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FLAX, HEMP, AND JUTE PRODUCTS.

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# FLAX, HEMP, AND JUTE PRODUCTS.

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The industries which make use of the three classes of vegetable fibers, flax, hemp, and jute, are closely allied, in that most of them employ more than one of these materials. For example, there is a large consumption of hemp both by jute manufacturers and by those classed as makers of linen goods; and there is a consumption of all three fibers by cordage and twine establishments. If it were possible, it would be more scientific to classify the several industries by the character of the goods produced, but the variety and diversity of products are so great that it is impossible to do so. The plan here adopted is to group all the industries reported at the Eleventh Census under the separate heads of cordage and twine, jute and jute goods, linen goods, and linen thread, in one general survey, and to bring the facts relating to each branch into view by separate treatment.

Table 1 is a comparative summary of the statistics of the industry as a whole in 1890 and 1900.

TABLE 1.—FLAX, HEMP, AND JUTE PRODUCTS; COMPARATIVE SUMMARY, 1890 AND 1900.

	1900	1890
Number of establishments .....	141	162
Capital .....	\$41,991,762	\$27,731,649
Salaried officials, clerks, etc., number .....	641	1,458
Salaries .....	\$957,190	\$869,170
Wage-earners, average number .....	20,903	15,519
Total wages .....	\$6,381,741	\$4,872,889
Men, 16 years and over .....	9,996	7,367
Wages .....	\$3,824,555	\$2,952,270
Women, 16 years and over .....	8,648	6,923
Wages .....	\$2,174,152	\$1,733,289
Children, under 16 years .....	2,259	1,229
Wages .....	\$333,034	\$186,330
Miscellaneous expenses .....	\$2,678,286	\$1,481,932
Cost of materials used .....	\$32,197,885	\$26,148,344
Value of products .....	\$47,601,607	\$37,318,021

<sup>1</sup>Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this table. (See Table 14.)

The only inference that may fairly be drawn from Table 1 is that, upon the whole, there has been an increase in these industries. It would be a statistical absurdity to place reliance upon the percentages of increase of masses, which include things widely different in their nature, and sums made up of great numbers and small.

Table 2 is a summary of the industry by states for 1900.

TABLE 2.—FLAX, HEMP, AND JUTE PRODUCTS; SUMMARY BY STATES: 1900.

	United States.	Alabama.	Connecticut.	Kentucky.	Massachusetts.	New Jersey.
Number of establishments .....	141	4	8	6	23	6
Capital .....	\$41,991,762	\$298,448	\$297,902	\$459,295	\$10,223,490	\$3,413,163
Salaried officials, clerks, etc., number .....	641	10	5	23	136	57
Salaries .....	\$957,190	\$10,930	\$3,500	\$26,024	\$203,943	\$80,551
Wage-earners, average number .....	20,903	282	205	492	4,693	2,127
Total wages .....	\$6,381,741	\$47,043	\$69,514	\$149,937	\$1,562,862	\$624,988
Miscellaneous expenses .....	\$2,678,286	\$14,054	\$6,443	\$39,847	\$601,542	\$223,118
Cost of materials used .....	\$32,197,885	\$160,145	\$196,332	\$341,515	\$7,539,433	\$1,760,426
Value of products .....	\$47,601,607	\$253,560	\$312,446	\$602,701	\$11,388,938	\$2,955,844

	New York.	Ohio.	Pennsylvania.	Rhode Island.	Wisconsin.	All other states. <sup>1</sup>
Number of establishments .....	22	9	21	5	5	27
Capital .....	\$10,811,768	\$2,147,677	\$6,162,609	\$95,947	\$213,565	\$8,367,938
Salaried officials, clerks, etc., number .....	148	47	90	4	11	110
Salaries .....	\$306,331	\$54,205	\$103,788	\$2,670	\$8,840	\$156,958
Wage-earners, average number .....	5,450	1,052	2,683	84	128	3,647
Total wages .....	\$1,713,614	\$317,909	\$761,582	\$22,175	\$35,085	\$1,026,402
Miscellaneous expenses .....	\$782,719	\$96,471	\$147,126	\$8,052	\$7,574	\$750,740
Cost of materials used .....	\$7,616,240	\$2,325,907	\$5,448,323	\$63,954	\$109,016	\$6,730,594
Value of products .....	\$11,674,669	\$2,957,674	\$7,256,548	\$108,715	\$185,166	\$9,905,351

<sup>1</sup>Includes states having less than 8 establishments, in order that the operations of individual establishments may not be disclosed. These establishments are distributed as follows: Arkansas, 1; California, 2; Delaware, 1; Georgia, 1; Illinois, 2; Indiana, 1; Iowa, 1; Kansas, 1; Maine, 2; Maryland, 1; Michigan, 1; Minnesota, 1; Mississippi, 1; Missouri, 2; New Hampshire, 1; North Carolina, 2; Oregon, 1; South Carolina, 1; Tennessee, 2; Texas, 2.

Tables 3 and 4 present, in accordance with trade classifications, the several fiber materials entering into the manufacture of flax, hemp, and jute goods, both the quantity and the cost, respectively; also the quantity and value of the goods produced therefrom.

TABLE 3.—FLAX, HEMP, AND JUTE PRODUCTS; KIND, QUANTITY, AND COST OF MATERIALS USED: 1900.

	Pounds.	Cost.
Total .....	545,449,566	\$32,197,885
<b>Fibers:</b>		
<b>Hard—</b>		
<b>Hemp—</b>		
Manilla .....	123,241,820	8,916,493
Sisal .....	146,352,853	8,827,131
New Zealand .....	6,344,371	352,528
<b>Soft—</b>		
<b>Hemp—</b>		
<b>Russian—</b>		
Rough .....	1,175,605	73,165
Tow .....	118,090	5,869
Line .....	349,558	25,063
<b>Italian—</b>		
Rough .....	7,329,346	533,922
Tow .....	305,917	20,969
Line .....	335,858	31,780
<b>American—</b>		
Rough .....	11,497,068	536,076
Tow .....	3,201,011	112,134
Line .....	1,276,262	65,675
<b>Flax—</b>		
<b>European—</b>		
Rough .....	5,580,911	668,446
Tow .....	3,727,163	252,759
Line .....	3,388,641	806,693
<b>Canadian—</b>		
Rough .....	1,972,820	155,751
Tow .....	247,350	18,908
Line .....	131,736	20,643
<b>Domestic—</b>		
Rough .....	700,000	25,750
Tow .....	744,045	66,665
Line .....	487,980	65,247
<b>Jute .....</b>	87,443,201	2,431,429
<b>Jute butts .....</b>	118,806,625	1,795,653
<b>Yarns:</b>		
<b>Flax or hemp—</b>		
<b>Domestic tow—</b>		
Wholly or partly bleached .....	120,320	14,060
Gray .....	48,500	6,860
<b>Domestic line—</b>		
Wholly or partly bleached .....	107,490	45,550
Gray .....	157,778	32,896
<b>Imported tow—</b>		
Wholly or partly bleached .....	37,514	9,681
Gray .....	196,941	35,173
<b>Imported line—</b>		
Wholly or partly bleached .....	1,000	180
Gray .....	108,976	48,747
Linen, unspecified .....	102,022	42,005
Cotton .....	4,973,080	709,889
Jute .....	1,009,651	69,504
Silk .....	4,774	21,414
Spun silk .....	1,100	3,450
Worsted .....	682	308
<b>Cotton:</b>		
Raw (26,540 bales) .....	13,022,755	849,426
Waste .....	798,182	37,692
All other materials .....		4,459,796

TABLE 4.—FLAX, HEMP, AND JUTE PRODUCTS; KIND, QUANTITY, AND VALUE OF PRODUCTS: 1900.

	Quantity.	Value.
Total .....		\$47,601,607
<b>Flax or hemp yarns:</b>		
<b>Tow—</b>		
Dry spun, gray, pounds .....	1,889,528	248,851
Dry spun, bleached, pounds .....	18,871	3,473
Wet spun, gray, pounds .....	6,060,092	804,908
Wet spun, bleached, pounds .....	49,236	11,861
<b>Line—</b>		
Dry spun, gray, pounds .....	218,088	46,500
Dry spun, bleached, pounds .....	23,138	11,078
Wet spun, gray, pounds .....	1,200	800
Jute yarns, pounds .....	54,271,860	3,230,885
<b>Twines for sale:</b>		
All flax, pounds .....	3,845,978	969,469
All hemp, pounds .....	9,055,024	1,019,590
All jute, pounds .....	1,879,127	117,539
Flax or hemp, mixed with jute, pounds .....	12,924,667	1,101,203
Linen thread, pounds .....	4,021,044	2,332,287

TABLE 4.—FLAX, HEMP, AND JUTE PRODUCTS; KIND, QUANTITY, AND VALUE OF PRODUCTS: 1900—Cont'd.

	Quantity.	Value.
<b>Binder twine:</b>		
All manilla, pounds .....	15,261,174	\$1,546,423
Chiefly manilla, pounds .....	24,975,568	2,316,257
All or chiefly sisal, pounds .....	125,372,687	10,322,896
<b>Rope:</b>		
Manilla, pounds .....	83,347,459	8,330,113
Sisal, pounds .....	46,865,604	3,682,679
Jute, pounds .....	10,012,165	463,413
Cotton, pounds .....	1,615,824	247,250
<b>Towels and toweling:</b>		
All linen, square yards .....	4,598,615	471,633
Partly linen, square yards .....	2,051,247	281,258
<b>Other woven fabrics:</b>		
All linen, square yards .....	83,000	9,110
Partly linen, square yards .....	135,000	31,000
<b>Jute burlaps, square yards .....</b>		386,129
<b>Jute carpets and rugs, square yards .....</b>	2,953,658	357,565
<b>Gunny bagging, square yards .....</b>	74,090,760	3,462,479
<b>Other spun or woven goods .....</b>		1,051,669
<b>Cotton:</b>		
Bagging, square yards .....	248,204	21,864
Yarn, pounds .....	946,567	98,928
Twine, pounds .....	8,691,707	1,133,640
Batting, pounds .....	198,000	7,125
Waste, pounds .....	1,264,619	20,146
Other products of cotton .....		715,613
<b>All other products .....</b>		2,744,504

#### CORDAGE AND TWINE.

Three general classes of establishments are included in the following statistics under the head of cordage and twine. The first and smallest, having regard to the items of capital, number of wage-earners, wages, and value of products, consists of those whose chief business is the manufacture of yarn—cotton, for the most part, but also linen and silk—into the finer varieties of twine and into cotton rope; the second, of those which produce binder twine on a large scale; the third, of those which manufacture hempen rope. Since no useful purpose would be served by separating the returns of these several classes they are reported together; but the important facts regarding the several industries, so far as they are distinct, are easily ascertained from the statistics of the quantity and value of the fibers consumed, and of the quantity and value of the several products. At previous censuses no special inquiry was made concerning any of the characteristic features of the industries grouped under this head, and no facts were reported other than those which appear in the following comparative summary:

TABLE 5.—CORDAGE AND TWINE; COMPARATIVE SUMMARY, 1880 TO 1900.

	1900	1890	1880
Number of establishments .....	105	150	165
Capital .....	\$29,275,470	\$23,851,838	\$7,140,475
Salaried officials, clerks, etc., number .....	436	1,414	(2)
Salaries .....	\$660,936	\$560,659	(2)
Wage-earners, average number .....	13,114	12,365	5,435
Total wages .....	\$4,113,112	\$3,976,252	\$1,558,676
Men, 16 years and over .....	7,341	6,412	2,926
Wages .....	\$2,751,787	\$2,547,955	(2)
Women, 16 years and over .....	4,797	5,010	1,480
Wages .....	\$1,212,323	\$1,280,065	(2)
Children, under 16 years .....	148,502	148,963	1,029
Wages .....	\$1,716,205	\$1,020,697	(2)
Miscellaneous expenses .....	\$28,632,006	\$24,051,666	(3)
Cost of materials used .....	\$37,849,651	\$33,812,559	\$9,830,261
Value of products .....			\$12,492,171

<sup>1</sup> Includes proprietors and firm members, with their salaries; number only reported in 1900.

<sup>2</sup> Not reported separately.

<sup>3</sup> Not reported.

The tendency toward a consolidation of small establishments and the transaction of business on a larger scale was observable ten years ago, when a decreased number of establishments reported a capital more than threefold greater than in 1880, and a value of products nearly threefold greater. At the census of 1900 the number of separate establishments declined, as compared with 1890, almost one-third, yet the value of products was larger. The statistics of capital are not strictly comparable, since the method of ascertaining the amount has been different at each census. The fact of an increase may be inferred, but the rate of increase can not properly be deduced from the figures given. This is also true respecting the returns of the average number of persons employed, the method of ascertaining such average having been changed. In general, it appears that the number of wage-earners has not increased greatly, if at all, within the last decade.

The kind, quantity, and cost of the materials used in the production of cordage and twine, and the quantity and value of the several products are presented in Tables 6 and 7.

TABLE 6.—CORDAGE AND TWINE; KIND, QUANTITY, AND COST OF MATERIALS USED: 1900.

	Pounds.	Cost.
Total .....	418, 416, 811	\$26, 682, 006
Cotton:		
Raw (26,540 bales).....	18, 022, 755	849, 426
Yarn .....	3, 800, 235	505, 041
Waste .....	798, 182	37, 092
Flax fiber:		
European—		
Rough .....	757, 672	76, 615
Tow .....	845, 959	23, 191
Line .....	54, 592	7, 243
Canadian—		
Rough .....	768, 021	56, 688
Tow .....	49, 457	3, 183
Domestic—		
Rough .....	200, 000	24, 000
Tow .....	703, 943	61, 186
Line .....	487, 980	65, 247
Linen yarn .....	299, 185	83, 525
Hemp:		
Manila .....	123, 241, 820	8, 916, 498
Sisal .....	146, 852, 853	8, 827, 131
New Zealand .....	6, 344, 371	352, 528
Russian—		
Rough .....	1, 175, 605	73, 165
Tow .....	44, 090	1, 969
Line .....	349, 558	25, 063
Italian—		
Rough .....	3, 422, 104	256, 582
Tow .....	305, 917	20, 969
Line .....	296, 920	27, 752
American—		
Rough .....	10, 871, 805	506, 767
Tow .....	3, 011, 004	104, 660
Line .....	1, 258, 266	63, 965
Jute .....	25, 767, 800	786, 967
Butts .....	74, 281, 100	1, 107, 899
Yarns:		
Jute .....	339, 051	21, 070
Silk .....	4, 774	24, 414
Spun .....	1, 100	3, 450
Worsted .....	682	308
All other materials .....		3, 714, 812

TABLE 7.—CORDAGE AND TWINE; KIND, QUANTITY, AND VALUE OF PRODUCTS: 1900.

