1,502								17,547
75,122	2,464	117,117	767,927	20,962	10,363,458	623,676	143,751	1,472,335
37,004	1,352	57,622	871,970	17,366	8,449,334	793,600	73,870	1,333,398
18,568	644		337,149	6,411	2,331,353	301,226	35,923	679,093
3,526	152		123,568		580,764			234,445
6,344	90		79,300		693,800			176,323
			21,500	430				30,500
318								1,744
2,015	23		33,305	630	340,000	25,000	8,305	50,000
1,125			13,730		66,400			22,562
			11,600		137,500			23,000
90			8,975	170				16,637

*Maryland and the District of Columbia are combined in this table as Middle states for purposes of comparison.

*Included in "All other Southern states."

MANUFACTURES.

TABLE 23.—COMPARATIVE SUMMARY, COTTON GOODS AND COTTON SMALL WARES,

	Year.	Number of establishments.	Capital.	SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.				
				Number.	Salaries.	Total.		Men, 16 years and over.	Women, 16 years and over.	Children under 16 years.
						Average number.	Wages.			
25 Southern states—Continued. Louisiana	1900 ¹									
	1890 ¹	2	\$195,000			108	\$12,572	43	41	24
	1870	4	692,000			246	60,600	123	57	66
	1860	2	1,000,000			360	49,440	220	140	
	1850 ²									
1840	2	22,000			23					
26 Texas.....	1900	4	2,227,184	21	\$81,388	984	253,630	497	302	185
	1890 ¹	2	50,000			71	2,466	45	10	16
	1870	4	496,000			291	63,211	184	52	55
	1860	1	450,000			130	15,600	130		
	1850 ⁴									
1840 ⁴										
27 All other Southern states.....	1900 ⁵	5	1,990,016	19	26,426	1,856	293,470	329	759	268
	1890	5	2,067,225	15	21,400	1,841	307,359	345	782	214
	1880	1	11,000			33	5,000	21	2	10
	1870 ⁴									
	1860	1	30,000			65	7,872	40	25	
1850	(⁶)	80,000			95		28	67		
1840 ⁴										
28 Western states.....	1900	18	4,567,943	66	107,451	3,308	863,426	1,140	1,871	297
	1890	25	5,364,042	94	109,598	3,261	890,141	991	1,839	481
	1880	17	3,135,000			2,366	505,403	646	1,215	505
	1870	23	1,790,900			1,447	379,095	481	516	450
	1860	16	695,700			1,395	272,712	648	747	
1850	12	442,000			651		245	406		
1840	20	256,000			456					
29 Ohio.....	1900	4	172,661	13	11,666	109	29,076	27	32	
	1890	7	1,213,217	30	32,144	554	161,613	235	312	7
	1880	4	670,000			484	104,500	126	321	87
	1870	7	555,700			482	113,520	216	147	99
	1860	8	265,000			840	151,164	372	463	
1850	8	297,000			401		132	269		
1840	8	113,500			246					
30 Indiana.....	1900	5	1,679,741	19	34,964	1,423	325,749	377	1,001	50
	1890	6	1,744,720	16	22,334	1,309	310,342	325	749	235
	1880	4	1,090,000			720	162,329	205	891	124
	1870	4	551,500			504	113,200	119	179	206
	1860	2	251,000			367	84,888	177	190	
1850	2	43,000			95		88	57		
1840	12	142,500			210					
31 Wisconsin.....	1900	3	467,808	5	5,220	347	80,567	131	191	25
	1890	4	892,509	11	11,300	490	131,170	198	239	53
	1880	1	200,000			271	67,209	66	149	56
	1870 ⁴									
	1860 ⁴									
1850 ⁴										
1840										
32 Illinois.....	1900 ⁸	4	766,405	24	26,400	430	123,986	112	280	38
	1890	2	240,000			237	47,885	66	39	82
	1870	5	151,000			98	25,600	26	31	41
	1860	3	4,700			11	2,640	10	1	
	1850 ⁴									
1840 ⁴										
33 Missouri.....	1900 ⁸									
	1890 ⁸									
	1880	3	890,000			515	97,680	127	207	181
	1870	3	489,200			361	120,300	107	154	100
	1860	2	169,000			170	30,000	85	85	
1850	2	102,000			155		75	80		
1840 ⁴										
34 Utah.....	1900 ⁴									
	1890 ⁴									
	1880	1	20,000			29	2,100	16	8	5
	1870	3	42,000			16	6,300	10	2	4
	1860	1	6,000			7	3,420	4	3	
1850 ⁴										
1840 ⁴										
35 All other Western states ⁹	1900	6	2,247,733	29	55,601	1,424	423,034	605	597	222
	1890	4	747,191	13	17,420	473	163,030	121	259	93
	1880	2	25,000			110	23,200	40	50	20
	1870	1	1,500			6	275	3	3	
	1860 ⁴									

¹Included in "all other Southern states."²Not reported separately.³Not reported.⁴No establishments reported.⁵Includes states grouped in order that the operations of individual establishments may not be disclosed. These establishments are distributed as follows: 1900, Arkansas, 2; Louisiana, 2; West Virginia, 1. 1890, Arkansas, 2; Louisiana, 2; Texas, 1. 1880, Florida, 1. 1860, Florida, 1. 1850, Florida, number of establishments not reported.

COTTON MANUFACTURES.

BY STATES AND TERRITORIES GEOGRAPHICALLY ARRANGED: 1840 TO 1900—Continued.

MACHINERY.		Miscellaneous expenses.	MATERIAL USED.				All other materials.	Value of products.
			Total cost.	Cotton.				
				Bales.	Pounds.	Cost.		
Spindles.	Looms.							
6,096	120		\$72,470	1,358	644,000	\$68,018	4,452	86,776
13,084	292		161,485		748,525		(2)	251,550
6,725	150		226,600		1,995,700		(2)	466,500
706							(2)	18,900
48,756	1,018	\$113,156	641,341	18,045	9,304,434	566,517	74,824	1,199,990
2,648	71		14,827	246	119,986	11,280	3,547	21,600
8,878	235		216,519		1,077,118		(2)	374,598
2,700	100		64,140		588,000		(2)	80,695
							(2)	
65,300	1,860	74,614	612,548	19,055	9,316,628	505,684	106,864	1,220,822
66,980	1,726	32,178	932,896	18,131	8,828,188	850,156	82,740	1,348,687
816			18,095	350	166,250	16,000	2,095	25,000
1,600	20		23,600		200,000		(2)	40,000
			30,000	600			(2)	49,920
							(2)	
211,926	5,659	204,342	1,923,550	45,786	23,539,197	1,463,005	465,545	3,545,542
164,226	3,410	288,803	3,003,385	47,632	24,232,128	2,227,922	775,463	4,601,094
88,136	1,842		1,725,418	29,768	15,119,916	1,627,357	126,538	2,981,196
60,191	1,098		1,707,850		7,398,818		(2)	2,560,735
35,734	995		731,955		6,103,444		(2)	1,326,837
18,739			351,726	7,105			(2)	581,800
							(3)	274,778
	164	18,214	144,043				144,043	236,885
16,500	40	106,399	903,446	11,023	5,840,078	333,556	519,890	1,468,204
13,328	42		286,692	5,323	2,506,132	258,198	28,494	687,000
23,240	208		493,704		2,226,400		(2)	681,835
19,664	540		374,100		3,192,500		(2)	728,500
13,754			287,060	4,270			(2)	394,700
							(3)	139,378
102,488	2,712	72,888	702,497	19,884	10,233,614	608,822	93,675	1,341,597
74,604	1,649	73,941	919,566	16,306	8,240,484	798,178	121,388	1,350,425
33,396	776		7651,434	11,558	6,364,887	7679,911	(1)	1,165,029
17,360	448		542,875		2,070,318		(2)	778,047
11,000	375		229,925		1,818,944		(2)	344,350
4,985			28,220	675			(2)	44,200
							(3)	135,400
21,496	591	18,992	172,267	4,565	2,316,727	145,773	26,494	316,061
32,592	870	52,477	382,833	6,924	3,470,388	359,117	23,716	620,196
10,000	400		194,556	3,173	1,541,797	150,072	14,484	328,839
							(2)	
							(2)	
							(2)	
							(3)	
21,800	465	18,986	337,773	6,405	3,267,188	312,621	25,152	568,988
4,860	24		142,183	2,261	1,099,130	110,909	31,214	219,861
1,856	16		177,525		857,000		(2)	279,000
			11,980		95,000		(2)	18,987
							(2)	
							(3)	
19,312	431		376,081	6,399	3,082,132	336,984	39,097	522,980
16,715	415		481,745		2,196,600		(2)	798,050
5,000	80		110,000		990,000		(2)	230,000
			86,446	2,160			(2)	142,900
							(3)	
432	14		3,472	54	25,788	3,223	249	7,937
1,020	11		7,051		23,500		(2)	16,803
70			6,000		12,000		(2)	10,000
							(2)	
							(3)	
87,942	2,192	99,248	909,743	21,287	10,938,856	708,410	201,333	1,650,999
13,670	386	32,000	459,787	6,974	3,414,040	374,450	85,317	638,271
6,808	155		71,000	1,000	500,000	68,000	13,000	110,000
			4,950		20,000			7,000

^a The error referred to in note 7 is also contained in this total.

^b 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.

^c Included in "all other Western states."

^d Includes establishments distributed as follows: 1900, California, 1; Colorado, 1; Illinois, 1; Missouri, 2; Nebraska, 1. 1890, California, 1; Iowa, 2; Missouri, 1. 1880, Michigan, 1; Minnesota, 1. 1870, Iowa, 1.

MANUFACTURES.

TABLE 24.—COTTON GOODS, DETAILED SUMMARY, BY STATES ARRANGED GEOGRAPHICALLY: 1900.

STATES.	Number of establishments.	CHARACTER OF ORGANIZATION.			CAPITAL.					Cash on hand, bills receivable, unsettled ledger accounts, raw materials, stock in process of manufacture, finished products on hand, and other sundries.
		Individual.	Firm and limited partnership.	Incorporated company.	Total.	Land.	Buildings.	Machinery, tools, and implements.		
United States	978	142	123	708	\$460,842,772	\$22,546,549	\$91,021,757	\$181,009,280	\$165,665,186	
New England states	332	36	22	274	272,668,914	14,820,308	55,523,593	99,093,173	103,231,838	
Maine	15			15	21,087,190	988,808	3,498,246	7,988,608	8,612,035	
New Hampshire	23	2	1	20	29,261,835	1,802,874	4,375,217	10,007,368	13,576,376	
Vermont	5			5	1,932,983	188,754	451,745	796,312	496,172	
Massachusetts	163	8	11	138	155,761,198	8,716,746	30,066,848	57,928,100	59,049,490	
Rhode Island	71	4	5	58	37,274,125	2,781,426	10,852,863	12,065,017	12,064,819	
Connecticut	55	12	5	38	27,351,588	832,202	6,778,674	19,307,775	9,432,937	
Middle states	225	75	80	70	59,078,820	3,277,083	11,827,917	20,779,919	23,693,951	
New York	34	12	6	16	14,509,211	740,927	3,621,305	5,341,881	4,805,098	
New Jersey	20	4	4	12	13,989,374	800,018	2,888,476	5,128,363	5,172,517	
Pennsylvania	154	56	68	30	22,386,121	1,193,575	3,364,273	8,152,753	9,675,520	
Delaware	3			3	484,858	27,000	98,260	205,789	153,809	
Maryland	14	3	2	9	7,709,256	515,513	1,355,603	1,951,133	3,887,007	
Southern states	400	30	18	352	124,532,804	4,250,540	23,741,094	59,179,798	37,861,432	
Virginia	7			7	4,403,206	108,559	784,481	2,236,186	1,274,030	
North Carolina	177	16	12	149	33,011,516	1,895,341	5,848,808	16,290,457	9,476,910	
South Carolina	30	4	1	75	39,258,946	805,742	7,705,755	13,748,418	11,999,031	
Georgia	67	7	1	59	24,158,159	1,166,237	4,701,906	10,828,803	7,461,213	
Alabama	31			31	11,638,767	327,152	2,364,991	5,198,990	3,747,624	
Mississippi	6		1	5	2,209,749	46,014	438,105	1,050,665	674,965	
Texas	4			4	2,227,184	64,869	373,234	922,991	866,090	
Kentucky	6			6	1,867,606	77,016	273,428	869,363	647,798	
Tennessee	17	2	2	13	3,767,726	152,243	891,197	1,832,928	891,358	
All other Southern states ¹	5	1	1	3	1,990,016	107,367	359,189	1,201,047	322,413	
Western states	16	1	3	12	4,562,171	193,668	1,029,153	1,956,388	1,377,965	
Ohio	3	1	1	3	168,492	700	21,600	56,813	89,379	
Indiana	4		1	3	1,673,141	60,900	373,097	715,980	523,164	
Wisconsin	3		1	2	467,808	34,250	75,750	185,900	171,908	
All other Western states ¹	6			6	2,247,733	102,818	553,706	997,095	533,614	

STATES.	Proprietors and firm members.	SALARIED OFFICIALS, CLERKS, ETC.									
		Total		Officers of corporations.		General superintendents, managers, clerks, etc.					
		Number.	Total salaries.	Number.	Salaries.	Total		Men.		Women.	
						Number.	Total salaries.	Number.	Salaries.	Number.	Salaries.
United States	389	4,713	\$7,123,574	1,179	\$3,034,116	3,534	\$4,089,468	3,220	\$3,959,165	314	\$130,293
New England states	72	1,988	3,705,238	412	1,561,045	1,576	2,144,193	1,402	2,068,702	174	75,491
Maine	1	100	231,815	33	124,500	67	107,315	63	105,515	4	1,800
New Hampshire		175	370,777	35	126,650	140	244,127	129	238,457	11	5,070
Vermont		20	26,579	8	11,600	12	15,079	12	15,079		
Massachusetts	37	1,080	2,013,902	220	951,350	860	1,062,522	733	1,009,543	127	52,979
Rhode Island	15	332	666,541	68	218,384	264	448,167	253	442,521	11	5,636
Connecticut	19	281	395,624	48	123,631	233	266,998	212	257,587	21	9,406
Middle states	249	907	1,803,339	127	410,147	780	893,192	706	862,481	74	30,711
New York	25	156	226,701	81 ^a	79,380	125	147,321	114	143,025	11	4,296
New Jersey	10	141	250,543	17	73,425	124	177,133	119	174,968	5	2,157
Pennsylvania	207	515	677,303	64	192,361	451	484,942	394	460,984	57	23,958
Delaware		11	15,449	1	6,000	10	9,449	10	9,449		
Maryland	7	84	133,338	14	58,981	70	74,367	69	74,057	1	300
Southern states	62	1,754	2,008,662	618	1,015,824	1,136	993,338	1,073	970,471	63	22,867
Virginia		32	50,387	15	29,065	17	21,322	17	21,322		
North Carolina	41	659	586,730	248	288,574	411	298,156	395	293,155	16	5,001
South Carolina	5	415	537,193	133	286,320	282	250,873	262	243,733	20	7,140
Georgia	10	332	430,501	111	206,274	221	224,227	204	217,386	17	6,841
Alabama		159	197,700	56	102,971	103	94,729	98	93,049	5	1,630
Mississippi	2	46	60,212	10	18,600	36	41,612	35	40,892	1	720
Texas		21	31,388	7	17,503	14	13,385	13	13,285	1	600
Kentucky		24	33,761	9	17,800	15	15,961	15	15,961		
Tennessee	3	47	54,364	25	37,517	22	16,847	21	16,607	1	240
All other Southern states ¹	1	19	26,426	4	10,700	15	15,726	13	15,081	2	645
Western states	6	64	106,385	22	47,600	42	58,735	39	57,511	3	1,224
Ohio	1	12	11,250	3	4,200	9	7,050	8	6,790	1	260
Indiana	3	18	34,264	8	19,900	10	14,364	9	14,000	1	364
Wisconsin	2	5	5,220	2	2,500	3	2,720	3	2,720		
All other Western states ¹		29	55,601	9	21,000	20	34,601	19	34,001	1	600

¹Includes establishments distributed as follows: Southern states—Arkansas, 2; Louisiana, 2; West Virginia, 1. Western states—California, 1; Colorado, 1; Illinois, 1; Missouri, 2; Nebraska, 1.

COTTON MANUFACTURES.

TABLE 24.—COTTON GOODS, DETAILED SUMMARY, BY STATES ARRANGED GEOGRAPHICALLY: 1900—Continued.

STATES.	WAGE-EARNERS, INCLUDING PIECEWORKERS, AND TOTAL WAGES.									
	Greatest number employed at any one time during the year.	Least number employed at any one time during the year.	Average number.	Total wages.	Men, 16 years and over.		Women, 16 years and over.		Children under 16 years.	
					Average number.	Wages.	Average number.	Wages.	Average number.	Wages.
United States.....	823,913	275,369	297,929	\$85,126,310	134,854	\$46,923,365	123,709	\$32,917,933	39,866	\$5,285,012
New England states.....	173,562	149,814	162,294	55,367,541	78,217	31,083,393	73,258	22,236,019	10,819	2,048,129
Maine.....	14,262	13,878	13,723	4,980,297	6,197	2,342,275	6,760	1,864,395	766	123,687
New Hampshire.....	21,825	19,542	20,454	6,759,422	9,229	3,599,509	10,362	2,996,626	863	168,287
Vermont.....	1,226	901	1,015	259,758	438	151,465	495	114,375	82	18,918
Massachusetts.....	91,001	82,991	92,085	32,327,443	45,105	18,298,457	41,057	12,855,112	5,923	1,178,874
Rhode Island.....	23,272	20,484	21,823	7,287,119	10,330	4,062,540	9,240	2,813,883	2,253	420,666
Connecticut.....	14,476	12,518	13,194	4,393,502	6,918	2,649,147	5,844	1,591,688	982	162,667
Middle states.....	38,309	31,912	34,843	11,396,710	14,473	6,132,776	16,056	4,589,949	4,314	678,985
New York.....	9,341	8,202	8,659	2,582,394	4,094	1,412,902	3,761	1,024,845	804	144,647
New Jersey.....	5,980	5,166	5,518	1,837,119	2,088	1,002,178	2,789	792,990	641	91,951
Pennsylvania.....	17,328	13,893	15,567	5,602,389	6,737	3,149,455	7,119	2,194,413	1,711	258,471
Delaware.....	629	204	372	138,844	108	58,885	222	67,700	42	12,259
Maryland.....	5,031	4,507	4,727	1,186,014	1,446	509,356	2,165	510,001	1,116	166,657
Southern states.....	108,506	90,528	97,494	17,501,648	40,528	9,820,597	32,523	5,669,916	24,488	2,511,135
Virginia.....	3,073	2,746	2,931	668,556	1,280	392,540	1,000	202,906	651	78,110
North Carolina.....	33,621	28,256	30,273	5,127,087	12,780	2,765,457	10,364	1,629,036	7,129	782,594
South Carolina.....	33,298	27,678	30,201	5,066,840	18,418	2,785,235	8,673	1,477,621	8,110	808,934
Georgia.....	20,494	17,023	18,283	3,566,951	7,309	1,815,126	6,495	1,270,484	4,479	481,801
Alabama.....	9,553	7,519	8,332	1,432,228	3,152	789,225	2,748	468,244	2,487	229,757
Mississippi.....	1,877	1,432	1,675	339,546	526	153,859	683	128,209	466	57,478
Texas.....	1,290	1,094	984	253,630	497	164,325	302	64,997	185	24,308
Kentucky.....	1,431	1,250	1,351	280,407	430	126,130	591	116,031	380	38,196
Tennessee.....	2,485	2,190	2,108	422,935	807	214,140	913	168,135	383	40,660
All other Southern states ¹	1,379	1,340	1,356	298,470	329	114,510	759	149,258	268	29,707
Western states.....	3,536	3,115	3,298	860,411	1,136	886,599	1,867	422,049	295	51,768
Ohio.....	117	80	106	27,861	24	11,482	82	16,379	.....	.....
Indiana.....	1,587	1,358	1,421	323,949	376	128,259	997	195,150	48	5,540
Wisconsin.....	387	315	347	80,587	181	39,170	191	38,750	25	2,647
All other Western states ¹	1,495	1,362	1,424	428,034	605	212,688	597	171,770	222	48,676

STATES.	WAGE-EARNERS, INCLUDING PIECEWORKERS, AND TOTAL WAGES.											
	Men, 16 years and over.											
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
United States.....	134,941	135,497	136,254	134,684	135,549	133,099	132,151	129,830	133,139	134,265	135,622	137,217
New England states.....	77,972	78,428	78,951	78,674	78,236	77,906	77,583	75,649	78,042	78,288	78,894	79,977
Maine.....	6,212	6,243	6,253	6,260	6,186	6,177	6,158	6,181	6,105	6,165	6,197	6,274
New Hampshire.....	9,156	9,219	9,259	9,096	9,096	9,141	9,142	9,125	9,235	9,280	9,407	9,431
Vermont.....	421	457	435	437	418	429	448	425	427	431	458	468
Massachusetts.....	44,990	45,219	45,696	45,523	45,428	45,138	44,758	42,956	45,110	45,127	45,836	46,082
Rhode Island.....	10,287	10,341	10,481	10,460	10,389	10,279	10,280	10,178	10,214	10,233	10,302	10,510
Connecticut.....	6,906	6,949	6,927	6,735	6,719	6,742	6,797	6,835	6,951	7,052	7,194	7,212
Middle states.....	14,007	14,608	14,719	13,760	14,682	14,384	14,293	14,265	14,472	14,584	14,694	14,620
New York.....	4,090	4,182	4,193	4,155	4,115	4,054	3,934	3,942	3,966	4,134	4,167	4,192
New Jersey.....	2,051	1,959	2,103	2,039	2,116	2,051	2,095	2,082	2,071	2,140	2,159	2,142
Pennsylvania.....	6,872	6,917	6,813	5,849	6,814	6,785	6,745	6,722	6,919	6,814	6,947	6,749
Delaware.....	129	112	158	189	191	87	61	65	80	83	94	102
Maryland.....	1,456	1,438	1,452	1,478	1,446	1,457	1,458	1,454	1,436	1,413	1,427	1,435
Southern states.....	41,248	41,327	41,432	41,115	41,462	39,689	39,161	38,797	39,488	40,254	40,889	41,468
Virginia.....	1,249	1,251	1,254	1,262	1,268	1,283	1,287	1,295	1,304	1,298	1,308	1,305
North Carolina.....	12,921	12,813	13,313	12,938	13,186	12,655	12,435	12,231	12,682	12,752	12,874	13,037
South Carolina.....	13,961	13,810	13,946	13,240	13,372	13,044	13,025	12,905	13,056	13,233	13,569	13,802
Georgia.....	7,240	7,593	7,516	7,753	7,652	7,235	6,938	6,863	7,007	7,233	7,265	7,359
Alabama.....	3,320	3,308	3,308	3,259	3,283	2,833	2,873	2,949	2,940	3,081	3,290	3,334
Mississippi.....	451	490	492	507	498	434	539	550	573	570	574	576
Texas.....	489	484	488	488	474	583	474	473	471	474	474	483
Kentucky.....	438	441	442	424	415	430	437	433	452	450	425	427
Tennessee.....	844	838	842	853	898	763	766	767	760	781	776	793
All other Southern states ¹	330	326	331	331	331	329	332	326	313	332	331	332
Western states.....	1,114	1,134	1,152	1,135	1,169	1,120						

MANUFACTURES.

TABLE 24.—COTTON GOODS, DETAILED SUMMARY, BY STATES ARRANGED GEOGRAPHICALLY: 1900—Continued.