	Quantity.	Value.
Total .....		\$37, 849, 651
Twine:		
Cotton, pounds .....	8, 691, 707	1, 133, 640
Flax, pounds .....	2, 187, 540	602, 471
Hemp, pounds .....	8, 299, 902	895, 074
Jute, pounds .....	1, 589, 127	111, 230
Flax or hemp, mixed with jute, pounds .....	12, 924, 007	1, 101, 203
Binder twine:		
Manila, pounds .....	15, 261, 174	1, 546, 428
Chiefly manila, pounds .....	24, 975, 568	2, 316, 257
All or chiefly sisal, pounds .....	125, 372, 687	10, 322, 896
Rope:		
Cotton, pounds .....	1, 615, 824	247, 250
Manila, pounds .....	83, 347, 459	8, 330, 113
Sisal, pounds .....	46, 865, 604	3, 682, 670
Jute, pounds .....	6, 717, 317	250, 760
Gunny bagging, square yards .....	41, 310, 695	2, 035, 636
Jute burlap .....		150, 000
Yarn:		
Cotton, pounds .....	946, 567	98, 923
Flax and hemp, tow, pounds .....	2, 652, 955	345, 913
Flax and hemp, line, pounds .....	10, 000	4, 800
Jute, pounds .....	9, 554, 188	621, 687
Linen thread, pounds .....	100, 000	17, 000
Waste, pounds .....	1, 254, 619	20, 146
Battling and wadding, pounds .....	193, 000	7, 125
Other spun or woven goods .....	6, 241, 449	534, 265
All other products, cotton .....		715, 613
All other products .....		2, 758, 537

JUTE AND JUTE GOODS.

The jute manufacture was represented at the Tenth Census by 4 establishments only, having a total capital of \$415,000, and products valued at \$696,982. Seven establishments were reported at the Eleventh Census under the head of jute and jute goods. It is probable, however, that some which were classed as "bagging, flax, hemp, and jute" are, in the reports for 1900, included in the class of jute and jute goods, since it appears that only 2 of the 18 establishments now making returns have come into existence during the decade. Under these circumstances a comparison of the statistics for 1900 with those of former census years would be misleading. The principal facts relating to the industry for 1900 are presented in the following summary:

TABLE 8.—JUTE AND JUTE GOODS: 1900.

Number of establishments .....	18
Capital .....	\$7, 027, 293
Salaries officials, clerks, etc., number .....	88
Salaries .....	\$147, 313
Wage-earners, average number .....	4, 506
Total wages .....	\$1, 181, 790
Men, 16 years and over .....	1, 611
Wages .....	\$579, 877
Women, 16 years and over .....	2, 064
Wages .....	\$480, 732
Children, under 16 years .....	831
Wages .....	\$121, 181
Miscellaneous expenses .....	\$574, 986
Cost of materials used .....	\$3, 015, 862
Value of products .....	\$5, 383, 797

Table 9 shows the kind, quantity, and cost of the materials employed in the manufacture.

TABLE 9.—JUTE AND JUTE GOODS; KIND, QUANTITY, AND COST OF MATERIALS USED: 1900.

	Pounds.	Cost.
Total .....	109,049,701	\$3,015,362
Jute .....	61,603,929	1,642,318
Butts .....	44,525,525	687,754
Yarns .....	670,600	48,494
Hemp:		
Italian .....	1,363,481	83,303
American .....	584,328	27,354
Cotton yarn .....	301,888	33,894
All other materials .....		492,865

Table 10 presents a classification of the principal products of the establishments reporting.

TABLE 10.—JUTE AND JUTE GOODS; KIND, QUANTITY, AND VALUE OF PRODUCTS: 1900.

	Quantity.	Value.
Total .....		\$5,383,797
Jute yarn .....	44,717,672 pounds..	2,609,148
Twine .....	90,000 do.	6,300
Rope .....	4,294,848 do.	212,658
Burlaps .....	4,361,635 square yards..	236,129
Gunny bagging .....	32,780,065 do.	1,426,843
Carpets and rugs .....	2,953,658 do.	357,568
Flax or hemp yarns .....	1,286,155 pounds..	165,788
Other spun or woven goods .....		364,821
All other products .....		4,547

#### LINEN MANUFACTURE.

The report upon the linen industry at the census of 1890 was most meager. Three establishments only producing linen goods were included in the general summary of manufactures; 2 others which made linen thread came under the rule which forbids the separate tabulation of less than 3 establishments, and were placed under "all other industries." Inasmuch as both classes of establishments are reported together in the following tables, the facts relating to the 5 establishments reporting in 1890 are now published for the first time for purposes of comparison.

TABLE 11.—LINEN GOODS; COMPARATIVE SUMMARY: 1890 AND 1900.

	1900.	1890.
Number of establishments .....	18	5
Capital .....	\$5,638,999	\$2,734,130
Salaries .....	117	126
Wage-earners, average number .....	1,941	1,580
Total wages .....	3,283	1,940
Men, 16 years and over .....	\$1,036,839	\$527,572
Wages .....	1,044	648
Women, 16 years and over .....	\$492,891	\$255,409
Wages .....	1,787	1,193
Children, under 16 years .....	\$480,597	\$256,187
Wages .....	452	99
Miscellaneous expenses .....	\$63,351	\$15,976
Cost of materials used .....	\$387,095	\$242,977
Value of products .....	\$2,550,517	\$1,594,769
	\$4,368,159	\$2,880,341

<sup>1</sup>Includes proprietors and firm members, with their salaries; number only reported in 1900.

Inasmuch as the tables deal with so small a number of establishments, many of them still in the period of experiment, no deduction is justified or would be safe, further than that the industry has expanded greatly.

The materials used, consisting of hemp, flax, jute, and cotton, in great variety and in various stages of manufacture, are summarized in Table 12.

TABLE 12.—LINEN GOODS; KIND, QUANTITY, AND COST OF MATERIALS USED: 1900.

	Pounds.	Cost.
Total .....	17,983,084	\$2,550,517
Hemp:		
Russian—		
Tow .....	74,000	3,900
Italian—		
Rough .....	2,543,811	194,037
Line .....	38,938	4,023
American—		
Rough .....	40,875	1,955
Tow .....	190,007	7,474
Line .....	17,996	1,710
Flax:		
European—		
Rough .....	4,823,239	691,831
Tow .....	3,381,201	229,553
Line .....	3,334,049	799,459
Canadian—		
Rough .....	1,204,799	09,633
Tow .....	197,893	15,720
Line .....	131,736	20,613
Domestic—		
Rough .....	500,000	1,750
Tow .....	40,102	2,459
Flax or hemp yarn .....	532,006	151,131
Cotton yarn .....	810,957	171,014
Jute .....	71,472	2,141
All other materials .....		232,619

Table 13 shows the kind, quantity, and value of the principal products during the census year of the establishments reporting.

TABLE 13.—LINEN GOODS; KIND, QUANTITY, AND VALUE OF PRODUCTS: 1900.

	Quantity.	Value.
Total .....		\$4,368,159
Flax or hemp yarn, tow .....	4,178,117 pounds..	556,892
Flax or hemp yarn, line .....	232,496 do.	53,073
Twine, all flax .....	1,653,438 do.	306,993
Twine, all hemp .....	765,122 do.	124,516
Linen thread .....	3,921,044 do.	2,315,287
Towels and toweling, all linen .....	4,593,615 square yards..	471,633
Towels and toweling, partly linen .....	2,051,247 do.	281,238
Other woven fabrics, all linen .....	83,000 do.	9,110
Other woven fabrics, partly linen .....	135,000 do.	34,000
Other spun or woven goods .....		132,633
All other products .....		3,234

The linen industry has never obtained a firm foothold in the United States. In colonial times efforts were made to promote the growth of flax, and to introduce the spinning and weaving of the fiber. It was the policy of the mother country to repress manufactures in the colonies, but the production of linen goods was a domestic industry, which England could not and did not try to prevent. The cultivation of flax was undertaken on a small scale, and the spinning wheel and the handloom were the only available machinery for working it into cloth. It is probable that there was in America

scarcely any manufacture of linen for sale. That which was made was a home product intended solely for consumption in the families of the weavers. The factory system had not been generally established even on the other side of the Atlantic. Nevertheless flax was already cultivated on a generous scale in many districts of Ireland, France, Germany, and other countries, and large numbers of persons were employed in preparation of the fiber and manufacture of linen for the market.

It is extremely probable that the desire of the American people to introduce manufactures, thus supplementing their political with industrial and commercial independence, would have led them to engage largely in the production of linen fabrics had not the invention of the cotton gin by Eli Whitney (patented in 1793) placed in their hands a fiber cheaper than flax, more tractable, requiring less care in preparation, more easily spun and woven, superior for many purposes and decidedly inferior for very few. At all events, the effort to introduce the linen manufacture was practically abandoned for the time being, and, until recently, the attempts to establish it in the United States have been spasmodic and unsuccessful. The difficulties in the path of manufacturers are many. There is, to speak broadly, no American production of fiber suitable for spinning. Flax is grown in great quantities, but it is cultivated chiefly for the seed and not for the fiber.

The process of retting involves the expenditure of too much time and labor to be profitable to American farmers. Consequently it is necessary to rely almost wholly upon foreign importations for the raw material. Moreover, the intermediate processes of manufacture, as well as the spinning and weaving of a fiber greatly lacking in elasticity, require so much skill and care that the margin of profit is precarious. And finally, the demand for the finished product is far from being so broad and imperative as is that for articles of cotton,

wool, and silk. Linen is indispensable for fine fabrics for the dining table, for thread and twine where great strength is required, and for the best quality of toweling; but for the thousand and one uses to which ordinary cloth is put, cotton would be generally preferred by consumers, even if the cost were the same.

It will be inferred from these statements that the linen industry in the United States at the present time is not extensive, nor does the prospect seem bright. Nevertheless, measured by percentages, the increase during the last ten years has been great. There are certain fields which American manufacturers can occupy to advantage. There is a large demand for linen carpet-yarns; our immense shoe manufacturing industry requires a great quantity of linen thread; and the market for towels and toweling is practically unlimited. The first two of these fields our manufacturers have occupied for many years. The third they have entered more generally during the past ten years than ever before. This was rendered possible by a readjustment of tariff rates in the act of 1897. The duty on the yarns required for such branches of the manufacture as Americans now think it expedient to engage in, was reduced to a revenue basis, and the duty on manufactured goods was raised.

The manufacture of linen toweling, which shows the largest extension of any branch of linen manufacture during the decade, is not fully reported in the general tables. Several large cotton manufacturing establishments have engaged in this industry; and although their use of nearly one and a half million pounds of linen yarn is reported among the materials consumed, the schedules issued to them made no provision for a separate report of the character, quantity, or value of their linen products.

Table 14 is a detailed statement of the statistics for flax, hemp, and jute products, by states, for 1900.

TABLE 14.—FLAX, HEMP, AND JUTE PRODUCTS, BY STATES: 1900.

	United States.	Alabama.	Connecticut.	Kentucky.	Massachusetts.	New Jersey.
Number of establishments.....	141	4	8	6	28	6
Character of organization:						
Individual.....	86		7	2	7	
Firm and limited partnership.....	31		2	2	5	
Incorporated company.....	74	4	1	2	16	1
Capital.....						5
Total.....	\$41,991,762	\$298,448	\$297,962	\$459,295	\$10,229,490	\$3,413,168
Land.....	\$2,487,849	\$27,026	\$8,000	\$1,500	\$491,974	\$252,421
Buildings.....	\$5,146,574	\$45,951	\$25,300	\$40,200	\$1,295,786	\$794,320
Machinery, tools, and implements.....	\$9,789,559	\$169,976	\$85,400	\$202,789	\$1,889,725	\$851,805
Cash and sundries.....	\$24,598,280	\$55,495	\$179,262	\$214,806	\$6,598,005	\$1,514,617
Proprietors and firm members.....	100		7	7	16	1
Salaried officials, clerks, etc.:						
Total number.....	641	10	5	23	186	57
Total salaries.....	\$957,190	\$10,980	\$3,500	\$26,024	\$203,943	\$80,551
Officers of corporations—						
Number.....	145	7	2	5	25	5
Salaries.....	\$422,046	\$8,040	\$1,950	\$10,000	\$92,741	\$15,700
General superintendents, managers, clerks, etc.—						
Total number.....	496	8	8	18	111	52
Total salaries.....	\$535,144	\$2,940	\$1,550	\$16,024	\$111,202	\$64,851
Men—						
Number.....	442	8	2	16	95	51
Salaries.....	\$509,158	\$2,940	\$1,050	\$15,244	\$102,630	\$64,212
Women—						
Number.....	54		1	2	16	1
Salaries.....	\$25,936		\$500	\$780	\$8,572	\$639

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TABLE 14.—FLAX, HEMP, AND JUTE PRODUCTS, BY STATES: 1900—Continued.