STATES.	WAGE-EARNERS, INCLUDING PIECEWORKERS, AND TOTAL WAGES—continued.											
	Women, 16 years and over.											
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
United States	124,486	124,952	125,805	125,285	124,780	122,513	121,292	119,108	121,370	123,746	124,998	126,178
New England states	73,490	73,566	74,295	73,859	73,884	72,920	72,639	70,700	71,964	73,362	74,012	74,909
Maine.....	6,798	6,801	6,697	6,791	6,741	6,673	6,687	6,710	6,727	6,781	6,832	6,892
New Hampshire.....	2,068	10,375	10,576	10,418	10,215	10,025	10,349	10,345	10,364	10,448	10,483	10,484
Vermont.....	467	500	503	529	514	494	504	490	487	476	491	486
Massachusetts.....	41,344	41,221	41,870	41,692	41,571	41,388	40,706	38,742	39,819	40,894	41,384	42,057
Rhode Island.....	9,228	9,228	9,291	9,258	9,260	9,163	9,201	9,149	9,191	9,251	9,246	9,417
Connecticut.....	5,390	5,441	5,358	5,171	5,083	6,177	5,192	5,264	5,386	5,512	5,576	5,578
Middle states	16,227	16,239	16,287	16,258	16,281	15,952	15,655	15,637	15,879	15,999	16,160	16,098
New York.....	3,782	3,827	3,847	3,856	3,798	3,798	3,598	3,550	3,580	3,772	3,827	3,891
New Jersey.....	2,805	2,747	2,808	2,757	2,788	2,782	2,775	2,740	2,776	2,807	2,856	2,825
Pennsylvania.....	7,219	7,215	7,156	7,121	7,175	7,089	6,983	7,014	7,185	7,095	7,147	7,081
Delaware.....	251	294	329	345	348	98	115	149	171	173	188	206
Maryland.....	2,170	2,156	2,147	2,179	2,172	2,185	2,184	2,184	2,168	2,162	2,142	2,145
Southern states	32,950	33,287	33,336	33,239	33,175	31,823	31,170	30,933	31,658	32,512	32,959	33,277
Virginia.....	898	921	942	1,016	1,023	1,028	1,012	1,010	1,028	1,045	1,032	1,042
North Carolina.....	10,620	10,453	10,638	10,634	10,573	10,289	9,993	9,808	10,081	10,339	10,458	10,589
South Carolina.....	8,990	8,920	8,983	8,636	8,606	8,426	8,498	8,301	8,500	8,667	8,707	8,838
Georgia.....	6,405	6,859	6,669	6,806	6,690	6,331	6,078	6,081	6,299	6,525	6,616	6,581
Alabama.....	2,869	2,907	2,931	2,880	2,902	2,508	2,470	2,496	2,533	2,535	2,833	2,903
Mississippi.....	591	626	626	636	633	617	718	735	743	758	758	759
Texas.....	294	290	286	282	294	388	284	280	275	277	285	284
Kentucky.....	585	602	560	604	593	595	603	591	573	579	605	604
Tennessee.....	944	952	949	993	995	875	853	874	864	903	905	909
All other Southern states ¹	754	757	752	752	766	766	766	762	742	754	760	768
Western states	1,819	1,800	1,887	1,929	1,940	1,818	1,828	1,838	1,869	1,873	1,867	1,889
Ohio.....	62	75	76	85	83	80	87	84	88	89	92	89
Indiana.....	989	1,013	1,035	1,069	1,079	952	955	962	979	980	961	985
Wisconsin.....	185	184	193	191	186	196	190	193	194	193	194	195
All other Western states ¹	588	588	583	584	592	590	596	599	608	611	620	619

STATES.	WAGE-EARNERS, INCLUDING PIECEWORKERS, AND TOTAL WAGES—continued.											
	Children, under 16 years.											
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
United States	40,676	40,363	40,646	40,137	40,450	39,229	38,737	38,463	39,046	39,664	40,330	40,651
New England states	10,972	10,788	10,877	10,744	10,722	10,766	10,708	10,663	10,789	10,780	10,979	10,980
Maine.....	765	758	708	761	753	782	790	784	756	749	755	768
New Hampshire.....	866	867	879	864	849	863	856	859	845	856	873	878
Vermont.....	79	82	92	80	87	87	79	80	85	78	83	78
Massachusetts.....	6,101	5,902	5,914	5,877	5,881	5,860	5,842	5,713	5,955	5,950	6,028	6,053
Rhode Island.....	2,247	2,250	2,307	2,237	2,241	2,248	2,263	2,279	2,223	2,197	2,278	2,263
Connecticut.....	914	929	917	925	911	926	938	948	925	950	962	940
Middle states	4,358	4,283	4,343	4,298	4,340	4,218	4,232	4,270	4,307	4,367	4,415	4,329
New York.....	798	807	819	798	794	800	785	767	779	807	859	840
New Jersey.....	629	583	625	622	642	643	664	670	662	645	661	651
Pennsylvania.....	1,751	1,724	1,741	1,704	1,703	1,637	1,641	1,658	1,723	1,782	1,784	1,701
Delaware.....	57	61	60	75	80	20	20	20	20	27	26	32
Maryland.....	1,123	1,108	1,098	1,104	1,121	1,118	1,122	1,155	1,123	1,106	1,105	1,105
Southern states	25,063	25,008	25,144	24,810	25,104	23,958	23,443	23,236	23,637	24,205	24,624	25,032
Virginia.....	626	628	644	654	665	672	644	651	648	660	659	659
North Carolina.....	7,378	7,269	7,331	7,410	7,463	6,991	6,736	6,644	6,909	7,040	7,160	7,153
South Carolina.....	8,352	8,224	8,297	7,942	8,048	7,870	7,901	7,878	8,140	8,140	8,273	8,420
Georgia.....	4,599	4,723	4,683	4,704	4,730	4,440	4,243	4,124	4,181	4,300	4,459	4,501
Alabama.....	2,504	2,531	2,508	2,461	2,483	2,337	2,325	2,319	2,306	2,371	2,437	2,662
Mississippi.....	412	443	438	444	442	427	409	489	501	511	507	510
Texas.....	173	179	185	168	244	267	186	165	161	165	165	159
Kentucky.....	336	340	317	331	328	318	315	330	341	329	337	332
Tennessee.....	414	405	404	425	433	354	353	362	351	363	365	369
All other Southern states ¹	264	266	277	271	273	276	271	274	255	275	292	267
Western states	233	234	232	235	234	237	234	234	233	232	231	230
Ohio.....	48	48	48	48	48	48	48	48	48	48	48	48
Indiana.....	25	25	25	25	25	25	25	25	25	25	25	25
Wisconsin.....	210	211	209	212	211	214	221	221	240	239	239	237
All other Western states ¹												

¹ Includes establishments distributed as follows: Southern states—Arkansas, 2; Louisiana, 2; West Virginia, 1. Western states—California, 1; Colorado, 1; Illinois, 1; Missouri, 2; Nebraska, 1.

COTTON MANUFACTURES.

TABLE 24.—COTTON GOODS, DETAILED SUMMARY, BY STATES ARRANGED GEOGRAPHICALLY: 1900—Continued.

STATES.	SKILLED OPERATIVES BY CLASSES. (AVERAGE NUMBER.)									MACHINERY.		
	Spinners, mule.			Spinners, frame.			Weavers.			Producing spindles. (Not including twisting and doubling spindles.)	Mule.	Frame.
	Men, 16 years and over.	Women, 16 years and over.	Children, under 16 years.	Men, 16 years and over.	Women, 16 years and over.	Children, under 16 years.	Men, 16 years and over.	Women, 16 years and over.	Children, under 16 years.				Total number.	Number.	Number.
United States	5,328	108	563	7,823	19,171	16,513	41,776	47,941	1,798	19,008,352	5,503,480	13,444,872
New England states	3,973	40	277	3,013	10,640	2,477	23,656	23,804	590	12,850,987	4,477,190	8,373,788
Maine.....	240		48	198	1,081	193	1,945	2,600		841,621	260,948	584,673
New Hampshire.....	352		52	283	1,618	354	1,938	4,501	36	1,243,555	287,165	956,390
Vermont.....	37			11	41	18	86	146	7	100,028	43,316	56,712
Massachusetts.....	2,245	40	92	1,918	6,259	1,110	14,088	16,557	511	7,784,687	2,556,316	5,228,371
Rhode Island.....	748		46	326	1,024	566	3,632	3,404	27	1,880,622	940,328	940,294
Connecticut.....	351		39	277	617	236	2,022	1,596	9	1,000,574	393,126	607,448
Middle states	1,005	10	130	595	1,356	751	4,670	6,085	121	1,647,251	858,675	783,576
New York.....	576	9	55	295	892	295	1,855	1,855	7	720,268	367,136	353,132
New Jersey.....	194		2	18	77	54	873	245		431,730	367,002	64,638
Pennsylvania.....	285	1	73	191	395	226	3,180	3,001	78	306,637	124,447	182,190
Delaware.....				37	105	7	33	141		84,552		84,552
Maryland.....				54	387	169	207	843	36	154,064		154,064
Southern states	305	58	150	3,692	6,780	13,173	13,247	12,202	1,076	4,298,188	180,534	4,117,654
Virginia.....	8		1	120	176	424	441	573	12	126,827	2,325	124,502
North Carolina.....	42			1,392	2,624	4,241	3,739	3,265	243	1,133,432	35,352	1,098,080
South Carolina.....	45	16	6	1,347	1,984	4,913	5,343	3,641	594	1,431,349	10,752	1,420,597
Georgia.....	128		84	872	878	2,571	2,196	2,577	90	815,545	84,925	730,619
Alabama.....	49	42	17	207	450	330	936	738	44	411,328	8,000	403,328
Mississippi.....				10	136	165	105	319	56	75,122		75,122
Texas.....				86	85	61	114	98		48,756		48,756
Kentucky.....	15		10	17	108	89	27	214	5	60,633	18,399	48,234
Tennessee.....	18		32	112	217	223	317	353	19	123,896	20,780	103,116
All other Southern states ¹				20	177	156	29	424	13	65,300		65,300
Western states	45		6	23	395	112	203	850	11	211,926	47,072	164,854
Ohio.....							3	17				
Indiana.....	17			2	186	10	1	485	4	102,488	16,920	86,168
Wisconsin.....	4			19	28	5	43	67		21,496	2,816	18,680
All other Western states ¹	24		0	2	181	97	156	281	7	87,942	27,936	60,006

STATES.	MACHINERY—continued.								MISCELLANEOUS EXPENSES.					
	Total number.	Looms.				On twills and satens.	On fancy weaves.	On tapes and other narrow goods.	On bags and other special fabrics.	Total amount.	Rent of works.	Taxes.	Rent of offices, insurance, interest, etc.	Contract work.
		Less than 28 inches wide.	From 28 to 32 inches wide.	From 32 to 36 inches wide, inclusive.	More than 36 inches wide.									
United States	450,682	35,601	98,995	79,349	126,082	58,830	45,686	1,709	4,421	\$21,650,144	\$691,075	\$3,521,006	\$15,844,509	\$1,592,954
New England states	298,885	16,765	77,326	37,722	84,916	47,080	31,635	1,586	1,855	13,098,849	497,826	2,585,232	9,247,640	768,151
Maine.....	23,866	2,005	5,225	2,581	9,175	2,018	1,428		934	1,440,425	3,600	242,230	788,375	406,220
New Hampshire.....	35,123	214	14,528	6,265	7,799	5,627	335		855	1,502,420	1,600	314,367	1,173,856	12,707
Vermont.....	2,099	1,653	430		16					48,282		5,650	37,632	
Massachusetts.....	179,280	11,079	51,177	25,386	39,415	28,213	23,748		312	7,243,357	13,714	1,054,300	5,391,813	138,530
Rhode Island.....	39,472	1,719	2,222	2,567	19,581	7,852	3,945	1,586		1,680,859	464,454	240,778	763,537	112,090
Connecticut.....	19,545	95	3,744	8,930	3,370	2,179			254	1,288,506	14,658	127,917	1,092,427	53,604
Middle states	36,134	6,442	3,023	3,501	8,035	3,403	10,031	123	1,576	3,567,960	180,147	279,546	2,385,463	722,804
New York.....	14,545	5,478	939	1,695	5,040	1,050	156	6	133	909,951	24,943	135,327	579,833	169,248
New Jersey.....	2,226	278	104	13	324	660	655		192	403,119	5,685	65,078	338,732	9,724
Pennsylvania.....	15,815	406	1,456	1,025	1,541	1,656	8,478	78	1,177	1,852,026	141,464	52,863	1,107,807	549,832
Delaware.....	738			235			500			5,448		1,701	4,487	
Maryland.....	2,810	282	524	768	892	87	244	39	24	397,016	3,155	34,517	354,314	
Southern states	110,010	12,374	17,930	34,446	32,323	8,356	3,856		725	4,780,635	7,478	630,340	4,040,818	101,909
Virginia.....	4,608	2,253	157	893	713	389	198			135,173	1,800	24,620	108,753	
North Carolina.....	25,469	7,241	3,305	3,264	7,111	1,499	2,735		314	1,080,918	2,775	185,963	865,958	26,222
South Carolina.....	42,663	2,171	5,664	15,939	15,040	3,729	100		20	1,607,824		206,355	1,237,597	33,872
Georgia.....	19,393	316	4,409	6,652	6,261	1,163	463		129	1,041,863		178,564	831,920	31,370
Alabama.....	8,549	36	1,866	3,441	2,063	133	360			511,296		42,809	468,487	
Mississippi.....	2,464		1,094	734		636				117,117	375	12,367	104,375	
Texas.....	1,018		498	204		244				113,156		6,105	107,051	
Kentucky.....	991			916						105,796	2,078	9,843	83,349	10,526
Tennessee.....	2,995	562	608	1,366	260	313				142,578	450	12,408	129,960	
All other Southern states ¹	1,860		329	1,037	275	200				74,614		1,246	73,368	
Western states	5,658	20	716	3,630	808		164		265	202,700	5,624	26,488	170,588	
Ohio.....	168			5	2					17,812	4,844	1,728	11,240	
Indiana.....	2,712		523	1,989	200					71,648		12,455	59,193	
Wisconsin.....	591			577						13,992		3,954	10,038	
All other Western states ¹	2,192	20	193	1,109	606		164		100	99,248		8,371	90,097	

¹ Includes establishments distributed as follows: Southern states—Arkansas, 2; Louisiana, 2; West Virginia, 1. Western states—California, 1; Colorado, 1; Illinois, 1; Missouri, 2; Nebraska, 1.

TABLE 24.—COTTON GOODS, DETAILED SUMMARY, BY STATES ARRANGED GEOGRAPHICALLY: 1900—Continued.

STATES.	MATERIALS USED.									
	Total cost.	Cotton.								
		Sea island.			Other domestic.			Egyptian and other foreign.		
		Bales.	Pounds.	Cost.	Bales.	Pounds.	Cost.	Bales.	Pounds.	Cost.
United States.....	\$178,441,390	47,207	18,442,634	\$2,725,023	3,516,080	1,739,714,946	\$116,108,879	76,208	55,844,932	\$6,071,173
New England states.....	91,727,594	36,674	14,416,364	2,133,804	1,719,622	874,011,257	58,329,174	66,464	48,977,406	5,321,948
Maine.....	7,036,287				156,674	79,212,256	5,400,379	754	553,317	62,914
New Hampshire.....	11,960,102				271,262	136,805,127	9,394,529	367	183,520	18,997
Vermont.....	526,235				12,493	6,410,674	885,461	555	417,729	46,994
Massachusetts.....	54,068,038	21,474	8,502,845	1,194,021	1,015,305	517,038,846	33,771,414	48,257	35,292,324	3,944,845
Rhode Island.....	10,601,006	7,308	2,785,257	472,340	170,514	86,712,235	6,074,331	8,686	6,575,088	592,179
Connecticut.....	7,535,926	7,892	3,128,262	467,443	93,374	47,782,119	3,303,060	7,845	5,955,428	656,019
Middle states.....	23,650,270	10,146	3,872,270	568,219	272,947	135,004,971	9,327,774	9,195	6,476,727	700,036
New York.....	5,257,419	1,649	659,600	106,015	99,064	50,464,770	3,513,661	1,877	1,118,679	123,591
New Jersey.....	2,926,876	3,497	3,212,670	462,204	15,872	8,133,469	541,858	5,275	3,891,729	407,681
Pennsylvania.....	12,238,660				74,382	35,033,214	2,521,768	2,043	1,466,319	168,764
Delaware.....	187,919				2,675	1,371,563	106,358			
Maryland.....	3,039,396				80,954	39,901,955	2,644,129			
Southern states.....	56,138,569	387	154,000	23,000	1,477,775	707,159,521	46,938,926	549	390,799	49,139
Virginia.....	1,412,332				33,118	17,832,465	1,154,215			
North Carolina.....	17,386,624	387	154,000	23,000	404,148	189,984,750	13,604,720			
South Carolina.....	17,263,882				485,024	229,899,780	14,909,520	210	154,047	20,026
Georgia.....	11,113,356				303,836	145,470,324	9,665,464	300	225,000	27,000
Alabama.....	4,825,981				134,371	67,987,290	4,206,721			
Mississippi.....	767,827				20,962	10,363,453	623,576			
Texas.....	641,341				18,045	9,304,434	566,517			
Kentucky.....	972,244				23,982	11,971,815	770,363			
Tennessee.....	1,143,284				30,234	15,028,584	932,146	39	11,752	2,163
All other Southern states ¹	612,543				19,055	9,316,623	505,684			
Western states.....	1,924,657				45,736	23,539,197	1,463,005			
Ohio.....	142,090									
Indiana.....	700,557				19,884	10,233,614	608,822			
Wisconsin.....	172,267				4,565	2,316,727	145,773			
All other Western states ¹	909,743				21,287	10,938,856	708,410			

STATES.	MATERIALS USED—continued.											
	Yarns not made in mill.											
	Cotton.		Woolen.		Worsted.		Silk.		Spun silk.		Other yarns.	
	Pounds.	Cost.	Pounds.	Cost.	Pounds.	Cost.	Pounds.	Cost.	Pounds.	Cost.	Pounds.	Cost.
United States.....	83,832,216	\$15,749,536	435,361	\$176,467	687,019	\$415,904	298,716	\$1,158,321	208,403	\$625,658	2,174,275	\$520,223
New England states.....	26,066,155	5,744,449	120,776	29,960	113,850	89,417	216,040	895,989	78,679	306,273	1,247,062	276,745
Maine.....	1,417,213	225,219									83,200	20,800
New Hampshire.....	821,537	124,337									10,311	3,752
Vermont.....	74,349	10,836										
Massachusetts.....	14,770,086	3,307,608	120,776	29,960	113,850	89,417	142,249	676,210	78,679	306,273	1,005,784	219,551
Rhode Island.....	4,114,403	924,946									121,727	27,319
Connecticut.....	4,868,512	1,151,503					78,791	219,779			26,040	5,323
Middle states.....	42,487,453	8,102,738	313,855	146,257	573,169	326,437	82,676	262,332	129,724	319,385	720,537	209,424
New York.....	3,233,664	778,826	50	45			5	26	100	300	178,523	44,473
New Jersey.....	1,790,312	424,569					13,020	66,335	200	600	95,000	46,800
Pennsylvania.....	36,304,919	6,741,518	313,335	146,212	573,169	326,437	69,651	195,971	129,424	318,485	403,979	110,040
Delaware.....	182,039	40,369										
Maryland.....	926,469	117,456									48,035	8,105
Southern states.....	14,206,608	1,771,469	700	250							188,926	32,754
Virginia.....	231,372	33,231									148,639	31,225
North Carolina.....	10,284,438	1,268,058									4,237	1,079
South Carolina.....	2,866,925	365,106										
Georgia.....	76,028	10,775									36,000	450
Alabama.....	650,000	80,000										
Mississippi.....												
Texas.....												
Kentucky.....	11,527	2,439	700	250								
Tennessee.....	28,670	3,070										
All other Southern states ¹	67,600	8,740										
Western states.....	1,072,000	130,880									17,700	1,300
Ohio.....	1,040,000	125,400									17,700	1,300
Indiana.....												
Wisconsin.....	26,000	4,400										
All other Western states ¹	6,000	1,080										

¹Includes establishments distributed as follows: Southern states—Arkansas, 2; Louisiana, 2; West Virginia, 1. Western states—California, 1; Colorado, 1; Illinois, 1; Missouri, 2; Nebraska, 1.

COTTON MANUFACTURES.

TABLE 24.—COTTON GOODS, DETAILED SUMMARY, BY STATES ARRANGED GEOGRAPHICALLY: 1900—Continued.

STATES.	MATERIALS USED—continued.											
	Waste of other mills.		Oil.		Starch.		Chemicals and dyestuffs.	Fuel.	Rent of power and heat.	Mill supplies.	All other materials.	Freight.
	Pounds.	Cost.	Gallons.	Cost.	Pounds.	Cost.	Cost.	Cost.	Cost.	Cost.	Cost.	Cost.
United States	40,835,400	\$1,513,281	2,752,271	\$494,179	53,656,304	\$1,223,102	\$5,671,768	\$6,039,485	\$382,676	\$7,664,400	\$4,614,468	\$2,286,757
New England states	34,679,845	1,242,765	1,607,707	265,796	30,898,520	753,075	3,854,915	3,440,995	127,163	4,656,208	3,033,275	1,225,643
Maine	3,821,532	190,753	135,781	19,757	3,026,423	62,864	136,645	139,919	37,266	403,017	134,917	202,337
New Hampshire	434,033	24,518	246,466	34,799	4,719,505	144,940	765,943	410,995	15,767	519,970	352,931	154,619
Vermont .....	.....	.....	7,660	1,123	119,644	1,934	5,071	20,226	.....	32,761	4,100	17,679
Massachusetts	22,392,334	638,860	396,395	147,001	18,584,853	405,536	2,367,105	2,132,036	47,723	2,527,224	1,576,707	646,592
Rhode Island	5,965,702	269,353	222,756	46,191	2,374,573	67,817	331,017	519,653	997	743,558	497,023	23,782
Connecticut	2,067,674	63,781	93,149	16,925	2,073,522	70,484	259,129	217,216	25,405	430,678	468,597	175,634
Middle states	2,388,242	115,332	274,243	54,934	4,588,077	103,709	840,459	635,370	130,235	744,037	370,835	192,657
New York	124,628	7,140	119,486	17,903	1,107,898	27,465	77,834	160,155	62,896	130,678	108,481	47,925
New Jersey .....	.....	.....	25,283	7,954	1,396,068	26,821	295,015	122,996	.....	104,176	366,103	53,765
Pennsylvania	2,263,614	108,192	89,846	21,296	1,717,454	42,784	453,878	278,389	67,211	316,015	348,718	72,932
Delaware .....	.....	.....	2,124	335	35,691	1,163	6,000	18,876	.....	13,433	.....	1,385
Maryland .....	.....	.....	37,505	7,446	330,966	5,476	7,682	54,954	123	129,735	47,533	16,650
Southern states	3,767,318	155,184	331,317	165,581	17,525,253	353,653	953,757	1,379,055	123,093	2,159,706	676,530	306,662
Virginia .....	.....	.....	16,422	3,042	374,272	7,841	74,066	31,909	2,800	21,133	52,353	417
North Carolina	777,101	35,410	236,491	56,949	4,527,391	91,233	478,253	703,811	14,623	602,014	231,705	275,714
South Carolina	367,110	21,420	213,091	46,688	6,038,638	115,956	50,707	555,252	55,950	725,964	195,602	201,691
Georgia	48,641	1,946	189,036	34,117	3,413,851	65,960	225,971	269,722	48,935	425,302	95,809	241,905
Alabama .....	.....	.....	81,615	15,786	1,666,938	33,537	21,032	141,947	40	192,418	71,857	57,643
Mississippi .....	.....	.....	6,150	1,302	278,550	7,275	43,912	45,709	.....	41,873	3,680	.....
Texas .....	.....	.....	6,700	1,741	366,000	9,360	180	38,566	.....	22,648	2,334	.....
Kentucky	2,519,477	94,251	8,617	1,392	263,737	6,769	14,693	20,537	.....	35,837	14,179	11,434
Tennessee .....	.....	.....	12,443	2,854	374,319	6,900	29,764	39,826	.....	59,668	4,269	12,534
All other Southern states ¹	54,934	2,157	10,752	1,710	231,512	3,777	15,174	31,776	750	32,764	4,792	5,224
Western states .....	.....	.....	39,004	7,868	644,449	12,660	22,637	84,065	2,130	104,439	33,778	61,795
Ohio .....	.....	.....	395	307	1,420	88	3,315	1,695	1,100	1,848	4,850	2,237
Indiana .....	.....	.....	11,340	1,997	250,755	3,676	5,299	24,038	.....	33,776	12,173	5,726
Wisconsin .....	.....	.....	2,692	454	67,000	1,818	.....	7,504	.....	3,256	2,939	1,123
All other Western states ¹ .....	.....	.....	24,577	5,110	325,274	7,123	14,023	50,773	.....	55,609	13,316	52,709