	United States.	Alabama.	Connecticut.	Kentucky.	Massachusetts.	New Jersey.
Wage-earners, including pieceworkers, and total wages:						
Greatest number employed at any one time during the year.....	24,947	306	274	588	5,195	2,832
Least number employed at any one time during the year.....	17,588	258	251	389	4,075	1,963
Average number.....	20,903	282	265	492	4,693	2,127
Wages.....	\$6,331,741	\$47,648	\$69,544	\$149,937	\$1,562,862	\$924,958
Men, 16 years and over—						
Average number.....	9,996	89	142	285	2,649	656
Wages.....	\$8,324,555	\$25,771	\$43,016	\$109,746	\$1,020,085	\$295,008
Women, 16 years and over—						
Average number.....	8,648	105	120	162	1,770	1,009
Wages.....	\$2,174,152	\$13,625	\$25,988	\$84,176	\$490,991	\$271,744
Children, under 16 years—						
Average number.....	2,259	88	3	45	274	462
Wages.....	\$893,084	\$8,347	\$540	\$6,015	\$51,786	\$58,236
Miscellaneous expenses:						
Total.....	\$2,678,286	\$14,054	\$6,443	\$39,847	\$601,542	\$223,118
Rent of works.....	\$158,753	\$775	\$387	\$3,530	\$7,170	\$600
Taxes, not including internal revenue.....	\$222,670	\$1,749	\$1,782	\$1,633	\$85,334	\$34,859
Rent of offices, insurance, interest, and all sundry expenses not hitherto included.....	\$2,270,745	\$12,130	\$4,274	\$34,684	\$506,894	\$187,919
Contract work.....	\$26,118				\$2,154	
Materials used:						
Total cost.....	\$32,197,895	\$166,145	\$196,332	\$341,515	\$7,539,438	\$1,760,426
Principal materials.....	\$27,746,312	\$151,668	\$179,168	\$309,278	\$6,782,696	\$1,616,751
Fuel.....	\$390,746	\$6,557	\$2,212	\$6,145	\$106,936	\$23,645
Rent of power and heat.....	\$19,848	\$506			\$4,965	\$1,663
Mill supplies.....	\$736,820	\$3,877	\$6,208	\$7,169	\$278,951	\$51,756
All other materials.....	\$3,001,923	\$2,309	\$209	\$10,190	\$348,642	\$45,219
Freight.....	\$302,741	\$2,743	\$8,229	\$8,733	\$22,193	\$10,489
Products:						
Total value.....	\$47,601,607	\$258,560	\$312,446	\$602,701	\$11,388,933	\$2,955,844

	New York.	Ohio.	Pennsylvania.	Rhode Island.	Wisconsin.	All other states. <sup>1</sup>
Number of establishments.....	22	9	21	5	5	27
Character of organization:						
Individual.....	3	1	8	3		5
Firm and limited partnership.....	5	1	1	1	3	5
Incorporated company.....	14	7	5	1	2	17
Capital:						
Total.....	\$10,311,768	\$2,147,677	\$6,162,509	\$95,947	\$213,555	\$8,367,038
Land.....	\$422,704	\$65,415	\$441,671	\$9,000	\$25,000	\$718,638
Buildings.....	\$925,858	\$272,751	\$636,950	\$15,000	\$26,870	\$1,064,538
Machinery, tools, and implements.....	\$2,784,491	\$624,270	\$1,238,540	\$39,226	\$102,810	\$1,906,027
Cash and sundries.....	\$6,228,715	\$1,185,241	\$3,850,948	\$38,721	\$69,885	\$1,678,655
Proprietors and firm members:						
Total number.....	15	2	25	7	6	14
Total salaries.....	148	47	90	4	11	110
Officers of corporations—	\$306,331	\$54,205	\$103,788	\$2,670	\$8,840	\$156,358
Number.....	30	11	8		4	48
Salaries.....	\$156,755	\$17,250	\$31,700		\$2,760	\$85,150
General superintendents, managers, clerks, etc.—						
Total number.....	118	36	82	4	7	62
Total salaries.....	\$149,576	\$36,955	\$72,038	\$2,670	\$6,080	\$71,208
Men—						
Number.....	104	32	72	4	7	56
Salaries.....	\$142,627	\$34,999	\$67,960	\$2,670	\$6,080	\$68,746
Women—						
Number.....	14	4	10			6
Salaries.....	\$6,949	\$1,956	\$4,128			\$2,462
Wage-earners, including pieceworkers, and total wages:						
Greatest number employed at any one time during the year.....	6,439	1,574	2,019	112	142	5,066
Least number employed at any one time during the year.....	4,428	764	2,331	67	115	2,957
Average number.....	5,460	1,052	2,683	84	128	3,647
Wages.....	\$1,718,614	\$317,909	\$761,582	\$22,175	\$35,085	\$1,026,402
Men, 16 years and over—						
Average number.....	2,657	725	1,089	38	46	1,620
Wages.....	\$1,039,333	\$255,095	\$449,927	\$11,694	\$17,291	\$557,589
Women, 16 years and over—						
Average number.....	2,312	315	1,083	46	61	1,665
Wages.....	\$592,893	\$60,766	\$238,628	\$10,481	\$15,779	\$419,181
Children, under 16 years—						
Average number.....	481	12	511		21	302
Wages.....	\$81,388	\$2,048	\$73,027		\$2,015	\$49,632
Miscellaneous expenses:						
Total.....	\$782,719	\$96,471	\$147,126	\$8,052	\$7,574	\$750,740
Rent of works.....	\$125,234	\$1,151	\$2,600	\$2,150	\$44	\$15,112
Taxes, not including internal revenue.....	\$40,915	\$10,174	\$7,526	\$246	\$1,103	\$37,639
Rent of offices, insurance, interest, and all sundry expenses not hitherto included.....	\$616,570	\$85,146	\$114,608	\$4,039	\$6,427	\$697,989
Contract work.....			\$22,397	\$1,567		
Materials used:						
Total cost.....	\$7,516,240	\$2,325,907	\$5,448,323	\$63,954	\$109,016	\$6,730,591
Principal materials.....	\$6,781,255	\$2,170,059	\$3,298,323	\$57,423	\$103,050	\$6,236,134
Fuel.....	\$116,905	\$20,915	\$29,091	\$707	\$2,136	\$71,447
Rent of power and heat.....	\$8,012		\$60			\$887
Mill supplies.....	\$164,676	\$23,709	\$95,079	\$656	\$1,757	\$94,982
All other materials.....	\$412,079	\$46,923	\$1,950,491	\$4,131	\$700	\$186,039
Freight.....	\$33,313	\$59,301	\$74,779	\$287	\$1,373	\$81,301
Products:						
Total value.....	\$11,674,669	\$2,957,674	\$7,256,548	\$108,715	\$185,166	\$9,905,351

<sup>1</sup> Includes states having less than 3 establishments in order that the operations of individual establishments may not be disclosed. These establishments are distributed as follows: Arkansas, 1; California, 2; Delaware, 1; Georgia, 1; Illinois, 2; Indiana, 1; Iowa, 1; Kansas, 1; Maine, 2; Maryland, 1; Michigan, 1; Minnesota, 1; Mississippi, 1; Missouri, 1; New Hampshire, 1; North Carolina, 2; Oregon, 1; South Carolina, 1; Tennessee, 2; Texas, 2.

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DYEING AND FINISHING TEXTILES.

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## DYEING AND FINISHING TEXTILES.

By EDWARD STANWOOD, *Expert Special Agent.*

Dyeing and finishing textiles is carried on as an industry in independent establishments, and also as one of the processes in a considerable number of the factories engaged in cotton, wool, and silk manufactures. The various statistics relating to capital, employees, wages, miscellaneous expenses, cost of materials, and value of products, as to the independent establishments, must be given in order to complete the information regarding the textile industry as a whole. In the presentation of these statistics the rule adopted at all previous censuses, except one, has been followed. Inasmuch as all the material operated upon—yarn, cloth, hosiery, etc.—was reported by other textile establishments as products of manufacture, a return by the establishments exclusively engaged in dyeing and finishing textiles of the total value of the articles after the dyeing and finishing would have resulted in great duplication. For this reason the yarn and fabrics have been totally excluded from the statement of materials, and only the value added to the materials by the processes have been given as the value of the products of this particular branch of the textile industry.

The magnitude of the business of dyeing and finishing can be ascertained only by combining the statistics of independent establishments with similar information as to this work in other branches of the textile industry. Outside of the independent establishments, however, the finishing processes are subordinate to the process of manufacture, and the schedules provided for the taking of the textile industry were not sufficiently uniform in the details relating to dyeing and finishing to render a full presentation possible. Thus, the wool schedule calls for the value of chemicals and dye stuffs used in the mills devoted to that industry, but not for the amount of goods operated upon. On the other hand, the silk schedule calls for the amount of goods operated upon, but not for the value of chemicals and dye stuffs used.

The total cost of chemicals and dye stuffs used in all textile establishments in 1890 and 1900 so far as reported was as follows:

	1900	1890
Total .....	\$25,892,578	\$19,686,668
Independent dyeing and finishing establishments..	10,667,621	8,407,698
Other textile establishments.....	14,724,952	11,278,970
Cotton manufactures.....	5,718,107	4,266,778
Wool manufactures <sup>1</sup> .....	7,988,684	5,889,612
Hosiery and knit goods.....	1,029,161	564,053
Silk manufactures <sup>2</sup> .....		558,532

<sup>1</sup> Including woolen goods; worsted goods; carpets and rugs, other than rug felt goods; and wool hats in 1890 and 1900.

<sup>2</sup> Not reported separately in 1900.

The increase in cost of chemicals and dye stuffs for the last decade has been marked; for the independent establishments from \$8,407,693 in 1890 to \$10,667,621 in 1900, an increase of \$2,259,928, or 26.9 per cent; and in cotton and wool manufactures, including hosiery and knit goods, from \$10,720,438 to \$14,724,952, an increase of \$4,004,514, or 37.4 per cent.

The large decrease in the price of merchandise in the decade is to be taken into account in examining the foregoing table. The quantity of chemicals used and the quantity of yarn and cloth operated upon increased in a much greater ratio than the value represented in products. In the case of some articles the increase can be shown. For example, the amount of cotton piece goods printed in 1890 was 722,257,451 square yards, of which 579,667,368 square yards were printed in independent establishments and 142,590,083 in cotton mills. In 1900 the aggregate was 1,233,191,438 square yards, an increase of 70.7 per cent. Of this, 940,450,338 square yards were printed by independent establishments and 292,741,100 square yards in cotton

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mills, an increase of 62.2 per cent and 105.3 per cent, respectively.

The facts relating to the dyeing and finishing of cotton goods and silk goods are set forth in the reports on those branches of the textile industry. It has been explained that those relating to the wool industry are

not ascertainable in a way to throw much light upon the subject. The following tables and remarks apply to the independent establishments only.

Table 1 presents a comparative summary of the industry of dyeing and finishing textiles during the last half century.

TABLE 1.—COMPARATIVE SUMMARY, 1850 TO 1900, WITH PER CENT OF INCREASE FOR EACH DECADE.

	DATE OF CENSUS.						PER CENT OF INCREASE.				
	1900	1890	1880	1870	1860	1850	1890 to 1900	1880 to 1890	1870 to 1880	1860 to 1870	1850 to 1860
Number of establishments .....	298	248	191	42	29	42	20.2	29.8	354.8	44.8	131.0
Capital .....	\$60,643,104	\$38,450,800	\$26,223,981	\$13,367,553	\$3,517,250	\$3,922,800	57.7	46.6	96.2	280.1	110.3
Salaries of officials, clerks, etc., number .....	1,818	2,666	(3)	(3)	(3)	(3)	97.9	.....	.....	.....	.....
Salaries .....	\$2,267,128	\$303,291	(3)	(3)	(3)	(3)	181.5	.....	.....	.....	.....
Wage-earners, average number .....	29,776	19,601	16,698	8,894	4,005	4,080	51.9	17.4	87.7	122.1	11.8
Total wages .....	\$12,726,316	\$8,911,720	\$6,474,364	\$6,438,089	\$1,088,296	\$1,088,904	42.8	37.6	88.3	215.9	16.1
Men, 16 years and over .....	24,419	16,510	12,788	6,092	3,433	3,351	47.9	29.1	109.9	77.5	2.4
Wages .....	\$11,861,194	\$8,147,844	(3)	(3)	(3)	(3)	39.4	.....	.....	.....	.....
Women, 16 years and over .....	4,253	2,298	2,088	1,393	572	720	85.1	12.8	46.3	143.5	121.5
Wages .....	\$1,166,972	\$620,390	(3)	(3)	(3)	(3)	88.1	.....	.....	.....	.....
Children, under 16 years .....	1,104	793	1,872	1,409	(3)	(3)	39.2	157.6	32.9	.....	.....
Wages .....	\$198,150	\$143,486	(3)	(3)	(3)	(3)	38.1	.....	.....	.....	.....
Miscellaneous expenses .....	\$4,137,947	\$3,131,081	(4)	(4)	(4)	(4)	32.2	.....	.....	.....	.....
Cost of materials used .....	\$17,958,187	\$12,385,220	\$13,664,295	\$46,373,358	\$3,884,815	\$10,462,044	45.0	19.4	170.5	1093.7	162.9
Value of products .....	\$44,963,331	\$28,900,560	\$32,297,420	\$54,446,044	\$7,971,064	\$13,680,805	55.6	110.5	140.7	583.0	141.7

<sup>1</sup> Decrease.

<sup>2</sup> Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this table. (See Table 5.)

<sup>3</sup> Not reported separately.

<sup>4</sup> Not reported.

The statements for 1850 and 1860 included only the statistics of calico printing and satinet printing, but it may be fairly assumed that these processes were substantially the only ones which came properly under the head of dyeing and finishing that were then performed on a large scale in the United States. During the last half century the amount of capital employed in the industry has increased more than fifteenfold. It nearly doubled between 1870 and 1880, increased 46.6 per cent between 1880 and 1890, and 57.7 per cent during the last decade. The number of wage-earners increased at a smaller ratio, but the increase from 1890 to 1900 was substantially equal to the increase of capital.

The statements of materials used and value of products are necessarily misleading in one respect, namely, that in 1870 the total value of the yarn and cloth operated upon were reported as cost of materials, and the value of the goods after the operations were performed was reported as the total value. This accounts for the inconsistency in the cost of materials and value of products shown for 1870 compared with similar items at other censuses.

Table 2 exhibits the general facts relating to the industry in detail as ascertained at the censuses of 1890 and 1900.

DYEING AND FINISHING TEXTILES.

TABLE 2.—COMPARATIVE SUMMARY BY STATES: 1890 AND 1900.

STATES.	Year.	Number of establishments.	CAPITAL.					SALARIED OFFICIALS, CLERKS, ETC.		AVERAGE NUMBER WAGE-EARNERS AND TOTAL WAGES.				
			Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	Number.	Salaries.	Average number.	Total wages.	Men, 16 years and over.	Women, 16 years and over.	Children under 16 years.
United States..	1900	298	\$60,648,104	\$5,304,940	\$12,251,886	\$17,750,574	\$25,835,695	1,318	\$2,267,128	29,776	\$12,726,316	24,419	4,253	1,104
	1890	248	35,450,800	2,579,114	7,596,641	9,703,284	18,571,761	666	895,291	19,601	8,911,720	16,510	2,298	793
Connecticut .....	1900	5	8,243,744	482,100	1,004,388	929,262	827,994	39	100,884	1,300	578,756	1,015	238	47
	1890	5	775,352	58,700	331,184	231,212	154,256	12	14,250	477	237,102	390	85	2
Illinois.....	1900	4	113,694	7,500	42,000	50,800	13,394	7	6,700	84	27,878	69	10	5
	1890	3	26,500	3,500	6,000	11,900	6,000	5	2,532	16	7,892	13	3	.....
Kentucky.....	1900	3	161,239	7,800	28,922	55,455	69,062	7	9,090	116	45,225	83	25	8
	1890	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Massachusetts..	1900	37	15,206,200	1,161,593	1,960,972	2,499,388	9,584,337	239	547,862	4,678	2,081,015	3,810	735	97
	1890	33	11,996,154	673,931	2,010,687	2,502,895	6,808,641	82	99,320	4,270	1,809,787	3,527	539	204
New Hampshire	1900	5	388,704	61,000	153,000	173,500	496,204	21	23,900	1,028	451,060	789	239	.....
	1890	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Jersey.....	1900	59	11,600,695	651,481	2,100,396	4,624,059	4,224,759	353	614,910	7,074	3,003,491	6,120	786	108
	1890	41	5,197,403	333,936	579,577	1,782,696	2,201,194	129	179,425	3,785	1,878,137	3,385	310	54
New York.....	1900	42	6,230,657	339,909	1,335,748	2,097,541	2,457,459	107	134,345	3,117	1,424,578	2,395	686	86
	1890	49	4,963,095	366,300	721,700	1,137,566	2,737,529	114	137,473	2,725	1,344,250	2,174	415	136
North Carolina..	1900	5	293,831	4,700	33,800	184,022	71,809	8	6,650	184	45,340	142	42	.....
	1890	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pennsylvania....	1900	105	7,679,906	733,612	1,290,133	2,363,629	3,287,532	216	260,277	4,716	2,065,752	4,013	946	357
	1890	83	6,296,340	593,647	1,354,200	1,839,121	2,504,372	190	207,257	3,355	1,596,565	2,964	212	179
Rhode Island...	1900	24	12,853,123	1,572,306	3,755,314	3,862,803	3,652,700	256	449,996	5,942	2,474,042	4,644	1,030	250
	1890	22	5,739,692	432,000	1,332,398	1,498,323	1,976,371	101	130,059	3,619	1,462,906	2,904	570	145
All other states <sup>3</sup> .	1900	9	2,376,311	283,038	537,213	905,115	650,945	65	112,514	1,537	528,279	1,393	157	77
	1890	12	3,456,264	111,500	460,895	700,471	2,183,398	33	34,975	1,404	574,991	1,203	128	73

STATES.	Year.	Number of establishments.	Miscellaneous expenses.	COST OF MATERIALS USED.						Value of products.	
				Total.	Chemicals and dyestuffs.	Starch.	Soap.	Fuel.	Rent of power and heat.		All other materials.
United States ..	1900	298	\$4,137,947	\$17,958,137	\$10,667,621	\$374,643	\$563,809	\$2,165,091	\$53,730	\$3,633,243	\$44,063,331
	1890	248	3,131,081	12,385,220	8,407,693	660,577	279,272	1,647,848	23,138	1,366,692	28,900,500
Connecticut.....	1900	5	216,075	907,377	561,619	36,715	17,129	113,780	7,955	170,179	2,269,067
	1890	5	77,336	300,360	114,126	17,315	2,049	58,711	.....	107,659	715,338
Illinois.....	1900	4	5,913	32,523	13,966	500	445	7,546	.....	5,006	86,960
	1890	3	1,426	6,846	4,270	.....	504	1,072	.....	1,000	26,741
Kentucky.....	1900	3	9,702	84,023	71,513	4,162	160	6,300	180	1,703	179,123
	1890	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Massachusetts....	1900	37	866,829	3,110,910	2,031,072	160,016	9,506	893,711	5,512	511,033	8,868,290
	1890	33	869,669	2,801,364	1,950,550	125,288	25,599	404,778	6,413	283,736	6,496,215
New Hampshire..	1900	5	111,478	636,469	309,296	23,646	25,034	74,451	60	203,992	1,328,319
	1890	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Jersey.....	1900	59	309,580	4,513,768	2,755,553	165,728	224,298	411,178	9,497	947,514	10,488,963
	1890	41	752,461	2,711,121	2,068,192	109,466	83,775	239,329	2,500	207,850	6,183,897
New York.....	1900	42	210,395	1,402,373	689,825	63,124	46,131	202,074	8,504	392,655	3,625,882
	1890	49	367,935	1,454,119	889,577	73,836	44,321	216,618	4,775	224,992	3,636,051
North Carolina...	1900	5	13,366	95,210	13,000	14,834	220	10,767	.....	56,889	175,754
	1890	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pennsylvania....	1900	105	556,083	3,174,507	2,038,174	94,373	172,970	342,671	8,772	487,547	7,038,012
	1890	83	419,456	2,395,482	1,808,041	107,269	80,708	284,546	6,250	103,533	5,240,761
Rhode Island.....	1900	24	1,188,065	3,087,781	1,633,059	205,321	62,043	513,837	20	653,496	3,484,878
	1890	22	393,549	1,819,351	1,064,475	129,050	32,205	351,521	1,200	240,900	4,743,561
All other states <sup>3</sup> .	1900	9	200,461	913,196	495,539	106,164	5,868	83,776	13,130	203,669	2,417,187
	1890	12	249,249	396,577	508,462	97,853	10,026	91,278	2,000	186,963	1,858,446

<sup>1</sup> No establishments reported, 1890.  
<sup>2</sup> Included in "all other states," 1890.  
<sup>3</sup> Includes establishments distributed as follows: 1900—Alabama, 1; Delaware, 2; Indiana, 1; Maine, 1; Maryland, 2; Ohio, 1; West Virginia, 1. 1890—Delaware, 1; Iowa, 1; Maine, 1; Maryland, 2; Minnesota, 1; Missouri, 1; New Hampshire, 2; Ohio, 2; West Virginia, 1.

The number of independent establishments increased during the decade from 248 to 298. Of this increase, 22 are credited to Pennsylvania and 18 to New Jersey, and they indicate a great extension of the business of silk dyeing and finishing in the 2 states where the silk industry is most concentrated. The increase in the other items is more nearly equalized among the states owing to the expansion of individual establishments. Thus, in Connecticut the amount of capital reported is more than four times as great in 1900 as in 1890, although the number of establishments is the same. Rhode Island, with only 2 additional establishments, has more than doubled its capital, and Massachusetts, although adding but 4 establishments, has 26.8 per cent greater capital. The same fact appears in the statement of the average number of wage-earners, for although nearly one-half of the increase has taken place in the states of New Jersey and Pennsylvania, there has also been a large increase in the New England states, where the number of establishments has not substantially increased.

Of the total cost of materials used, \$17,958,137, the cost of chemicals and dyestuffs represents a value of \$10,667,621, or about 59.4 per cent of the whole. In 1890 the corresponding percentage was about 67.9 per cent—a fact which illustrates the decline which has taken place during the decade in the cost of such materials.

The increase in the added value given to fabrics by the processes to which they were subjected is 55.6 per cent in comparison with an increase of 45 per cent in the cost of materials used. The difference is due to the fact that, while the cost of materials has declined, the items of wages and miscellaneous expenses have not.

Table 3 presents the quantity and value of all classes of goods operated upon and value added in independent establishments, 1890 and 1900.

TABLE 3.—COMPARATIVE SUMMARY, KINDS AND QUANTITY OF GOODS OPERATED UPON AND VALUE ADDED BY INDEPENDENT ESTABLISHMENTS, 1890 AND 1900.

	1900		1890	
	Pounds.	Value.	Pounds.	Value.
Aggregate value.....		\$44,968,331		\$28,900,560
Total.....	118,097,838	8,097,439	85,575,424	6,001,754
Cotton stock, bleached.....	300,650	4,823		
Cotton stock, dyed.....	12,466,700	572,061	4,676,344	204,827
Wool stock, dyed.....	2,408,511	83,071	1,160,666	48,824
Cotton yarn, bleached.....	12,780,518	252,635		
Cotton yarn, dyed.....	54,108,555	2,225,912	48,762,759	2,036,127
Cotton yarn, mercerized.....	898,851	159,616		
Woolen yarn, dyed.....	20,755,984	557,001	17,999,651	751,801
Worsted yarn, dyed.....	8,474,562	491,291	9,342,157	493,074
Silk yarn, dyed.....	5,609,444	3,615,644	3,322,017	2,346,387
Spun silk yarn, dyed.....	329,063	133,785	311,830	119,810
	Square yards.	Value.	Square yards.	Value.
Total.....	2,511,485,729	\$34,599,542	1,569,422,631	\$22,514,000
Cotton piece goods, bleached.....	964,902,367	6,691,423	454,857,758	3,369,940
Cotton piece goods, dyed.....	550,480,339	7,585,204	446,496,822	5,671,488
Cotton piece goods, mercerized.....	7,978,506	400,118		
Cotton piece goods, printed.....	940,450,338	15,997,087	579,687,368	10,355,032
Woolen piece goods, dyed.....	11,243,394	451,804	20,779,034	652,995
Worsted piece goods, dyed.....	9,418,337	476,951		
Silk piece goods, dyed.....	14,340,796	431,403	7,405,399	394,777
Silk piece goods, printed.....	3,631,652	335,154		
Mixed piece goods, dyed.....		2,180,278	60,716,250	2,069,765
All other work done.....		2,266,350		384,806

Inasmuch as the dyeing and finishing of goods in cotton mills represents generally merely work upon their own products, the true measure of increase of the business is discovered more from the foregoing table than from a combination of the two. It will be seen that there has been an increase in almost all departments of dyeing and finishing, but the increase is much less marked in the case of woolen goods than in cotton and silk.

Table 4 shows, by states, with totals for the United States, the returns of establishments engaged in dyeing and finishing cotton, woolen, and worsted, silk, and mixed goods, and yarns, respectively, 1900, and Table 5 presents a detailed summary of the industry for 1900.

## MANUFACTURES.

TABLE 4.—DYEING AND FINISHING TEXTILES.

## COTTON GOODS AND YARNS.

STATES.	Number of establishments.	Capital.	AVERAGE NUMBER OF WAGE-EARNERS AND TOTAL WAGES.				
			Average number.	Wages.	Men, 16 years and over.	Women, 16 years and over.	Children, under 16 years.
1 United States .....	173	\$52,287,850	23,236	\$9,847,474	18,847	3,433	956
2 Connecticut.....	5	3,243,744	1,300	578,756	1,015	238	47
3 Kentucky.....	3	161,239	116	45,225	83	25	8
4 Massachusetts.....	33	14,927,375	4,577	2,031,255	3,771	709	97
5 New Hampshire.....	4	675,704	903	409,960	749	154	.....
6 New Jersey.....	20	7,264,547	3,450	1,467,571	2,309	552	68
7 New York.....	17	4,959,703	2,148	997,175	1,703	349	55
8 North Carolina.....	5	293,831	184	45,340	142	42	.....
9 Pennsylvania.....	56	5,799,650	3,286	1,369,807	2,743	254	234
10 Rhode Island.....	20	12,573,709	5,760	2,389,911	4,531	973	256
11 All other states <sup>1</sup> .....	10	2,388,228	1,508	512,474	1,291	137	80

## WOOLEN GOODS AND WORSTED GOODS AND YARNS.

1 United States .....	33	\$1,561,790	1,236	\$603,100	1,076	137	23
2 Massachusetts.....	3	128,749	64	23,819	44	20	.....
3 New York.....	3	63,322	45	19,965	44	1	.....
4 Pennsylvania.....	23	1,201,442	942	477,031	867	54	21
5 All other states <sup>2</sup> .....	4	168,277	135	82,235	121	62	2

## MIXED GOODS AND YARNS.

1 United States .....	41	\$2,355,930	1,416	\$598,653	956	404	56
2 New Jersey.....	6	276,987	99	45,740	91	5	3
3 New York.....	10	1,010,952	683	288,464	444	241	.....
4 Pennsylvania.....	20	492,061	355	147,877	272	33	50
5 Rhode Island <sup>3</sup> .....	5	575,980	277	116,572	149	125	3

## SILK GOODS AND YARNS.

1 United States .....	51	\$4,437,534	3,888	\$1,677,089	3,540	279	69
2 New Jersey.....	32	4,052,461	3,510	1,486,623	3,214	229	67
3 New York <sup>4</sup> .....	13	198,320	245	119,474	200	45	.....
4 Pennsylvania.....	6	186,753	133	70,987	126	5	2

<sup>1</sup> Includes establishments distributed as follows: Alabama, 1; Delaware, 2; Illinois, 2; Indiana, 1; Maine, 1; Maryland, 2; West Virginia, 1.  
<sup>2</sup> Includes establishments distributed as follows: Illinois, 1; New Jersey, 1; Ohio, 1; Rhode Island, 1.  
<sup>3</sup> Includes 1 establishment in Massachusetts and 1 in New Hampshire.  
<sup>4</sup> Includes 1 establishment in Illinois.