STATES.	PRODUCTS.								
	Total value.	Plain cloths for printing or converting.				Brown or bleached sheetings and shirtings.		Twill and sateens.	
		Not finer than No. 28 warp.		Finer than No. 28 warp.		Square yards.	Value.	Square yards.	Value.
		Square yards.	Value.	Square yards.	Value.				
United States	\$332,806,156	1,056,278,952	\$35,616,575	525,334,375	\$22,104,365	1,212,403,048	\$55,513,032	235,860,518	\$14,301,302
New England states	188,653,165	847,946,980	27,958,118	333,196,030	17,357,642	481,298,187	25,203,827	198,315,724	12,324,450
Maine	14,631,086	3,967,731	199,847	35,052,077	1,659,366	94,416,781	4,825,924	25,133,579	1,626,978
New Hampshire	22,938,249	79,130,448	2,868,638	4,168,353	212,820	64,953,520	3,076,366	23,926,221	1,331,439
Vermont	999,886	21,535,813	693,733	.....	.....	.....	.....	.....	.....
Massachusetts	110,478,327	637,235,050	22,164,741	240,170,139	9,774,579	176,233,924	9,255,612	86,663,240	5,859,023
Rhode Island	24,066,175	53,893,978	1,951,636	45,378,596	2,403,175	123,276,732	7,160,965	43,303,277	2,504,620
Connecticut	15,469,442	2,133,955	74,523	58,426,805	3,307,702	17,367,180	884,900	19,724,407	952,335
Middle states	45,705,085	83,338,422	2,938,123	2,530,936	111,840	32,973,722	2,252,934	21,494,567	1,244,435
New York	9,947,986	79,523,329	2,800,831	599,731	23,793	24,699,240	1,500,821	8,532,190	463,930
New Jersey	6,540,289	2,497,136	127,854	297,235	14,450	.....	.....	4,540,034	230,411
Pennsylvania	23,421,470	.....	.....	.....	.....	5,102,057	572,454	8,345,436	493,264
Delaware	372,039	1,317,957	59,338	1,633,970	63,597	.....	.....	.....	.....
Maryland	5,423,251	.....	.....	.....	.....	3,272,425	179,659	26,357	1,380
Southern states	94,914,794	111,052,162	4,290,969	139,201,156	4,676,724	644,577,636	26,043,690	15,550,227	732,367
Virginia	2,655,002	1,363,539	62,270	.....	.....	13,206,054	710,591	.....	.....
North Carolina	28,372,798	28,674,257	1,075,624	22,570,637	337,944	38,085,411	3,471,329	114,166	5,739
South Carolina	29,723,919	77,848,103	3,034,475	37,343,526	3,171,193	233,105,333	11,553,073	11,379,712	433,434
Georgia	13,457,645	1,831,596	69,527	4,331,999	154,710	131,739,917	5,127,409	420,000	53,803
Alabama	8,153,136	1,323,662	59,073	9,130,864	233,617	75,432,173	2,341,008	1,367,609	53,305
Mississippi	1,472,335	.....	.....	5,774,030	199,255	3,737,332	363,764	.....	.....
Texas	1,199,930	.....	.....	.....	.....	3,354,609	173,457	.....	.....
Kentucky	1,663,712	.....	.....	.....	.....	14,659,303	634,237	.....	.....
Tennessee	1,994,935	.....	.....	.....	.....	11,012,670	501,576	2,233,740	123,439
All other Southern states ¹	1,220,822	.....	.....	.....	.....	17,634,334	767,246	.....	.....
Western states	3,533,112	13,941,338	379,365	406,703	13,159	53,553,453	2,012,531	.....	.....
Ohio	231,045	700,000	21,000	.....	.....	.....	.....	.....	.....
Indiana	1,335,007	8,727,333	196,365	.....	.....	23,076,433	933,333	.....	.....
Wisconsin	316,061	.....	.....	.....	.....	7,030,514	236,576	.....	.....
All other Western states ¹	1,650,999	4,514,055	162,000	406,703	13,159	13,416,501	757,617	.....	.....

¹Includes establishments distributed as follows: Southern states—Arkansas, 2; Louisiana, 2; West Virginia, 1. Western states—California, 1; Colorado, 1; Illinois, 1; Missouri, 2; Nebraska, 1.

TABLE 24.—COTTON GOODS, DETAILED SUMMARY, BY STATES ARRANGED GEOGRAPHICALLY: 1900—Continued.

STATES.	PRODUCTS—continued.									
	Fancy woven fabrics.		Ginghams.		Duck.				Drills.	
	Square yards.	Value.	Square yards.	Value.	Sail.		Other.		Square yards.	Value.
United States	237,841,603	\$21,066,810	278,892,708	\$16,179,200	11,750,151	\$2,216,371	117,483,925	\$12,046,637	237,206,549	\$11,862,794
New England states	188,079,288	15,536,137	111,511,819	8,007,003	516,874	130,693	31,039,488	3,398,436	48,241,163	3,002,186
Maine.....	6,922,390	784,204	9,335,356	800,819	.....	.....	.....	.....	21,413,342	1,326,566
New Hampshire.....	2,019,785	263,296	44,760,333	3,092,400	.....	.....	8,162,191	991,123	6,380,915	356,244
Vermont.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Massachusetts.....	137,064,111	10,995,987	53,932,353	3,949,351	153,323	88,910	17,750,629	1,638,320	20,475,203	1,316,071
Rhode Island.....	21,554,243	1,997,352	.....	.....	.....	.....	.....	.....	.....	.....
Connecticut.....	20,518,759	1,495,298	2,983,772	164,433	363,546	91,783	5,126,618	768,993	21,703	3,255
Middle states	38,278,513	4,708,095	14,975,361	948,769	8,510,148	1,693,334	19,189,921	2,986,002	186,932	10,281
New York.....	.....	.....	.....	.....	.....	.....	1,191,300	865,485	.....	.....
New Jersey.....	4,455,994	580,577	2,972,723	156,909	.....	.....	1,369,127	277,248	.....	.....
Pennsylvania.....	30,981,363	3,906,347	11,792,633	623,860	.....	.....	.....	.....	.....	.....
Delaware.....	.....	.....	210,000	168,000	.....	.....	.....	.....	.....	.....
Maryland.....	2,841,156	221,171	.....	.....	8,510,148	1,693,334	16,629,494	2,343,269	186,932	10,281
Southern states.....	11,483,802	822,078	151,905,628	7,223,428	2,723,129	392,344	66,813,750	5,632,615	188,762,583	8,849,672
Virginia.....	1,419,593	99,629	27,600,235	1,358,195	.....	.....	2,508,716	140,834	4,790,967	242,271
North Carolina.....	7,770,704	502,123	79,531,131	3,799,187	.....	.....	226,951	21,106	2,821,238	138,110
South Carolina.....	213,063	14,000	16,752,303	806,551	337,944	50,692	6,838,210	931,297	116,407,224	5,375,017
Georgia.....	965,038	142,887	25,302,954	1,117,529	.....	.....	31,673,022	2,143,546	36,373,866	1,801,586
Alabama.....	.....	.....	.....	.....	2,084,385	319,092	13,523,893	1,390,108	14,307,094	607,927
Mississippi.....	.....	.....	261,463	7,842	.....	.....	1,567,536	111,853	4,436,073	281,240
Texas.....	.....	.....	.....	.....	.....	.....	7,055,784	722,750	3,273,339	130,933
Kentucky.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tennessee.....	1,115,399	63,439	2,456,932	134,124	.....	.....	1,934,666	104,503	2,975,075	163,016
All other Southern states ¹	.....	.....	.....	.....	300,800	22,560	818,912	64,613	2,752,702	114,572
Western states.....	.....	.....	.....	.....	.....	.....	440,816	29,584	15,871	705
Ohio.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Indiana.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wisconsin.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
All other Western states ¹	.....	.....	.....	.....	.....	.....	440,816	29,584	15,871	705

STATES.	PRODUCTS—continued.									
	Ticks, denims, and stripes.		Cottonades.		Napped fabrics.		Corduroy, cotton velvet, and plush.		Mosquito and other netting.	
	Square yards.	Value.	Square yards.	Value.	Square yards.	Value.	Square yards.	Value.	Square yards.	Value.
United States	171,800,853	\$16,446,633	26,323,947	\$2,791,431	268,532,716	\$18,281,044	7,961,522	\$2,682,017	41,885,023	\$875,868
New England states	108,420,059	10,724,795	5,645,907	570,431	218,637,011	15,005,477	3,653,019	1,129,243	22,158,370	455,119
Maine.....	5,243,675	588,764	3,901,386	377,849	14,190,745	995,867	.....	.....	.....	.....
New Hampshire.....	32,201,176	3,226,593	.....	.....	62,258,909	4,394,860	.....	.....	.....	.....
Vermont.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Massachusetts.....	63,794,395	5,380,689	1,190,555	145,006	137,199,384	9,328,653	1,637,597	349,343	1,958,116	137,175
Rhode Island.....	.....	.....	.....	.....	.....	.....	1,965,422	779,900	6,379,307	80,239
Connecticut.....	7,180,313	1,523,744	553,966	46,976	4,932,973	286,097	.....	.....	13,820,947	237,711
Middle states	12,947,985	1,165,017	8,283,467	1,238,303	5,814,757	832,836	4,308,504	1,552,774	19,726,653	420,749
New York.....	.....	.....	772,440	52,888	1,069,384	303,905	36,000	14,400	8,083,513	186,986
New Jersey.....	.....	.....	.....	.....	.....	.....	827,000	118,800	11,688,135	233,763
Pennsylvania.....	12,262,848	1,110,206	7,004,759	1,134,039	3,718,732	523,772	3,945,504	1,419,574	.....	.....
Delaware.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Maryland.....	685,137	54,311	511,268	51,376	1,026,591	55,159	.....	.....	.....	.....
Southern states.....	50,432,809	4,556,821	12,389,573	982,697	40,633,116	2,109,572	.....	.....	.....	.....
Virginia.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
North Carolina.....	23,228,007	2,521,849	6,289,031	409,634	30,175,177	1,555,920	.....	.....	.....	.....
South Carolina.....	1,802,138	139,131	.....	.....	840,372	35,000	.....	.....	.....	.....
Georgia.....	16,971,704	1,043,395	4,173,815	399,553	6,044,140	265,960	.....	.....	.....	.....
Alabama.....	.....	250,000	1,040,307	74,990	.....	.....	.....	.....	.....	.....
Mississippi.....	.....	.....	886,420	98,520	3,573,427	252,692	.....	.....	.....	.....
Texas.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kentucky.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tennessee.....	6,701,708	421,372	.....	.....	.....	.....	.....	.....	.....	.....
All other Southern states ¹	1,729,197	176,074	.....	.....	.....	.....	.....	.....	.....	.....
Western states.....	.....	.....	.....	.....	3,767,332	233,159	.....	.....	.....	.....
Ohio.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Indiana.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wisconsin.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
All other Western states ¹	.....	.....	.....	.....	3,767,332	233,159	.....	.....	.....	.....

¹ Includes establishments distributed as follows: Southern states—Arkansas, 2; Louisiana, 2; West Virginia, 1. Western states—California, 1; Colorado, 1; Illinois, 1; Missouri, 2; Nebraska, 1.

COTTON MANUFACTURES.

TABLE 24.—COTTON GOODS, DETAILED SUMMARY, BY STATES ARRANGED GEOGRAPHICALLY: 1900—Continued.

STATES.	PRODUCTS—continued.									
	Upholstery goods.								Bags and bagging.	
	Tapestries (piece goods and curtains).		Chenille curtains.		Lace and lace curtains.		Other, including covers.			
	Square yards.	Value.	Square yards.	Value.	Square yards.	Value.	Square yards.	Value.	Square yards.	Value.
United States	10,131,538	\$4,123,600	805,414	\$257,840	36,880,198	\$3,585,138	2,517,459	\$703,806	30,039,616	\$2,554,192
New England states	447,267	50,491			105,000	70,000	862,448	121,344	19,974,844	1,485,254
Maine							862,448	121,344	6,142,221	477,610
New Hampshire									5,591,681	696,512
Vermont										
Massachusetts	447,267	50,494							8,240,942	312,132
Rhode Island										
Connecticut					105,000	70,000				
Middle states	9,684,271	4,073,106	805,414	257,840	36,775,198	3,515,138	1,655,011	582,462	797,605	124,439
New York					5,850,000	486,523			614,696	100,913
New Jersey	60,800	15,000	60,000	13,800						
Pennsylvania	9,586,606	4,048,784	745,414	244,840	30,925,198	3,028,615	1,655,011	582,462		
Delaware										
Maryland	37,665	9,322							182,909	23,526
Southern states									8,767,167	907,099
Virginia										
North Carolina									1,285,365	301,682
South Carolina									229,109	20,384
Georgia									4,030,293	252,303
Alabama									16,600	500
Mississippi										
Texas									1,234,901	125,320
Kentucky									750,000	96,500
Tennessee									1,220,899	109,305
All other Southern states										
Western states									500,000	37,400
Ohio										
Indiana										
Wisconsin										
All other Western states									500,000	37,400

STATES.	PRODUCTS—continued.									
	Tape and webbing.		Yarns for sale.		Sewing cotton.		Twine.		Batting and wadding.	
	Pieces.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.
United States	1,160,873	\$328,801	332,136,012	\$55,188,663	15,741,062	\$11,825,218	11,132,250	\$1,475,146	10,567,700	\$864,016
New England states	374,607	10,015	118,351,581	24,091,170	10,674,886	8,349,456	1,902,761	252,951	7,537,820	645,535
Maine	1,758	263	2,768,234	406,426					199,040	11,600
New Hampshire			6,018,260	847,278			10,000	1,200		
Vermont			1,532,247	277,542					74,860	3,360
Massachusetts	2,166	363	87,656,177	18,205,806	3,390,883	2,800,495	1,245,540	135,639	380,500	18,524
Rhode Island	360,000	15,000	14,366,101	2,817,858	3,851,844	2,687,827	347,605	79,563	6,009,080	551,919
Connecticut	10,688	3,389	6,010,562	1,586,266	3,432,159	2,861,134	299,616	36,549	374,340	60,132
Middle states	476,014	190,786	41,710,549	6,656,129	4,208,522	3,349,997	1,890,992	277,112	25,625	2,804
New York	2,500	12,500	17,922,997	2,782,165	330,000	150,000			25,625	2,804
New Jersey			3,727,865	870,824	3,560,795	3,130,267				
Pennsylvania	154,000	77,000	18,718,490	2,811,123	258,719	60,880	53,000	6,750		
Delaware			433,632	72,054						
Maryland	319,514	101,286	907,556	119,963	59,008	8,850	1,337,992	270,362		
Southern states	310,000	55,000	170,674,870	24,184,366	557,654	74,765	6,111,115	775,160	1,457,545	82,243
Virginia			51,927	8,190		2,691	65,466	6,977	7,134	449
North Carolina	310,000	55,000	86,970,599	12,708,636		187,800	26,292	2,800,530	412,127	29,931
South Carolina			24,859,616	3,461,090			648,190	69,186	2,400	72
Georgia			35,748,694	4,882,437		338,310	636,769	74,394	122,437	5,222
Alabama			14,432,028	1,965,139			1,320,624	145,269	11,333	1,823
Mississippi			1,039,493	126,756					59,840	4,000
Texas			288,400	34,608					46,200	462
Kentucky			5,020,741	701,854			461,938	47,719	728,939	43,739
Tennessee			2,000,033	263,662			177,598	19,488	323,925	17,406
All other Southern states			213,239	31,994	28,853	5,194			125,286	7,438
Western states	252	64,000	1,449,021	256,992	300,000	51,000	1,227,382	169,923	1,546,710	133,434
Ohio	252	64,000	440,000	96,000			40,000	10,000		
Indiana			791,521	136,367			39,382	4,923	219,888	15,096
Wisconsin										
All other Western states			217,500	24,625	300,000	51,000	1,148,000	155,000	1,326,822	118,338

¹Includes establishments distributed as follows: Southern states—Arkansas, 2; Louisiana, 2; West Virginia, 1. Western states—California, 1; Colorado, 1; Illinois, 1; Missouri, 2; Nebraska, 1.

MANUFACTURES.

TABLE 24.—COTTON GOODS, DETAILED SUMMARY, BY STATES, ARRANGED GEOGRAPHICALLY: 1900—Continued.

STATES.	PRODUCTS—continued.				MANUFACTURED FOR EXPORT.	WEIGHT OF PRODUCTS.		
	Waste for sale.		Other products of cotton.	All other products.		Piece goods.	Yarns spun and not woven in the mill.	Other products.
	Pounds.	Value.	Value.	Value.		Pounds.	Pounds.	Pounds.
United States	270,100,756	\$5,552,234	\$5,154,170	\$9,199,753	\$15,357,502	1,124,224,637	343,291,338	71,753,649
New England states	173,315,267	3,871,402	1,838,378	7,056,354	5,666,595	576,231,680	125,238,394	37,107,387
Maine.....	10,532,399	210,176	177,720	39,763	1,430,000	64,589,813	2,760,987	5,021,810
New Hampshire.....	18,743,850	395,035	101,662	1,093,778	739,767	103,725,761	6,018,260	5,001,126
Vermont.....	860,135	16,762	.....	3,499	.....	3,900,736	1,532,247	1,164
Massachusetts.....	114,256,395	2,609,039	1,182,466	4,829,304	3,489,240	361,768,746	88,970,825	14,557,121
Rhode Island.....	18,763,717	336,250	118,647	521,230	3,761	3,060,039	17,636,684	9,137,122
Connecticut.....	10,153,771	254,150	257,883	567,079	3,837	39,185,935	8,340,391	3,339,044
Middle states	18,492,250	388,496	2,845,009	1,736,524	554,225	105,901,658	42,275,212	16,960,035
New York.....	6,554,045	126,419	350,264	213,309	11,576	25,940,718	17,870,669	3,394,770
New Jersey.....	2,542,061	78,133	193,279	449,774	.....	6,197,567	3,727,865	3,763,052
Pennsylvania.....	5,664,228	115,142	1,611,074	1,061,284	29,535	42,841,943	19,335,490	5,589,992
Delaware.....	209,423	4,060	.....	.....	.....	809,931	433,632	.....
Maryland.....	3,522,488	64,752	190,392	23,858	513,114	30,111,499	907,556	3,682,221
Southern states	76,290,167	1,261,701	922,313	339,170	9,088,240	425,535,425	174,298,711	14,041,130
Virginia.....	1,948,592	25,180	.....	.....	10,312	15,438,367	51,927	68,151
North Carolina.....	22,039,030	335,571	113,341	49,902	145,573	77,127,435	33,509,325	3,326,766
South Carolina.....	25,582,434	433,986	74,309	68,374	6,994,651	178,451,460	25,359,616	1,902,797
Georgia.....	15,310,695	285,614	383,238	205,167	1,230,856	81,294,311	35,749,078	3,793,636
Alabama.....	6,764,490	101,696	46,355	10,734	641,045	42,523,657	15,993,105	847,979
Mississippi.....	1,181,753	14,366	20,384	.....	36,000	6,827,632	1,038,993	292,797
Texas.....	441,439	4,618	.....	.....	29,303	7,922,226	288,400	46,200
Kentucky.....	1,224,276	24,000	212,100	3,563	.....	4,062,530	5,020,741	1,034,107
Tennessee.....	1,150,099	22,769	45,586	200	.....	9,180,864	2,000,333	2,271,359
All other Southern states ¹	647,459	12,901	17,000	1,230	.....	7,706,953	242,142	457,338
Western states	2,103,072	30,635	43,470	67,705	43,442	16,555,924	1,449,021	3,645,047
Ohio.....	3,000	45	.....	40,000	.....	392,000	440,000	265,000
Indiana.....	773,306	11,163	.....	2,705	.....	7,874,551	791,521	109,270
Wisconsin.....	250,038	5,635	23,800	.....	.....	1,765,133	.....	26,000
All other Western states ¹	976,668	13,742	24,670	25,000	43,442	6,524,245	217,500	3,244,777

STATES.	PRINTING, DYEING, BLEACHING, AND MERCERIZING CLOTH AND YARN IN COTTON MILLS.									
	Printing.			Dyeing.			Bleaching.		Mercerizing.	
	Printing machines.	Cloth printed.	Additional value given by printing.	Cloth dyed.	Yarn dyed.	Additional value given by dyeing.	Cloth bleached.	Additional value given by bleaching.	Yarn mercerized.	Additional value given by mercerizing.
United States	104	292,741,100	\$5,242,035	125,894,626	2151,610,157	\$6,803,077	197,691,533	\$932,452	2,149,722	\$323,330
New England states	97	291,593,300	5,191,214	62,636,716	63,496,281	2,490,457	125,235,506	590,649	1,647,470	245,017
Maine.....	.....	.....	.....	.....	3,340,491	83,299	6,778,075	22,831	.....	.....
New Hampshire.....	14	47,231,376	933,716	4,948,962	3,278,720	179,871	13,842,233	101,551	.....	.....
Vermont.....	.....	.....	.....	.....	307,252	9,218	.....	.....	.....	.....
Massachusetts.....	75	242,057,565	4,175,287	41,040,689	241,590,782	1,551,298	378,693,331	286,785	1,340,254	208,574
Rhode Island.....	7	2,270,000	81,750	8,313,138	4,523,039	403,777	26,921,612	147,936	.....	.....
Connecticut.....	1	34,360	461	7,373,907	10,455,907	232,994	.....	31,543	307,216	86,443
Middle states	6	1,115,808	51,166	55,965,346	13,166,563	1,070,248	46,677,444	194,121	502,252	83,313
New York.....	.....	.....	.....	5,513,033	106,450	44,883	13,456,476	40,604	26,328	3,242
New Jersey.....	.....	.....	.....	44,237,979	2,002,531	501,013	26,426,156	63,410	83,309	1,543
Pennsylvania.....	6	1,115,808	51,166	5,832,509	15,476,499	509,039	6,794,312	90,107	392,615	78,523
Delaware.....	.....	.....	.....	881,320	.....	7,635	.....	.....	.....	.....
Maryland.....	.....	.....	.....	.....	681,033	7,622	.....	.....	.....	.....
Southern states	1	31,492	315	5,741,892	68,361,413	3,211,107	25,278,533	142,682	.....	.....
Virginia.....	.....	.....	.....	.....	5,727,300	35,909	.....	.....	.....	.....
North Carolina.....	1	31,492	315	306,490	34,850,776	2,442,144	.....	.....	.....	.....
South Carolina.....	.....	.....	.....	.....	2,250,514	43,647	300,000	1,500	.....	.....
Georgia.....	.....	.....	.....	5,435,402	14,747,021	432,654	24,265,533	124,393	.....	.....
Alabama.....	.....	.....	.....	.....	2,123,309	33,095	.....	.....	.....	.....
Mississippi.....	.....	.....	.....	.....	2,394,623	53,329	713,000	16,239	.....	.....
Texas.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kentucky.....	.....	.....	.....	.....	1,556,969	43,139	.....	.....	.....	.....
Tennessee.....	.....	.....	.....	.....	2,710,396	52,190	.....	.....	.....	.....
All other Southern states ¹	.....	.....	.....	.....	2,000,000	20,000	.....	.....	.....	.....
Western states .....	.....	.....	.....	1,500,672	1,535,900	31,265	500,000	5,000	.....	.....
Ohio.....	.....	.....	.....	.....	320,000	4,300	.....	.....	.....	.....
Indiana.....	.....	.....	.....	.....	675,900	6,759	.....	.....	.....	.....
Wisconsin.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
All other Western states ¹	.....	.....	.....	1,500,672	590,000	20,206	500,000	5,000	.....	.....

¹ Includes establishments distributed as follows: Southern states—Arkansas, 2; Louisiana, 2; West Virginia, 1. Western states—California, 1; Colorado, 1; Illinois, 1; Missouri, 2; Nebraska, 1.
² Does not include 45,432 dozen underwear.
³ Does not include 975,000 yards cotton, 11,989 dozen underwear, and 646,931 quilts.
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COTTON MANUFACTURES.