# DYEING AND FINISHING TEXTILES.

BY CLASSES OF TEXTILES, 1900.

## COTTON GOODS AND YARNS.

POWER.			Printing machines.	Miscellaneous expenses.	COST OF MATERIALS USED.					Value of products.	
Steam horse-power.	Water horse-power.	All other horse-power.			Total.	Chemicals and dyestuffs.	Fuel.	Rent of power and heat.	All other materials.		
49,415	9,074	3,316	298	\$3,630,012	\$14,019,084	\$8,033,680	\$1,827,815	\$36,034	\$4,121,555	\$35,950,505	1
2,558	2,156	400	16	218,075	907,377	561,619	113,790	7,955	224,023	2,269,907	2
284	.....	40	1	9,702	84,023	71,518	6,300	180	6,025	179,123	3
11,062	2,800	122	08	857,065	3,035,697	1,984,718	382,582	5,512	662,907	8,608,626	4
20	875	.....	16	89,123	556,869	294,206	72,251	50	190,272	1,132,819	5
6,864	1,330	.....	53	599,590	2,246,230	1,112,252	251,519	6,237	876,222	5,247,300	6
5,139	240	.....	49	123,686	1,129,216	585,627	170,774	1,245	371,570	2,491,791	7
345	.....	5	.....	13,366	95,210	13,000	10,787	.....	71,443	175,750	8
7,464	85	.....	30	401,404	2,136,181	1,372,179	235,371	1,055	526,476	4,687,405	9
12,303	675	2,577	68	1,121,563	2,954,298	1,573,455	497,461	20	838,362	8,192,350	10
2,781	1,963	172	2	193,433	878,933	465,018	86,630	13,180	309,255	2,275,374	11

## WOOLEN GOODS AND WORSTED GOODS AND YARNS.

1,792	260	124	.....	\$115,894	\$962,108	\$641,413	\$106,686	\$4,150	\$209,859	\$2,104,418	1
160	60	8	.....	4,377	45,004	32,400	.....	.....	.....	102,114	2
10	200	4	.....	2,432	31,751	21,557	7,764	400	4,840	66,158	3
1,404	.....	107	.....	100,417	725,503	485,048	75,620	3,750	161,085	1,572,233	4
228	.....	10	.....	8,668	159,850	102,408	19,054	.....	38,388	363,913	5

## MIXED GOODS AND YARNS.

2,671	140	79	20	\$174,495	\$616,644	\$265,362	\$68,131	\$7,746	\$275,405	\$1,969,446	1
362	.....	20	.....	27,510	68,020	27,125	9,053	360	31,482	182,610	2
882	.....	39	6	65,935	174,016	40,898	20,962	4,119	108,037	804,213	3
1,015	.....	20	11	37,621	215,316	137,779	25,155	3,207	49,115	551,845	4
412	140	.....	3	43,429	159,292	59,560	12,961	.....	36,771	430,778	5

## SILK GOODS AND YARNS.

4,204	.....	112	16	\$217,546	\$2,360,301	\$1,727,166	\$162,459	\$5,800	\$404,876	\$5,538,962	1
3,767	.....	112	11	182,248	2,194,665	1,611,955	150,044	2,900	429,766	5,046,088	2
375	.....	.....	5	18,657	68,129	42,043	6,390	2,800	16,395	265,345	3
62	.....	.....	.....	16,641	97,507	73,168	6,025	100	18,214	226,529	4

TABLE 5.—DYEING AND FINISHING

	United States.	Connecticut.	Illinois.	Kentucky.	
1	Number of establishments.....	298	5	4	3
	Character of organization:				
2	Individual.....	103		2	1
3	Firm and limited partnership.....	81			2
4	Incorporated company.....	114	5	2	
5	Miscellaneous.....				
	Capital:				
6	Total.....	\$60,643,104	\$3,243,744	\$113,694	\$161,239
7	Land.....	\$5,804,949	\$482,100	\$7,500	\$7,800
8	Buildings.....	\$12,251,886	\$1,004,388	\$42,000	\$25,922
9	Machinery, tools, and implements.....	\$17,750,574	\$929,262	\$50,800	\$55,455
10	Cash and sundries.....	\$25,835,695	\$827,994	\$13,394	\$69,082
11	Proprietors and firm members.....	300		2	3
	Salaries:				
12	Total number.....	1,318	39	7	7
13	Total salaries.....	\$2,267,128	\$100,884	\$6,700	\$9,090
	Officers of corporations—				
14	Number.....	211	16	1	2
15	Salaries.....	\$814,895	\$51,797	\$2,500	\$5,300
	General superintendents, managers, clerks, etc.—				
16	Total number.....	1,107	23	6	5
17	Total salaries.....	\$1,452,233	\$49,087	\$4,200	\$3,790
	Men—				
18	Number.....	994	21	3	5
19	Salaries.....	\$1,401,799	\$48,050	\$2,700	\$3,790
	Women—				
20	Number.....	113	2	3	
21	Salaries.....	\$50,434	\$1,037	\$1,500	
	Wage-earners, including pieceworkers, and total wages:				
22	Greatest number employed at any one time during the year.....	33,387	1,511	113	128
23	Least number employed at any one time during the year.....	26,275	1,154	54	100
24	Average number.....	29,776	1,300	84	116
25	Wages.....	\$12,726,316	\$578,756	\$27,878	\$45,225
	Men, 16 years and over—				
26	Average number.....	24,419	1,015	69	83
27	Wages.....	\$11,361,194	\$507,632	\$24,129	\$39,987
	Women, 16 years and over—				
28	Average number.....	4,258	238	10	25
29	Wages.....	\$1,166,972	\$61,689	\$2,925	\$4,138
	Children under 16 years—				
30	Average number.....	1,104	47	5	8
31	Wages.....	\$198,150	\$9,485	\$824	\$1,100
	Average number of wage-earners, including pieceworkers, employed during each month:				
	Men, 16 years and over—				
32	January.....	24,387	950	71	89
33	February.....	24,093	976	83	87
34	March.....	24,497	979	83	86
35	April.....	24,728	1,004	73	86
36	May.....	24,506	988	74	85
37	June.....	24,020	1,008	72	82
38	July.....	23,830	1,012	72	75
39	August.....	23,885	1,029	68	75
40	September.....	24,020	1,029	73	77
41	October.....	24,757	1,031	60	81
42	November.....	25,070	1,084	57	89
43	December.....	25,229	1,090	48	89
	Women, 16 years and over—				
44	January.....	4,374	217	18	30
45	February.....	4,328	221	18	31
46	March.....	4,359	289	17	31
47	April.....	4,344	255	17	30
48	May.....	4,256	253	18	27
49	June.....	4,147	246	8	19
50	July.....	4,010	216	4	13
51	August.....	4,008	233	3	13
52	September.....	4,135	238	4	25
53	October.....	4,304	225	4	22
54	November.....	4,547	283	4	27
55	December.....	4,424	230	4	30
	Children, under 16 years—				
56	January.....	1,093	45	4	8
57	February.....	1,073	48	4	8
58	March.....	1,080	47	4	8
59	April.....	1,095	44	4	8
60	May.....	1,075	41	4	8
61	June.....	1,089	42	5	8
62	July.....	1,111	50	5	8
63	August.....	1,125	50	5	8
64	September.....	1,113	50	5	8
65	October.....	1,124	49	5	8
66	November.....	1,130	50	5	8
67	December.....	1,140	51	5	8
	Miscellaneous expenses:				
68	Total.....	\$4,137,947	\$216,075	\$5,913	\$9,702
69	Rent of works.....	\$145,075		\$900	\$360
70	Taxes, not including internal revenue.....	\$281,974	\$16,084	\$284	\$640
71	Rent of offices, insurance, interest, and all sundry expenses not hitherto included.....	\$3,669,163	\$192,063	\$4,729	\$8,702
72	Contract work.....	\$41,735	\$7,928		
	Materials used:				
73	Aggregate cost.....	\$17,958,137	\$907,377	\$32,523	\$34,023
	Chemicals and dyestuffs—				
74	Cost.....	\$10,667,621	\$561,619	\$18,966	\$71,518
	Starch—				
75	Pounds.....	33,850,002	1,359,532	46,037	133,754
76	Cost.....	\$874,643	\$36,715	\$560	\$4,162
	Slk soap—				
77	Pounds.....	5,105,575	4,200	2,500	
78	Cost.....	\$232,706	\$210	\$135	
	Other soap—				
79	Pounds.....	9,835,976	469,612	10,000	3,200
80	Cost.....	\$331,103	\$16,919	\$310	\$160
81	Fuel.....	\$2,165,091	\$113,780	\$7,546	\$6,300
82	Rent of power and heat.....	\$53,730	\$7,955		\$180
83	Mill supplies.....	\$972,207	\$18,840	\$629	\$650
84	All other materials.....	\$2,171,482	\$103,804	\$558	\$1,053
85	Freight.....	\$489,554	\$47,535	\$3,819	

DYEING AND FINISHING TEXTILES.

TEXTILES: BY STATES, 1900.

Massachusetts.	New Hampshire.	New Jersey.	New York.	North Carolina.	Pennsylvania.	Rhode Island.	All other states. <sup>1</sup>	
37	5	59	42	5	105	24	9	1
9	3	22	16	2	46	2	2	2
6	.....	7	15	1	46	.....	.....	3
22	2	30	11	2	13	20	7	4
.....	.....	.....	.....	.....	.....	.....	.....	5
\$15,206,200	\$883,704	\$11,600,695	\$6,230,657	\$293,831	\$7,679,906	\$12,858,123	\$2,376,311	6
\$1,161,503	\$61,000	\$651,481	\$859,909	\$4,700	\$733,612	\$1,572,306	\$283,038	7
\$1,960,972	\$163,000	\$2,100,396	\$1,335,743	\$33,800	\$1,290,133	\$3,765,314	\$537,213	8
\$2,499,388	\$173,500	\$4,624,059	\$2,097,541	\$184,022	\$2,363,629	\$3,862,808	\$905,115	9
\$9,684,337	\$496,204	\$4,224,759	\$2,457,459	\$71,809	\$3,287,532	\$3,652,700	\$650,945	10
24	4	47	50	5	155	6	4	11
239	21	353	107	8	216	256	65	12
\$547,862	\$23,900	\$614,910	\$134,345	\$6,650	\$260,277	\$440,996	\$112,514	13
44	.....	57	10	1	25	45	10	14
\$284,056	.....	\$224,127	\$27,000	\$1,000	\$52,450	\$174,605	\$41,460	15
195	21	296	97	7	191	211	55	16
\$313,206	\$23,900	\$390,733	\$107,345	\$5,650	\$207,827	\$275,391	\$71,054	17
174	18	278	90	6	167	186	46	18
\$303,655	\$22,500	\$382,739	\$104,398	\$5,150	\$196,656	\$264,575	\$67,586	19
21	3	18	7	1	24	25	9	20
\$9,651	\$1,400	\$3,044	\$2,947	\$500	\$11,171	\$10,316	\$3,463	21
5,287	1,088	8,186	3,520	193	5,303	6,423	1,030	22
3,990	956	6,221	2,787	133	4,123	5,219	1,453	23
4,073	1,028	7,074	3,117	134	4,716	5,942	1,537	24
\$2,081,015	\$451,960	\$3,003,491	\$1,424,673	\$45,340	\$2,065,752	\$2,474,042	\$523,270	25
3,846	739	6,120	2,395	142	4,013	4,644	1,303	26
\$1,833,344	\$394,919	\$2,775,797	\$1,244,051	\$98,031	\$1,905,713	\$2,118,454	\$479,132	27
785	239	736	636	42	346	1,039	157	28
\$229,697	\$67,041	\$197,093	\$166,424	\$7,309	\$93,706	\$309,949	\$37,101	29
97	.....	163	86	.....	357	259	77	30
\$18,074	.....	\$30,601	\$14,103	.....	\$60,323	\$45,639	\$12,046	31
3,904	749	6,004	2,420	147	4,037	4,672	1,294	32
3,652	761	6,065	2,451	143	4,023	4,649	1,303	33
3,882	733	6,160	2,467	143	4,086	4,637	1,291	34
3,377	790	6,171	2,476	140	4,112	4,695	1,304	35
3,821	810	6,131	2,415	148	4,103	4,635	1,296	36
3,683	733	6,033	2,327	140	3,949	4,593	1,295	37
3,743	734	5,894	2,243	140	3,932	4,650	1,291	38
3,757	779	6,033	2,338	140	3,814	4,539	1,310	39
3,888	800	5,870	2,355	137	3,996	4,519	1,277	40
3,959	805	6,247	2,412	140	3,985	4,696	1,341	41
3,967	810	6,396	2,422	143	4,031	4,764	1,307	42
4,003	814	6,373	2,417	143	4,034	4,885	1,323	43
330	237	310	641	42	352	1,047	150	44
304	214	734	685	42	349	1,031	148	45
735	216	795	672	42	349	1,005	167	46
760	229	789	680	42	350	1,036	166	47
746	237	771	661	42	346	1,003	147	48
694	233	731	642	42	339	970	163	49
631	232	734	579	42	349	1,045	165	50
643	222	737	584	42	337	1,035	169	51
699	254	724	604	42	361	1,026	168	52
733	270	804	613	42	351	1,076	169	53
733	269	847	633	42	330	1,067	162	54
750	250	856	639	42	339	1,123	161	55
97	.....	147	85	.....	338	253	66	56
93	.....	142	77	.....	373	251	67	57
97	.....	143	82	.....	374	253	67	58
92	.....	160	83	.....	373	261	65	59
93	.....	161	80	.....	363	260	65	60
89	.....	134	82	.....	348	253	78	61
97	.....	172	87	.....	342	257	93	62
89	.....	176	92	.....	337	273	95	63
100	.....	174	89	.....	344	257	86	64
104	.....	182	94	.....	342	253	82	65
104	.....	131	94	.....	346	262	80	66
104	.....	191	89	.....	349	264	79	67
\$366,329	\$111,473	\$309,580	\$210,395	\$13,366	\$556,088	\$1,133,065	\$200,461	68
\$7,617	\$250	\$31,654	\$29,067	\$322	\$35,990	\$4,805	\$510	69
\$35,717	\$14,473	\$35,296	\$34,749	\$1,106	\$23,293	\$49,140	\$16,137	70
\$753,802	\$96,750	\$733,914	\$140,586	\$11,433	\$455,595	\$1,080,120	\$133,404	71
\$10,793	.....	\$3,316	\$3,933	.....	\$3,205	\$4,000	.....	72
\$3,110,910	\$636,469	\$4,513,763	\$1,402,373	\$95,210	\$3,174,507	\$3,087,781	\$913,196	73
\$2,031,072	\$309,296	\$2,755,553	\$689,825	\$13,000	\$2,063,174	\$1,653,059	\$495,539	74
5,335,631	1,253,651	6,095,590	3,159,377	751,376	4,593,202	7,231,216	3,330,036	75
\$160,016	\$23,646	\$163,723	\$63,124	\$14,334	\$34,373	\$205,321	\$106,164	76
26,412	.....	4,499,357	181,779	.....	337,327	2,000	1,500	77
\$1,309	.....	\$200,414	\$9,035	.....	\$21,233	\$100	\$130	78
136,838	1,137,160	751,999	392,166	4,000	4,434,594	1,701,566	174,841	79
\$3,137	\$25,034	\$23,834	\$37,036	\$220	\$151,637	\$61,943	\$5,703	80
\$393,711	\$74,451	\$411,173	\$202,074	\$10,767	\$342,071	\$513,337	\$33,776	81
\$5,511	.....	\$9,497	\$3,564	.....	\$3,772	\$3,200	.....	82
\$170,010	\$2,443	\$230,419	\$73,617	.....	\$3,610	\$251,169	\$41,169	83
\$237,452	\$174,296	\$631,996	\$277,042	.....	\$43,655	\$303,333	\$76,020	84
\$47,631	\$27,253	\$115,099	\$30,996	.....	\$4,144	\$30,444	\$36,430	85

<sup>1</sup>Includes establishments distributed as follows: Alabama, 1; Delaware, 2; Indiana, 1; Maine, 1; Maryland, 2; Ohio, 1; West Virginia, 1.

TABLE 5.—DYEING AND FINISHING

	United States.	Connecticut.	Illinois.	Kentucky.	
86	<b>Products:</b>				
	Aggregate value.....	\$44,963,331	\$2,269,967	\$86,960	\$179,123
87	Wool dyed—				
	Pounds.....	2,408,511			
88	Value.....	\$83,071			
	Yarn dyed—				
	Woolen—				
89	Pounds.....	20,765,984		39,600	
90	Value.....	\$557,001		\$2,900	
	Worsted—				
91	Pounds.....	8,474,562			
92	Value.....	\$491,291			
	Piece goods, dyed—				
	Woolen—				
93	Square yards.....	11,243,394		350,000	
94	Value.....	\$451,864		\$18,400	
	Worsted—				
95	Square yards.....	9,418,337			
96	Value.....	\$476,951			
	Cotton stock—				
	Bleached—				
97	Pounds.....	300,650			
98	Value.....	\$4,823			
	Dyed—				
99	Pounds.....	12,466,700		40,000	
100	Value.....	\$572,661		\$2,000	
	Cotton yarn—				
	Bleached—				
101	Pounds.....	12,780,518			
102	Value.....	\$252,635			
	Dyed—				
103	Pounds.....	54,103,555	360,000	1,960,000	1,651,347
104	Value.....	\$2,226,912	\$16,500	\$34,600	\$38,769
	Mercerized—				
105	Pounds.....	868,851		1,000	
106	Value.....	\$159,616		\$150	
	Cotton piece goods—				
	Bleached—				
107	Square yards.....	964,902,367	290,000	3,456,600	
108	Value.....	\$6,091,423	\$2,400	\$17,283	
	Dyed—				
109	Square yards.....	559,480,339	84,204,495	830,000	13,000,000
110	Value.....	\$7,585,204	\$1,290,441	\$7,252	\$140,354
	Mercerized—				
111	Square yards.....	7,973,506	530,000		
112	Value.....	\$400,118	\$29,000		
	Printed—				
113	Square yards.....	940,450,338	45,755,428		
114	Value.....	\$15,997,087	\$827,885		
	Silk, dyed—				
115	Pounds.....	5,609,444		5,200	
116	Value.....	\$3,615,644		\$2,600	
	Spun silk, dyed—				
117	Pounds.....	329,063		50	
118	Value.....	\$133,785		\$25	
	Silk piece goods—				
	Dyed—				
119	Square yards.....	14,340,796		11,500	
120	Value.....	\$481,463		\$567	
	Printed—				
121	Square yards.....	3,681,652			
122	Value.....	\$335,164			
	Mixed goods—				
123	Value.....	\$2,180,278			
124	All other work done.....	\$2,266,350	\$103,741	\$1,133	
	<b>Machinery:</b>				
	Printing machines—				
125	Total number.....	334	16		1
	On cotton—				
126	Number.....	321	16		1
	On silk—				
127	Number.....	13			
	<b>Comparison of products:</b>				
128	Number of establishments reporting for both years.....	242	4	4	2
129	Value for census year.....	\$39,860,765	\$1,967,267	\$86,960	\$167,063
130	Value for preceding business year.....	\$34,031,844	\$1,425,445	\$88,326	\$116,422
	<b>Power:</b>				
131	Number of establishments reporting.....	273	5	4	3
132	Total horsepower.....	71,187	5,109	159	324
	Owned—				
	Engines—				
	Steam—				
133	Number.....	1,535	89	6	7
134	Horsepower.....	57,216	2,553	159	230
	Gas or gasoline—				
135	Number.....	2			
136	Horsepower.....	8			
	Water wheels—				
137	Number.....	86	15		
138	Horsepower.....	9,474	2,156		
	Electric motors—				
139	Number.....	181	6		3
140	Horsepower.....	1,949	385		40
	Other power—				
141	Number.....	9			
142	Horsepower.....	1,624			
	Rented—				
143	Electric horsepower.....	50	15		
144	All other horsepower.....	866			4
	Furnished to other establishments—				
145	Horsepower.....	285	125		

DYEING AND FINISHING TEXTILES.

TEXTILES: BY STATES, 1900—Continued.

	Massachusetts.	New Hampshire.	New Jersey.	New York.	North Carolina.	Pennsylvania.	Rhode Island.	All other states. <sup>1</sup>	
123	\$8,868,290	\$1,828,819	\$10,488,968	\$8,625,882	\$175,750	\$7,088,012	\$8,484,878	\$2,417,187	86
	40,828		150,798	169,187		1,988,000		60,198	87
	\$2,043		\$9,151	\$9,888		\$56,470		\$6,019	88
	100,800			190,000		20,425,584			89
	\$7,059			\$9,400		\$537,642			90
	382,525		62,800	678,560		6,487,737	858,000	9,940	91
	\$29,002		\$4,395	\$44,356		\$343,844	\$68,700	\$994	92
			600,868			9,901,550	301,476		93
			\$36,609			\$881,196	\$15,659		94
	488,520					5,381,206	1,265,188	2,328,478	95
	\$19,952					\$227,878	\$50,605	\$178,516	96
	29,650	6,000		200,000		60,000		5,000	97
	\$1,743	\$180		\$1,000		\$1,750		\$150	98
	2,771,290	99,452	1,720,699	1,837,281	50,000	5,347,978	600,000		99
	\$249,114	\$3,847	\$29,990	\$54,477	\$1,030	\$196,203	\$36,000		100
	6,453,500	150,000	28,500	57,156		3,637,567	2,453,795		101
	\$93,662	\$4,500	\$2,280	\$2,720		\$89,123	\$35,350		102
347	7,158,907	2,500	189,991	1,440,928		34,174,822	6,709,637	456,023	103
709	\$294,909	\$125	\$22,000	\$85,168		\$1,265,786	\$438,103	\$30,892	104
			2,000	1,100		786,751	78,000		105
			\$3,000	\$110		\$146,996	\$9,360		106
	276,321,266	18,736,899	70,447,673	28,197,762	2,715,663	6,814,458	388,442,903	174,479,148	107
	\$1,637,880	\$130,007	\$745,542	\$202,410	\$16,262	\$50,036	\$2,605,031	\$1,284,572	108
	90,458,727	7,918,490	91,876,898	19,041,259		63,547,558	108,125,288	80,477,623	109
	\$1,060,761	\$98,044	\$1,340,301	\$227,353		\$1,023,829	\$1,576,822	\$825,047	110
			36,322			79,410	7,277,774		111
			\$1,365			\$4,461	\$365,292		112
	262,619,600	50,418,199	187,425,755	150,482,209		79,013,248	162,185,904	2,600,000	113
	\$3,135,021	\$886,405	\$2,909,981	\$1,872,721		\$1,428,500	\$2,859,574	\$78,000	114
			4,837,010	350,460		416,774			115
			\$3,287,048	\$124,411		\$201,585			116
			220,629	41,000		67,384			117
			\$109,257	\$10,796		\$13,707			118
			18,997,451	331,845					119
			\$459,675	\$21,221					120
	262,964		3,394,688	24,000					121
	\$20,350		\$812,880	\$1,924					122
	\$44,618	\$192,500	\$640,740	\$303,422	\$124,000	\$542,141	\$332,857		123
	\$267,226	\$18,711	\$574,749	\$655,005	\$34,468	\$526,815	\$71,465	\$12,997	124
1	69	16	64	60		41	65	2	125
1	69	16	56	55		41	65	2	126
			8	5					127
2	29	2	44	35	2	90	21	9	128
063	\$7,979,753	\$1,124,305	\$8,722,830	\$3,470,303	\$113,000	\$6,334,069	\$7,478,038	\$2,417,187	129
422	\$6,774,611	\$1,044,960	\$7,876,560	\$8,079,998	\$115,000	\$5,205,184	\$6,478,137	\$1,827,201	130
3	37	4	49	41	4	98	24	9	131
324	14,417	595	12,463	6,885	350	10,107	15,897	4,941	132
7	281	1	339	203	10	316	256	27	133
280	11,932	10	10,943	6,321	345	9,579	12,648	2,451	134
				2					135
				8					136
	24	4	17	6		1	7	12	137
	2,350	515	1,330	440		35	675	1,063	138
3	9		4			1		15	139
40	125		128		5	7	92	182	140
			1				1,077		141
			4			3	5		142
						120	1,500		143
4		10	58	35		366	2	345	144
				81					145
				30	10	120			

<sup>1</sup>Includes establishments distributed as follows: Alabama, 1; Delaware, 2; Indiana, 1; Maine, 1; Maryland, 2; Ohio, 1; West Virginia, 1.

TABLE 5.—DYEING AND FINISHING

		United States.	Connecticut.	Illinois.	Kentucky.
Establishments classified by number of persons employed not including proprietors and firm members:					
Total number of establishments .....					
146	Under 5 .....	298	5	4	3
147	5 to 20 .....	19		1	
148	21 to 50 .....	82	1	2	2
149	51 to 100 .....	74		1	1
150	101 to 250 .....	60	2		
151	251 to 500 .....	39	1		
152	501 to 1,000 .....	13			
153	Over 1,000 .....	18			
154		8	1		

DYEING AND FINISHING TEXTILES.

TEXTILES: BY STATES, 1900—Continued.

Massachusetts.	New Hampshire.	New Jersey.	New York.	North Carolina.	Pennsylvania.	Rhode Island.	All other States. <sup>1</sup>	
37	5	59	42	5	105	24	9	146
1	2	3	1		10	1		147
7		14	18	8	89	1		148
6		10	13		84	2		149
10		14	3	1	16	2		150
8	2	6	4	1	3	12		151
3		7	1			1		152
2	1	5	2		2	4		153
					1	1		154

<sup>1</sup>Includes establishments distributed as follows: Alabama, 1; Delaware, 2; Indiana, 1; Maine, 1; Maryland, 2; Ohio, 1; West Virginia, 1.

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# CLOTHING.

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# CLOTHING.

By AXEL JOSEPHSSON.

The statistics for the manufacture of clothing as a factory product are arranged in three classes: Men's (including children's) clothing, factory product; men's clothing, factory product, buttonholes; and women's clothing, factory product. Men's clothing, custom-made, and women's clothing, dressmaking, were classified as hand trades. The aggregate for these industries appear in Table 24, but the detailed statistics appear only in the Report on Manufactures, Parts I and II.

The existing conditions in the clothing industry and especially in the manufacture of men's clothing render it impossible for the Census Office, within the limited time allotted for the work, to make a complete canvass of the industry. The special agents and enumerators who collected the data were unable to obtain information from a large number of places where the manufacture of clothing was carried on. The majority of these places were in tenements and small shops in the rear of dwellings, and the largest part of the work produced in them was contract work. Thus the information to

be gained in these places would relate chiefly to the number of persons employed and the wages paid them. The value of the products issuing from these places was in many instances included in the schedule of the wholesale manufacturer, and in such cases there was a lack of corresponding labor. In many cases the figures obtained from the contractors are unreliable. As a rule, the men giving the information are foreigners, without a knowledge of the language and having a great prejudice against, and suspicion of, any person making inquiries about their business. They are not disposed to make any returns, and, moreover, do not keep any books or accounts, and therefore give the information mainly as guesswork. A part of the work is done by women in their own homes; but it was impracticable to attempt to ascertain the number so employed. With all their imperfections and limitations, the following statistics of the clothing manufacture may, however, be said to reflect the conditions of the industry with tolerable accuracy.

## MEN'S CLOTHING, FACTORY PRODUCT.

Table 1 is a comparative summary for the manufacture of men's clothing, factory product, as returned at

the censuses of 1850 to 1900, inclusive, with the percentages of increase for each decade.

TABLE 1.—CLOTHING, MEN'S, FACTORY PRODUCT: COMPARATIVE SUMMARY, 1850 TO 1900, WITH PER CENT OF INCREASE FOR EACH DECADE.