TABLE 24.—COTTON GOODS, DETAILED SUMMARY, BY STATES ARRANGED GEOGRAPHICALLY: 1900—Continued.

STATES.	COMPARISON OF PRODUCTS.			Number of establishments reporting.	Total horse-power.	POWER.							
	Number of establishments reporting for both years.	Value for census year.	Value for preceding business year.			Owned.							
						Engines.				Water wheels.		Electric motors.	
						Steam.		Gas or gasoline.		Number.	Horse-power.	Number.	Horse-power.
Number.	Horse-power.	Number.	Horse-power.										
United States.....	602	\$241,797,279	\$201,875,820	958	805,126	1,755	527,186	10	275	1,316	250,790	275	15,268
New England states.....	229	143,763,288	118,174,006	331	498,868	960	324,062	4	221	839	162,618	86	7,126
Maine.....	12	12,718,118	11,072,519	15	39,968	25	12,350			98	23,233	4	355
New Hampshire.....	17	19,388,543	15,607,259	23	68,788	59	35,822			98	32,231	6	315
Vermont.....	4	963,294	787,206	5	3,170	4	1,400			8	1,770		
Massachusetts.....	111	81,892,089	66,615,282	162	281,082	687	210,880	3	206	383	64,158	63	5,671
Rhode Island.....	49	17,040,685	14,173,689	71	63,996	122	44,105			152	19,872		
Connecticut.....	86	11,760,559	9,918,051	55	41,919	83	19,505	1	15	150	21,354	13	785
Middle states.....	149	37,290,359	33,110,371	221	72,861	275	56,580	8	44	88	13,564	29	296
New York.....	19	8,485,844	7,548,310	34	23,859	47	14,801	2	40	45	8,524	9	105
New Jersey.....	12	6,101,315	5,402,096	19	14,215	63	18,044	1	4	11	1,005	17	162
Pennsylvania.....	109	17,625,292	15,321,204	151	22,463	138	19,615			11	831	?	29
Delaware.....	1	130,445	110,082	3	1,460	3	1,250			1	210		
Maryland.....	8	4,947,463	4,728,679	14	10,864	24	7,870			20	2,994		
Southern states.....	211	57,867,329	48,064,875	390	222,811	498	188,069	2	5	371	72,568	157	7,885
Virginia.....	8	2,074,780	2,003,160	7	5,048	6	1,690			30	3,070	1	28
North Carolina.....	85	14,197,270	11,846,103	177	58,442	207	37,258	1	3	141	19,225	28	1,466
South Carolina.....	42	17,916,449	14,159,857	80	78,801	117	43,386	1	2	90	26,434	114	5,759
Georgia.....	38	11,902,167	9,886,277	67	39,864	70	22,946			70	16,011	11	657
Alabama.....	17	5,137,318	4,526,506	21	23,032	36	16,485			25	6,508	3	35
Mississippi.....	3	955,204	784,062	6	3,365	12	3,380			1	35		
Texas.....	2	1,038,699	909,734	4	2,950	8	2,950						
Kentucky.....	6	1,663,712	1,333,096	6	3,605	12	3,455			1	150		
Tennessee.....	11	1,869,268	1,659,601	17	5,525	23	4,590			11	935		
All other Southern states ¹	4	1,112,462	956,479	5	2,179	7	1,979			2	200		
Western states.....	13	2,876,303	2,526,568	16	10,586	22	8,475	1	5	18	2,040	3	11
Ohio.....	3	231,045	197,672	3	350	2	300	1	5	2	40	1	5
Indiana.....	4	1,385,007	1,243,615	4	4,008	11	4,000					2	6
Wisconsin.....	1	129,419	130,000	3	1,575	3	575			14	1,000		
All other Western states ¹	5	1,180,832	955,281	6	4,655	6	3,600			2	1,000		

STATES.	POWER—continued.			ESTABLISHMENTS CLASSIFIED BY NUMBER OF PERSONS EMPLOYED, NOT INCLUDING PROPRIETORS AND FIRM MEMBERS.										
	Rented.		Furnished to other establishments.	Total number of establishments.	No employees.	Under 5.	5 to 20.	21 to 50.	51 to 100.	101 to 250.	251 to 500.	501 to 1,000.	Over 1,000.	
	Electric.	Other kind.												
	Horse-power.	Horse-power.												
United States.....	1,922	9,685	4,348	973	1	10	63	95	144	289	190	113	68	
New England states.....	718	4,123	3,375	382		2	14	28	33	80	61	62	52	
Maine.....		4,025	1,000	15					1	3	2	3	6	
New Hampshire.....	420			23					4	3	5	5	6	
Vermont.....				5						1	3			
Massachusetts.....	43	74	2,260	163		2	7	10	13	32	25	42	32	
Rhode Island.....	5	14		71			3	7	10	21	18	7	5	
Connecticut.....	250	10	115	55			4	10	5	20	8	5	3	
Middle states.....	850	2,027	995	225	1	8	43	41	85	61	23	9	4	
New York.....	350	39		34		1	4	7	6	8	3	2	3	
New Jersey.....				20	1		5	3		5	3	2	1	
Pennsylvania.....		1,988	995	154		7	32	31	24	42	13	5		
Delaware.....				3						2	1			
Maryland.....				14			2			4	3			
Southern states.....	854	3,480	198	400			5	25	74	144	99	41	12	
Virginia.....		260		7						4	2		1	
North Carolina.....	500			177			1	18	44	72	40	6	1	
South Carolina.....		3,220	3	80				2	6	28	24	13	7	
Georgia.....	350		160	67			1	5	12	21	14	12	2	
Alabama.....	4		10	31			1		5	9	9	6	1	
Mississippi.....				6				1		1	3	1		
Texas.....				4						1	3			
Kentucky.....				6						1	3	1		
Tennessee.....			25	17			1	4	5	4	2	1		
All other Southern states ¹				5			1		1	1	1	1		
Western states.....		55	280	16			1	1	2	4	7	1		
Ohio.....				3					2					
Indiana.....			280	4							3	1		
Wisconsin.....				3				1		2				
All other Western states ¹		55		6						2	4			

¹Includes establishments distributed as follows: Southern states—Arkansas, 2; Louisiana, 2; West Virginia, 1. Western states—California, 1; Colorado, 1; Illinois, 1; Missouri, 2; Nebraska, 1.

COTTON SMALL WARES.

At the census of 1900 for the first time a separate classification was made of the establishments producing cotton small wares, including cotton lace, edgings, boot and shoe lacings, corset lacings, lamp and stove wicks, tapes, webbings, and trimmings.

A small number of these establishments may have been reported at the Eleventh Census under the head of "millinery and lace goods," and some others may have been included in the class of "boot and shoe findings." Most of them, however, were included with cotton goods. Inasmuch as a few only of these establishments make use of raw cotton, or operate spindles, and since their products are quite distinct in character from those of ordinary cotton mills, it seems desirable to group them by themselves, in order to avoid misleading deductions from the statistics of the cotton manufacture proper, to recognize the importance of a rapidly expanding industry, and to lay a basis for future comparisons.

Nevertheless, the following tables do not give an exact view of the magnitude of the industries included in this group. The rule necessarily followed in classifying establishments is to combine those whose chief product, measured by value, is similar. Evidently no rule of classification gives an entirely satisfactory result. In the present instance there are cotton mills that make nothing but sewing cotton, and establishments which must be classed as producing cotton small wares that make a certain quantity of sewing cotton. Although tape and webbings are frequently a minor and incidental product of cotton mills, a small establishment which buys its yarn and makes tape and webbings exclusively may not properly be classed as such a mill.

These considerations will explain why the use of a considerable amount of raw cotton and the operation of a certain number of cotton spindles are reported in a class of mills which, as a rule, do not spin their own yarn. They will also indicate that neither do the following tables disclose the entire product of the articles included under the designation of cotton small wares, nor do all the products of the mills here reported fall properly under that designation. But a fairly accurate statement can be deduced from a comparison with the reports of other textile industries.

Table 25 presents the leading statistics of cotton small wares for 1900.

TABLE 25.—COTTON SMALL WARES: SUMMARY, 1900.

Number of establishments.....	82
Capital.....	\$6,897,385
Salaried officials, clerks, etc., number.....	189
Salaries.....	\$226,625
Wage-earners, average number.....	4,932
Total wages.....	\$1,563,442
Men, 16 years and over.....	1,367
Wages.....	\$671,516
Women, 16 years and over.....	3,173
Wages.....	\$828,732
Children, under 16 years.....	892
Wages.....	\$68,194
Miscellaneous expenses.....	\$462,534
Cost of materials used.....	\$3,110,187
Value of products.....	\$6,394,164
Active spindles, number.....	42,600
Looms, number.....	5,070
Cotton consumed, bales.....	7,213
Cotton consumed, pounds.....	3,640,878

The geographical distribution of the establishments reporting is as follows: New England states, 32; Middle states, 47; Georgia, 1; Ohio, 1; Indiana, 1. The several industries are of a class which tends to spring up within cities or in their suburbs, and a large proportion of those here reported are in, or in the immediate vicinity of, New York, Philadelphia, Boston, and Providence. They are for the most part small establishments. The average capital indicated is something less than \$80,000. There are, however, some large establishments in Rhode Island. The combined capital of three of them is nearly \$2,000,000, which is almost one-third of the amount reported for the whole country. The elimination of the returns of these three mills would bring the average capital down to about \$56,000. The average number of hands employed in each establishment was 60; outside of Rhode Island, it was but 41. An inspection of the average number employed during each month indicates great steadiness of employment, the slight falling off during the summer months being no greater than is easily explained by the practice of allowing employees to take a vacation.

The chief materials used are shown by the following statement:

MATERIALS.	Pounds.	Cost.
Raw cotton.....	3,640,878	\$264,541
Cotton yarn.....	10,860,648	1,873,032
Woolen yarn.....	274,351	91,251
Worsted yarn.....	47,308	33,414
Silk yarn.....	43,709	131,296
Spun-silk yarn.....	9,852	25,394
Other yarn.....	718,444	139,606
Raw cotton and yarns, total.....	15,595,190	2,561,594
All other materials.....		548,543
Total cost.....		3,110,137

Ninety-three per cent in weight and 83 per cent in value of the raw or spun fiber used was cotton, but in the aggregate not a little of the product was mixed as to material.

A classification of products can not be made. Manufacturers were not asked to report with exactness the specific character of their goods, and indeed, the variety and the absence of standard units of quantity would have rendered such specification valueless. Nevertheless, from the total value of products reported, \$6,394,164, the following items should be subtracted as not coming properly under the classification of cotton small wares: Upholstery goods, \$35,000; yarns for sale, \$27,403; sewing cotton, \$83,453; and twine, \$71,465—a total of \$217,321. On the other hand, in order to obtain the actual total of cotton small wares produced in all the mills of the country, and not merely of these here reported, it is necessary to add to the remainder the sum of \$328,801, value of tape and webbings made in cotton mills, and a large but unknown sum out of the item of more than \$5,000,000 reported in the returns of cotton manufacturing proper, under the head of "All other products of cotton."

Table 26 presents the detailed statistics for the industry for 1900.

COTTON MANUFACTURES.

TABLE 26.—COTTON SMALL WARES, BY STATES: 1900.