	DATE OF CENSUS.						PER CENT OF INCREASE.				
	1900	1890	1880	1870	1860	1850	1890 to 1900	1880 to 1890	1870 to 1880	1860 to 1870	1850 to 1860
Number of establishments.....	5,781	4,867	6,166	7,868	4,014	4,278	17.7	121.1	121.5	95.8	10.2
Capital.....	\$120,620,361	\$128,268,647	\$79,861,696	\$50,223,880	\$27,246,093	\$12,500,161	16.0	60.6	59.0	84.3	117.8
Salaried officials, clerks, etc., number.	10,002	211,416	(3)	(3)	(3)	(4)	112.4				
Salaries.....	\$10,404,409	\$11,235,807	(3)	(3)	(3)	(4)	17.4				
Wage-earners, average number.....	120,950	144,926	160,818	108,128	114,800	96,551	116.5	19.9	48.7	15.8	18.9
Total wages.....	\$45,505,778	\$51,076,837	\$45,940,358	\$30,746,579	\$19,856,423	\$15,032,340	110.9	11.2	49.4	54.8	32.1
Men, 16 years and over.....	48,077	67,786	77,255	47,829	41,837	35,051	129.1	112.3	61.5	14.3	19.4
Wages.....	\$27,923,966	\$33,292,238	(3)	(3)	(3)	(3)	117.9				
Women, 16 years and over.....	69,862	75,621	80,994	59,019	72,963	61,500	17.6	16.6	37.2	119.1	18.6
Wages.....	\$17,766,507	\$17,634,858	(3)	(3)	(3)	(3)	7				
Children, under 16 years.....	3,011	1,519	2,564	(3)	(3)	(3)	98.2	140.8	100.3		
Wages.....	\$416,305	\$148,686	(3)	(3)	(3)	(3)	179.3				
Miscellaneous expenses.....	\$37,509,258	\$20,460,045	(4)	(4)	(3)	(3)	83.3				
Cost of materials used.....	\$145,295,248	\$128,846,837	(3)	(3)	(3)	(4)	12.8	11.9	51.3	96.6	71.6
Value of products.....	\$276,861,607	\$251,019,609	\$181,368,282	\$86,794,706	\$44,149,752	\$25,730,258	10.3	19.8	41.0	83.9	67.8

<sup>1</sup> Decrease.

<sup>2</sup> Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this table. (See Table 11.)

<sup>3</sup> Not reported separately.

<sup>4</sup> Not reported.

Although the manufacture of men's clothing as a factory product began in the United States prior to 1830, it was not until the census report of 1890 that the statistics for this branch of the clothing industry were given separately. The statistics for 1850 were almost exclusively the figures obtained from clothiers and tailors and a very small percentage was for factory-made clothing. In the censuses of 1860, 1870, and 1880 the figures for the custom-made and those for the factory-made clothing were not separated. Thus the only comparison of any value that can be made is between the figures for the censuses of 1890 and 1900.

The number of establishments increased 864, or 17.7 per cent, between 1890 and 1900. In the same period the capital decreased \$7,633,196, or 6 per cent. The causes of this decrease in the amount of capital as against an increase in the number of establishments and in the value of products are referred to in connection with Table 7.

In this industry the average capital per establishment, which in 1890 was \$26,352, had decreased to \$21,047 in 1900, indicating that the increase in establishments had been in smaller shops. The total number of wage-earners reported in 1900 showed a decrease of 23,976, or 16.5 per cent, and their wages decreased \$5,570,059, or 10.9 per cent. The greatest decrease was in the number of men, with 19,709, with a decrease in their wages of \$5,968,327. This is partly due to a transfer of wages to "contract work" under miscellaneous expenses. Besides, it can be explained partly by the substitution of women for men.

The average number of women wage-earners decreased 5,759, or 7.6 per cent, but the total wages paid to women increased \$131,649, or seven-tenths of 1 per cent. The number of children under 16 years of age increased 1,492, or 98.2 per cent, and the wages paid them increased \$266,619, or 179.3 per cent. It is only in certain branches of the industry that the number of children employed increased, as, for instance, in the manufacture of overalls, while in other branches the number decreased. The miscellaneous expenses increased \$17,049,213, or 83.3 per cent. The cost of all materials used increased \$16,448,391, or 12.8 per cent, and the value of products \$25,841,998, or 10.3 per cent.

Because of the decrease in the price of ready-made clothing this percentage does not, however, indicate the real growth in the quantity of clothing manufactured, which increased in far greater proportions.

Table 2 presents, by states, arranged geographically, the number of active establishments from which reports

were received in 1890 and 1900, and the increase during the decade.

TABLE 2.—CLOTHING, MEN'S, FACTORY PRODUCT: COMPARATIVE SUMMARY, NUMBER OF ACTIVE ESTABLISHMENTS, 1890 AND 1900, WITH INCREASE, BY STATES, ARRANGED GEOGRAPHICALLY.

	1900	1890	Increase.
United States .....	5,781	4,867	864
New England states .....	266	335	169
Maine.....	42	87	145
New Hampshire.....	9	17	18
Vermont.....	7	1	6
Massachusetts.....	194	221	127
Rhode Island.....	2	6	14
Connecticut.....	12	3	9
Middle states .....	3,258	3,227	31
New York.....	2,531	2,601	130
New Jersey.....	106	104	2
Pennsylvania.....	481	337	144
Delaware.....	1	1	1
Maryland.....	139	125	14
Southern states .....	310	316	16
West Virginia.....	3	3	3
Virginia.....	9	7	2
North Carolina.....	14	3	11
South Carolina.....	5	6	11
Georgia.....	18	13	5
Kentucky.....	192	248	156
Tennessee.....	22	5	17
Alabama.....	7	3	4
Mississippi.....	2	1	1
Arkansas.....	2	2	2
Louisiana.....	25	26	11
Texas.....	11	4	7
Central states .....	1,790	849	911
Ohio.....	539	508	31
Michigan.....	46	20	20
Indiana.....	31	22	9
Illinois.....	900	199	701
Wisconsin.....	39	27	62
Minnesota.....	25	7	18
Iowa.....	18	7	11
Missouri.....	148	59	89
Western states.....	7	14	17
Nebraska.....	2	5	13
Utah.....	1	1	11
Colorado.....	1	2	14
Kansas.....	3	7	14
Pacific states.....	100	126	126
Washington.....	1	1	1
Oregon.....	3	5	12
California.....	96	121	125

<sup>1</sup> Decrease.

In 1890 the manufacture was carried on in 33 states and in 1900 in 38 states. In 1900, 25 states reported an increase over 1890 of 1,171 establishments, while 13 states reported a decrease of 307, leaving a net increase of 864 establishments. The largest increase, 701, appeared in Illinois; Pennsylvania came next with 144 and Missouri with 89. New York showed the largest decrease with 130; Kentucky came next with 56 and Maine with 45.

Table 3 is a comparative summary of the industry, by states, for 1890 and 1900.

TABLE 3.—CLOTHING, MEN'S, FACTORY PRODUCT: COMPARATIVE SUMMARY, 1890 AND 1900, BY STATES.

		United States.	Alabama.	California.	Connecticut.	Georgia.	Illinois.	Indiana.	Iowa.
Number of establishments .....	1900	5,781	7	96	12	18	900	81	18
	1890	4,807	8	121	3	13	199	22	7
Capital .....	1900	\$120,620,351	\$96,004	\$1,060,934	\$158,274	\$514,060	\$13,684,712	\$1,691,177	\$660,514
	1890	\$128,253,547	\$78,468	\$724,697	\$8,850	\$145,105	\$13,275,575	\$1,115,219	\$480,900
Salaried officials, clerks, etc., number .....	1900	10,002	13	72	1	43	1,708	184	138
	1890	11,415	8	607	5	29	608	71	21
Salaries .....	1900	\$10,404,409	\$11,060	\$96,072	\$500	\$87,340	\$1,385,508	\$153,328	\$101,818
	1890	\$11,285,807	\$10,200	\$276,218	\$3,088	\$18,595	\$641,366	\$70,890	\$17,080
Wage-earners, average number .....	1900	120,950	191	2,410	187	1,276	14,977	2,908	1,340
	1890	144,926	169	1,277	30	340	16,004	1,874	553
Total wages .....	1900	\$45,505,778	\$46,546	\$758,264	\$52,822	\$280,947	\$5,845,254	\$684,751	\$808,286
	1890	\$51,075,837	\$27,160	\$511,459	\$8,476	\$79,948	\$5,892,509	\$448,108	\$132,911
Men, 16 years and over .....	1900	48,077	16	814	68	119	5,094	264	147
	1890	67,786	38	687	5	63	12,312	280	67
Wages .....	1900	\$27,323,966	\$6,265	\$948,774	\$35,866	\$44,408	\$3,007,804	\$104,230	\$66,182
	1890	\$32,292,293	\$10,560	\$846,367	\$2,484	\$26,394	\$4,931,855	\$90,398	\$33,224
Women, 16 years and over .....	1900	69,862	165	1,581	69	1,088	9,105	2,638	1,178
	1890	75,621	116	590	25	273	3,618	1,629	485
Wages .....	1900	\$17,766,507	\$39,281	\$407,150	\$16,956	\$178,070	\$2,718,585	\$529,896	\$285,304
	1890	\$17,684,868	\$14,800	\$165,092	\$5,992	\$54,219	\$948,212	\$354,500	\$99,592
Children, under 16 years .....	1900	8,011	10	15	.....	74	778	6	15
	1890	1,519	15	.....	.....	4	74	15	1
Wages .....	1900	\$415,305	\$1,000	\$2,340	.....	\$8,469	\$128,865	\$625	\$1,800
	1890	\$148,686	\$1,800	.....	.....	\$395	\$12,532	\$3,210	\$125
Miscellaneous expenses .....	1900	\$87,509,258	\$5,598	\$241,655	\$5,732	\$25,200	\$7,065,130	\$101,495	\$95,446
	1890	\$20,460,045	\$8,156	\$57,144	\$213	\$5,905	\$2,752,621	\$126,830	\$68,804
Cost of materials used .....	1900	\$145,295,248	\$152,424	\$2,809,826	\$157,227	\$657,352	\$18,211,015	\$2,005,942	\$910,106
	1890	\$128,846,857	\$136,876	\$1,407,404	\$6,107	\$193,325	\$18,199,808	\$1,611,258	\$489,292
Value of products .....	1900	\$278,861,607	\$262,454	\$8,869,891	\$279,850	\$1,120,607	\$37,378,717	\$3,367,831	\$1,584,697
	1890	\$251,019,609	\$193,800	\$2,568,921	\$20,280	\$352,361	\$33,626,441	\$2,570,179	\$734,245

		Kansas.	Kentucky.	Louisiana.	Maine.	Maryland.	Massachusetts.	Michigan.	Minnesota.
Number of establishments .....	1900	3	192	25	42	139	194	40	25
	1890	7	248	26	87	125	221	20	7
Capital .....	1900	\$93,809	\$1,509,136	\$1,167,806	\$443,752	\$8,458,116	\$3,798,174	\$1,461,590	\$1,174,446
	1890	\$95,904	\$1,146,454	\$1,169,927	\$664,430	\$9,782,043	\$11,254,626	\$642,602	\$357,808
Salaried officials, clerks, etc., number .....	1900	10	172	112	39	766	816	133	113
	1890	14	300	103	78	394	613	50	45
Salaries .....	1900	\$4,977	\$136,915	\$99,450	\$27,921	\$719,535	\$338,704	\$125,781	\$131,610
	1890	\$6,450	\$188,818	\$105,186	\$57,937	\$412,301	\$358,619	\$58,099	\$54,530
Wage-earners, average number .....	1900	101	2,701	2,052	1,270	9,725	3,333	2,008	1,716
	1890	804	2,612	3,583	5,981	12,700	3,333	601	929
Total wages .....	1900	\$18,989	\$694,018	\$389,405	\$271,967	\$8,179,069	\$1,422,278	\$501,646	\$508,874
	1890	\$71,942	\$619,188	\$507,235	\$667,868	\$3,766,670	\$2,874,580	\$185,459	\$302,103
Men, 16 years and over .....	1900	.11	602	251	1,266	3,920	1,366	324	185
	1890	30	324	1,253	685	6,133	2,399	250	78
Wages .....	1900	\$4,602	\$237,620	\$112,609	\$33,923	\$1,921,588	\$370,423	\$174,879	\$91,999
	1890	\$14,862	\$168,205	\$193,594	\$193,455	\$2,377,868	\$1,527,801	\$106,030	\$59,352
Women, 16 years and over .....	1900	90	1,993	1,780	1,007	5,202	1,029	1,664	1,501
	1890	274	2,177	2,276	4,642	6,523	4,882	371	844
Wages .....	1900	\$14,387	\$444,795	\$271,876	\$186,902	\$1,191,837	\$550,420	\$324,185	\$395,695
	1890	\$57,090	\$438,501	\$301,489	\$454,196	\$1,384,750	\$1,846,664	\$79,429	\$247,651
Children, under 16 years .....	1900	.....	106	71	10	594	8	20	80
	1890	.....	111	54	654	44	2	.....	7
Wages .....	1900	.....	\$11,603	\$5,420	\$1,142	\$65,644	\$1,426	\$2,582	\$20,780
	1890	.....	\$12,482	\$9,152	\$20,217	\$4,552	\$415	.....	\$1,100
Miscellaneous expenses .....	1900	\$2,262	\$259,040	\$34,679	\$75,749	\$1,502,680	\$1,434,508	\$234,687	\$127,382
	1890	\$7,220	\$74,268	\$54,060	\$97,243	\$406,166	\$2,521,163	\$259,844	\$35,030
Cost of materials used .....	1900	\$63,027	\$1,851,051	\$1,170,767	\$633,471	\$10,241,708	\$5,011,759	\$1,788,145	\$1,376,545
	1890	\$97,448	\$1,198,776	\$1,290,137	\$852,635	\$8,123,078	\$11,865,905	\$1,138,111	\$316,121
Value of products .....	1900	\$98,710	\$3,420,365	\$2,047,069	\$1,335,836	\$17,327,825	\$9,330,954	\$2,990,103	\$2,182,101
	1890	\$215,864	\$2,518,540	\$2,174,747	\$1,989,183	\$15,032,924	\$21,242,647	\$1,862,829	\$1,846,316

<sup>1</sup> Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this table. (See Table 11.)