	United States.	Massachu- setts.	New Jersey.	New York.	Pennsyl- vania.	Rhode Island.	All other states. ¹
Number of establishments.....	82	14	5	18	24	16	5
Character of organization:							
Individual.....	30	5	2	10	6	5	2
Firm and limited partnership.....	24	3	.....	6	11	3	1
Incorporated company.....	28	6	3	2	7	8	2
Capital:							
Total.....	\$6,397,385	\$528,258	\$409,917	\$550,938	\$1,945,844	\$2,876,699	\$85,729
Land.....	\$408,324	\$19,774	\$7,500	\$12,500	\$107,600	\$259,000	\$2,550
Buildings.....	\$868,123	\$77,363	\$47,300	\$42,000	\$215,500	\$468,875	\$12,100
Machinery, tools, and implements.....	\$2,159,376	\$240,819	\$222,312	\$203,455	\$627,758	\$834,726	\$30,806
Cash and sundries.....	\$2,965,557	\$190,312	\$132,805	\$292,983	\$995,086	\$1,814,193	\$40,273
Proprietors and firm members.....	85	11	1	22	34	13	4
Salaried officials, clerks, etc.:							
Total number.....	189	24	16	42	50	48	9
Total salaries.....	\$226,625	\$82,150	\$18,730	\$36,449	\$64,620	\$67,924	\$6,752
Officers of corporations—							
Number.....	43	12	4	4	9	11	3
Salaries.....	\$82,600	\$19,000	\$7,500	\$5,400	\$23,900	\$24,000	\$2,200
General superintendents, managers, clerks, etc.—							
Total number.....	146	12	12	38	41	37	6
Total salaries.....	\$143,965	\$13,150	\$11,170	\$31,049	\$40,720	\$43,324	\$4,552
Men—							
Number.....	118	10	8	33	31	30	6
Salaries.....	\$129,788	\$12,200	\$8,500	\$28,149	\$36,805	\$39,582	\$4,552
Women—							
Number.....	28	2	4	5	10	7	.....
Salaries.....	\$14,177	\$950	\$2,670	\$2,900	\$8,915	\$8,742	.....
Wage-earners, including pieceworkers, and total wages:							
Greatest number employed at any one time during the year.....	5,504	519	176	684	1,647	2,299	179
Least number employed at any one time during the year.....	4,355	353	156	489	1,211	2,008	78
Average number.....	4,932	430	163	600	1,444	2,209	86
Wages.....	\$1,563,442	\$151,254	\$43,821	\$163,454	\$454,947	\$735,888	\$14,078
Men, 16 years and over—							
Average number.....	1,367	140	53	146	337	650	38
Wages.....	\$671,516	\$68,636	\$22,535	\$70,315	\$149,479	\$351,686	\$8,565
Women, 16 years and over—							
Average number.....	3,173	241	80	447	1,001	1,379	25
Wages.....	\$828,732	\$74,138	\$18,059	\$92,034	\$287,328	\$353,637	\$3,536
Children, under 16 years—							
Average number.....	392	49	27	7	106	180	23
Wages.....	\$68,194	\$8,480	\$3,227	\$1,105	\$18,140	\$30,565	\$1,077
Average number of wage-earners, including pieceworkers, employed during each month:							
Men, 16 years and over—							
January.....	1,393	148	69	148	352	641	45
February.....	1,398	143	59	154	357	640	45
March.....	1,441	148	59	161	375	651	47
April.....	1,439	145	60	167	377	655	35
May.....	1,408	138	59	154	377	649	31
June.....	1,280	128	44	118	315	637	38
July.....	1,249	123	35	132	272	644	48
August.....	1,270	132	59	137	271	647	24
September.....	1,345	148	58	143	309	652	35
October.....	1,384	144	58	150	334	660	38
November.....	1,390	141	60	145	351	653	40
December.....	1,407	140	59	144	354	671	39
Women, 16 years and over—							
January.....	3,203	239	82	465	1,021	1,366	29
February.....	3,191	226	82	467	1,021	1,366	29
March.....	3,229	253	85	469	1,025	1,368	29
April.....	3,144	247	82	465	945	1,380	25
May.....	3,124	230	82	439	945	1,393	26
June.....	2,979	232	66	374	899	1,382	26
July.....	3,075	223	66	419	969	1,378	20
August.....	3,114	232	80	426	982	1,379	15
September.....	3,216	251	84	454	1,021	1,384	22
October.....	3,261	249	84	467	1,058	1,384	24
November.....	3,274	250	86	456	1,073	1,384	25
December.....	3,266	252	81	462	1,063	1,384	24
Children, under 16 years—							
January.....	410	66	29	7	112	169	27
February.....	386	49	29	7	111	163	27
March.....	409	51	29	8	120	174	27
April.....	401	49	29	8	122	173	20
May.....	392	39	29	6	115	180	23
June.....	372	35	19	4	110	180	24
July.....	371	41	18	7	103	181	21
August.....	371	42	29	8	100	181	11
September.....	386	58	29	8	86	184	21
October.....	391	54	29	8	93	184	23
November.....	414	57	29	9	98	194	27
December.....	401	52	29	8	97	192	23
Skilled operatives by classes, average number:							
Spinners, mule—							
Men, 16 years and over.....	11	.....	.....	7	.....	2	2
Women, 16 years and over.....	11	.....	.....	11	.....	.....	.....
Children, under 16 years.....	4	.....	.....	.....	.....	4	.....
Spinners, frame—							
Men, 16 years and over.....	89	.....	20	7	4	7	1
Women, 16 years and over.....	117	.....	20	14	23	60	.....
Children, under 16 years.....	25	.....	12	.....	.....	6	7
Weavers—							
Men, 16 years and over.....	430	20	13	68	200	129	5
Women, 16 years and over.....	1,136	122	5	63	666	278	2
Machinery:							
Producing spindles, not including twisting and doubling spindles, number—							
Mule.....	4,300	.....	.....	.....	.....	3,400	900
Frame.....	33,900	.....	.....	.....	.....	36,500	1,800
Looms, number—							
On plain cloths—							
Less than 28 inches wide.....	10	.....	.....	10	.....	.....	.....
From 28 to 32 inches wide.....	88	.....	.....	.....	38	.....	.....
36 inches wide and over.....	47	.....	.....	6	41	.....	.....
On fancy weaves.....	124	.....	.....	103	21	.....	.....

¹ Includes establishments distributed as follows: Connecticut, 2; Georgia, 1; Indiana, 1; Ohio, 1.

TABLE 26.—COTTON SMALL WARES, BY STATES: 1900—Continued.

	United States.	Massachu- setts.	New Jersey.	New York.	Pennsyl- vania.	Rhode Island.	All other states. ¹
Machinery—Continued.							
Looms, number—Continued.							
On tapes and other narrow goods	2,202	282	8	66	1,173	608	5
On bags and other special fabrics	2,649	20	42	7	411	2,158	11
Miscellaneous expenses:							
Total	\$462,534	\$31,754	\$25,265	\$34,497	\$205,117	\$155,731	\$10,170
Rent of works	\$51,543	\$5,362	\$1,000	\$15,240	\$22,179	\$6,612	\$1,150
Taxes, not including internal revenue	\$25,931	\$4,515	\$1,086	\$905	\$4,222	\$14,818	\$385
Rent of offices, interest, insurance, and all sundry expenses not hitherto included	\$275,621	\$21,877	\$17,954	\$15,152	\$88,306	\$123,697	\$8,635
Contract work	\$109,439		\$5,225	\$3,200	\$90,410		
Materials used:							
Total cost	\$3,110,137	\$321,007	\$230,892	\$460,876	\$938,058	\$1,096,455	\$62,849
Cotton—							
Domestics, other than sea-island, bales	7,213	200				6,718	295
Pounds	3,640,878	100,189				3,402,898	137,791
Cost	\$264,541	\$6,718				\$247,489	\$10,334
Yarns not made in mill—							
Cotton, pounds	10,860,648	1,767,690	1,126,016	1,014,020	3,632,287	2,916,843	408,792
Cost	\$1,873,032	\$255,157	\$158,360	\$304,778	\$595,864	\$515,415	\$43,458
Woolen, pounds	274,351		421	40,190	233,000		
Cost	\$91,251		\$346	\$37,875	\$52,660	\$370	
Worsted, pounds	47,308	250		18,700	25,916	1,675	707
Cost	\$33,414	\$150		\$11,875	\$19,962	\$1,340	\$587
Silk, pounds	43,709		400	4,771	22,410		
Cost	\$134,296		\$1,700	\$20,187	\$100,841	\$11,568	
Spun silk, pounds	9,352			708			
Cost	\$25,394			\$3,010	\$22,384		
Other yarns, pounds	718,444	1,042	302,625	96,660	165,727	152,390	
Cost	\$139,666	\$407	\$21,633	\$15,170	\$38,858	\$63,598	
Waste of other mills, pounds	399,500	6,500			8,000		390,000
Cost	\$2,310	\$390			\$750		\$1,170
Oil, gallons	19,458	2,157	150	841	2,570	12,515	1,225
Cost	\$3,935	\$425	\$58	\$173	\$698	\$2,351	\$230
Starch, pounds	144,480	12,355			14,000	113,075	5,000
Cost	\$3,908	\$498			\$400	\$2,890	\$125
Chemicals and dye stuffs	\$46,339	\$1,172	\$3,000		\$1,228	\$40,689	\$250
Fuel	\$69,578	\$6,690	\$3,504	\$1,777	\$11,502	\$44,670	\$1,495
Rent of power and heat	\$23,381	\$3,510	\$1,200	\$3,749	\$11,296	\$3,626	
Mill supplies	\$101,576	\$18,061	\$2,370	\$2,298	\$17,070	\$60,031	\$346
All other materials	\$234,852	\$26,543	\$37,307	\$56,372	\$60,138	\$101,430	\$2,892
Freight	\$12,864	\$1,291	\$1,414	\$4,112	\$4,407	\$88	\$1,552
Products:							
Total value	\$6,394,164	\$646,848	\$390,477	\$340,017	\$2,026,227	\$2,379,500	\$111,095
Upholstery goods—							
Tapestries, piece goods, and curtains, square yards	35,000			35,000			
Value	\$35,000			\$35,000			
Tape and webbing, value	\$2,192,601	\$215,336		\$91,000	\$907,516	\$963,249	\$15,500
Yarns for sale, pounds	116,609					116,609	
Value	\$27,403					\$27,403	
Sewing cotton, pounds	165,996		74,000			91,996	
Value	\$63,453		\$37,000			\$46,453	
Twine, pounds	510,468						510,468
Value	\$71,465						\$71,465
Waste for sale, pounds	761,857	340,379	5,000		300	396,178	20,000
Value	\$11,336	\$4,027	\$75		\$105	\$6,829	\$300
Other products of cotton	\$2,711,268	\$345,905	\$330,402	\$105,254	\$628,771	\$1,282,946	\$17,990
All other products	\$1,261,638	\$31,580	\$23,000	\$608,763	\$489,835	\$52,620	\$5,840
Goods exported during the year ending June 30, 1900	\$23,447	\$300			\$8,292	\$13,985	
Weight of products, pounds:							
Piece goods	735,154	241,454			208,700	235,000	
Yarns spun and not woven in the mill	168,005					168,005	
Other products	10,373,360	1,021,560	1,153,330	1,171,244	2,691,749	3,560,771	775,206
Dyeing and mercerizing cloth and yarn in cotton mills:							
Dyeing—							
Yarn, pounds	1,607,271		485,000			1,122,271	
Additional value given by dyeing	\$107,689		\$58,000			\$49,689	
Mercerizing—							
Yarn, pounds	10,000					10,000	
Additional value given by mercerizing	\$1,000					\$1,000	
Comparison of products:							
Number of establishments reporting for both years	54	10	3	9	17	10	5
Value for census year	\$4,914,272	\$552,141	\$165,283	\$585,500	\$1,559,062	\$1,941,191	\$111,095
Value for preceding business year	\$4,095,927	\$484,312	\$129,560	\$426,700	\$1,267,143	\$1,708,859	\$79,353
Power:							
Number of establishments reporting	80	13	5	18	24	16	4
Total horsepower	6,221	800	264	290	974	3,553	340
Owned—							
Engines—							
Steam, number	43	6	3	4	14	18	3
Horsepower	4,425	495	254	120	803	2,623	190
Gas or gasoline, number	4	1		2			
Horsepower	46	36	6	4			
Water wheels, number	19	5		2		9	3
Horsepower	1,060	240		36		634	150
Electric motors, number	5					4	
Horsepower	245					240	
Other power, horsepower	10					10	
Rented—							
Electric, horsepower	159	63		76	20		
Other kind, horsepower	276	26	4	54	146	46	
Furnished to other establishments, horsepower	40	15			5	20	
Establishments classified by number of persons employed, not including proprietors and firm members:							
Total number of establishments:							
Under 5	82	14	5	18	24	16	5
5 to 20	11	5		2	1	1	2
21 to 50	27	1	2	7	9	7	1
51 to 100	10	2	1	3	3	1	
101 to 250	21	6	2	5	6	1	1
251 to 500	8				4	3	1
501 to 1,000	4			1	1	2	
	1					1	

¹ Includes establishments distributed as follows: Connecticut, 2; Georgia, 1; Indiana, 1; Ohio, 1.