TABLE 3.—CLOTHING, MEN'S, FACTORY PRODUCT: COMPARATIVE SUMMARY, 1890 AND 1900, BY STATES—Cont'd.

		Missouri.	Nebraska.	New Hamp- shire.	New Jersey.	New York.	North Caro- lina.	Ohio.	Oregon.	Pennsylva- nia.
Number of establishments.....	1900	148	(1)	9	106	2,581	14	539	3	481
	1890	59	5	17	104	2,661	3	508	5	337
Capital.....	1900	\$4,651,882		\$258,834	\$1,066,378	\$51,350,648	\$495,616	\$10,732,010	\$186,656	\$10,446,107
	1890	\$4,966,073	\$148,686	\$275,950	\$1,484,179	\$46,153,319	\$14,180	\$13,106,296	\$119,715	\$15,609,046
Salaried officials, clerks, etc., number.....	1900	386		25	78	3,542	87	785	7	891
	1890	282	9	31	122	5,299	7	1,147	8	987
Salaries.....	1900	\$511,386		\$20,572	\$91,563	\$3,785,990	\$71,471	\$805,898	\$3,418	\$319,176
	1890	\$345,549	\$8,644	\$21,682	\$125,739	\$5,592,605	\$5,260	\$1,155,882	\$7,020	\$367,887
Wage-earners, average number.....	1900	6,129		245	2,756	41,300	860	6,521	171	10,497
	1890	6,113	238	679	2,542	54,110	49	15,210	65	7,675
Total wages.....	1900	\$1,693,725		\$68,989	\$1,008,327	\$19,579,938	\$148,267	\$2,143,619	\$42,879	\$4,422,074
	1890	\$1,772,799	\$71,006	\$141,511	\$925,275	\$24,100,196	\$11,700	\$3,567,738	\$43,040	\$3,238,617
Men, 16 years and over.....	1900	957		24	1,162	24,274	138	1,980	20	5,024
	1890	1,597	29	70	903	28,810	7	6,690	65	3,794
Wages.....	1900	\$469,065		\$13,882	\$569,348	\$14,626,270	\$41,657	\$1,061,551	\$7,315	\$2,962,561
	1890	\$744,386	\$14,780	\$36,782	\$470,155	\$17,169,092	\$2,000	\$1,973,669	\$43,040	\$2,212,757
Women, 16 years and over.....	1900	5,098		220	1,523	16,700	650	4,865	151	5,115
	1890	4,453	196	609	1,619	25,115	42	8,459		3,711
Wages.....	1900	\$1,214,440		\$55,032	\$429,292	\$4,908,233	\$100,440	\$1,063,053	\$35,564	\$1,400,067
	1890	\$1,020,877	\$54,640	\$104,729	\$452,863	\$6,907,147	\$9,700	\$1,579,559		\$1,053,932
Children, under 16 years.....	1900	74		1	71	326	72	176		358
	1890	88	13		20	185		61		170
Wages.....	1900	\$10,220		\$75	\$9,687	\$45,385	\$6,170	\$19,010		\$59,446
	1890	\$7,536	\$1,586		\$2,257	\$23,957		\$14,410		\$31,823
Miscellaneous expenses.....	1900	\$685,073		\$18,413	\$212,421	\$20,396,003	\$23,238	\$2,044,440	\$4,471	\$2,137,272
	1890	\$369,911	\$9,631	\$7,470	\$514,331	\$6,937,994	\$4,199	\$1,034,007	\$56,823	\$4,053,254
Cost of materials used.....	1900	\$5,095,150		\$253,300	\$1,328,182	\$64,500,271	\$639,472	\$9,112,231	\$107,089	\$12,212,763
	1890	\$4,566,017	\$173,491	\$421,500	\$1,154,501	\$45,898,538	\$42,500	\$9,936,196	\$299,540	\$14,780,351
Value of products.....	1900	\$8,925,088		\$418,324	\$3,093,333	\$126,478,057	\$1,037,286	\$16,593,824	\$165,204	\$23,389,043
	1890	\$8,113,852	\$348,100	\$654,712	\$3,210,353	\$96,880,957	\$72,000	\$20,604,134	\$462,970	\$26,732,348

		Rhode Island.	South Carolina.	Tennessee.	Texas.	Vermont.	Virginia.	West Virginia.	Wisconsin.	All other states.
Number of establishments.....	1900	(1)	5	22	11	(1) 7	9	8	89	12
	1890	6	6	5	4		7		27	4
Capital.....	1900		\$128,000	\$747,650	\$514,371	\$424,507	\$162,580	\$209,574	\$2,767,521	\$510,513
	1890	\$1,086,719	\$79,695	\$238,917	\$94,655		\$49,630		\$3,200,775	\$232,039
Salaried officials, clerks, etc., number.....	1900		12	76	36	82	28	6	233	63
	1890	78	15	21	10		9		142	7
Salaries.....	1900		\$5,117	\$70,215	\$38,990	\$43,765	\$17,260	\$6,010	\$266,157	\$57,002
	1890	\$113,672	\$14,674	\$25,343	\$16,000		\$4,720		\$162,733	\$6,025
Wage-earners, average number.....	1900		176	1,513	532	526	324	88	2,327	340
	1890	463	100	269	239		101		2,662	171
Total wages.....	1900		\$37,401	\$323,949	\$130,602	\$145,334	\$53,328	\$28,692	\$606,850	\$214,133
	1890	\$193,580	\$27,170	\$68,669	\$47,000		\$19,368		\$582,992	\$104,220
Men, 16 years and over.....	1900		15	258	55	73	65	13	503	93
	1890	232	9	29	169		22		715	111
Wages.....	1900		\$6,250	\$90,702	\$24,161	\$39,309	\$16,046	\$5,172	\$238,454	\$41,151
	1890	\$127,858	\$5,720	\$15,303	\$33,260		\$9,213		\$267,495	\$38,898
Women, 16 years and over.....	1900		158	1,234	445	453	245	75	1,765	730
	1890	231	91	240	70		79		1,947	54
Wages.....	1900		\$30,668	\$231,004	\$102,233	\$106,025	\$35,332	\$23,520	\$960,232	\$170,919
	1890	\$70,722	\$21,450	\$53,360	\$13,740		\$10,175		\$315,497	\$14,190
Children, under 16 years.....	1900		3	21	32		14		59	17
	1890									6
Wages.....	1900		\$483	\$2,243	\$4,203		\$1,450		\$8,114	\$2,113
	1890									\$1,132
Miscellaneous expenses.....	1900		\$14,656	\$40,515	\$31,343	\$32,076	\$7,175	\$36,945	\$511,763	\$52,365
	1890	\$585,106	\$3,696	\$17,224	\$16,661		\$1,833		\$258,831	\$25,357
Cost of materials used.....	1900		\$186,839	\$960,641	\$346,943	\$350,813	\$277,264	\$355,565	\$2,369,930	\$349,350
	1890	\$1,132,503	\$106,700	\$303,300	\$167,500		\$56,123		\$2,317,771	\$113,551
Value of products.....	1900		\$306,250	\$1,631,075	\$616,584	\$728,652	\$417,885	\$501,050	\$4,393,092	\$1,119,300
	1890	\$2,234,940	\$185,200	\$438,712	\$299,336		\$101,959		\$3,909,726	\$270,933

<sup>1</sup> Reported in "all other states."

<sup>2</sup> Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this table. (See Table 11.)

<sup>3</sup> Includes establishments distributed as follows: Arkansas, 2; Colorado, 1; Delaware, 1; Mississippi, 2; Nebraska, 2; Rhode Island, 2; Utah, 1; Washington, 1

<sup>4</sup> Includes establishments distributed as follows: Colorado, 2; Mississippi, 1; Vermont, 1.

While in the state of New York the number of establishments and the number of wage-earners and their wages showed the greatest decrease, that state reported an increase in the value of products of \$29,597,100, or more than the increase for the whole country. The total number of wage-earners decreased 12,810 and their wages \$4,520,258. This decrease in the number of establishments and wage-earners must be ascribed to the impossibility of obtaining data from all of the contractors' shops, but, notwithstanding this fact, the cost of producing the clothing is approximately correct as returned, as the manufacturers, under miscellaneous expenses, reported the amount spent for contract work, and this item showed an increase over the figures of 1890 of \$13,458,009, or 194 per cent, of which the largest proportion came under the head of contract work. One reason for the increase in the value of products in New York was that in a number of plants there had been applied new methods of manufacture, whereby the output had been increased without corresponding increase in the number of persons employed. Another reason was that the greater part of the clothing which formerly was manufactured in Massachusetts is now made in New York. Illinois showed an extraordinary increase in the number of establishments, but the total number of wage-earners and their wages remained almost stationary. The value of products increased \$3,752,276, the second largest increase among the states. While the total number of wage-earners showed a small decrease, the relative number of men and women employed underwent a great change. In 1890 the number of men was 12,312, and of women 3,618; in 1900 the number of men had decreased to 5,094, while the number of women had increased to 9,105. The number of children employed increased more than tenfold.

The same reasons which apply to New York regarding the decrease in the number of wage-earners and their wages and a corresponding increase in the amount used for miscellaneous expenses, including contract work, apply also to Illinois, where the miscellaneous expenses increased \$4,312,509, or 156.7 per cent. The third largest increase was shown in Maryland, where the number of establishments increased

\*

from 125 to 139, or 11.2 per cent, and the value of products from \$15,032,924 to \$17,327,825, a gain of \$2,294,901, but the number of wage-earners decreased from 12,700 to 9,725, and their wages from \$3,766,670 to \$3,179,069. There was a corresponding increase in the amount of miscellaneous expenses, including contract work.

The number of establishments in California decreased considerably, but the value of products increased from \$2,568,921 to \$3,869,891, a gain of \$1,300,970. The number of wage-earners in California almost doubled. While Kentucky showed the second largest decrease in the number of establishments, the number of wage-earners in that state increased slightly and there was a considerable increase in the value of products.

Massachusetts showed a marked decrease in all items. The number of wage-earners decreased 3,950, from 7,283 to 3,333; their wages \$1,452,602, from \$2,874,880 to \$1,422,278; and the value of products \$11,411,693, from \$21,242,647 to \$9,830,954. The principal reason for this remarkable decrease was that the strict enforcement of the laws restricting the manufacture of clothing to places where it can be carried on under sanitary conditions, and the application of the label "Tenement made" to garments not made in factories caused many of the manufacturers in Massachusetts to have their clothing manufactured in New York and other neighboring states. The second largest decrease appeared in Ohio, where, though the number of establishments increased with 31, the value of products decreased \$4,010,310, the total number of wage-earners from 15,210 to 6,521 and their wages from \$3,567,738 to \$2,143,619. The miscellaneous expenses, including contract work, increased from \$1,034,007 to \$2,044,440. While there was a considerable increase in the number of establishments in Pennsylvania, that state showed the third largest decrease in the value of products. The total number of wage-earners increased from 7,695 to 10,497 and their wages from \$3,298,517 to \$4,422,074. To offset this increase the amount expended for miscellaneous expenses, including contract work, decreased from \$4,053,254 to \$2,137,272.

Table 4 is a summary of establishments, classified by the number of wage-earners employed for 1900, by states, arranged geographically.

MANUFACTURES.

TABLE 4.—CLOTHING, MEN'S, FACTORY PRODUCT: ESTABLISHMENTS CLASSIFIED BY NUMBER OF PERSONS EMPLOYED, BY STATES, ARRANGED GEOGRAPHICALLY, 1900.

	Total number of establishments	NUMBER OF ESTABLISHMENTS EMPLOYING—								
		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.
United States.....	5,781	211	1,116	2,707	1,142	303	186	47	17	2
New England states.....	266	7	35	97	91	26	8	2		
Maine.....	42	1	2	12	16	8	3			
New Hampshire.....	9		2	2	2	1	1			
Vermont.....	7		1	3	1	1	1			
Massachusetts.....	194	6	29	72	69	14	3	1		
Rhode Island.....	2		2	2						
Connecticut.....	12		2	8	1	1				
Middle states.....	3,258	105	656	1,567	677	150	71	21	10	1
New York.....	2,581	79	526	1,265	521	83	40	14	8	
New Jersey.....	106		11	55	24	9	6	1		
Pennsylvania.....	481	24	93	196	110	39	14	3	2	
Delaware.....	1		1	1	1					
Maryland.....	189	2	26	51	21	19	11	3	5	1
Southern states.....	310	5	84	108	47	29	32	5		
West Virginia.....	3	1			1	1				
Virginia.....	9			2	3	3	1			
North Carolina.....	14			2	2	5	5			
South Carolina.....	5									
Georgia.....	18	1			1	3	3			
Kentucky.....	192	1	79	85	18	2	6			
Tennessee.....	22			3	7	5	6	1		
Alabama.....	7	1	3	1	2		6	1		
Mississippi.....	2						1			
Arkansas.....	2		1				1			
Louisiana.....	25	1		7	5	4	5	3		
Texas.....	11			5	3	1	2			
Central states.....	1,790	71	312	908	314	93	68	18	5	1
Ohio.....	589	15	168	263	64	21	8			
Michigan.....	40	2	4	10	12	4	6	1	1	
Indiana.....	31		1	5	7	6	8	4		
Illinois.....	906	42	106	501	186	39	22	2	2	
Wisconsin.....	89	3	5	45	21	6	9			
Minnesota.....	25		3	8	4	2	5	3		
Iowa.....	18	1		1	5	6	4	1		
Missouri.....	148	8	25	75	15	9	6	7	2	1
Western states.....	7		1	1		1	3	1		
Nebraska.....	2						1	1		
Utah.....	1					1				
Colorado.....	1						1			
Kansas.....	3		1	1			1			
Pacific states.....	100	23	28	26	13	4	4		2	
Washington.....	1			1						
Oregon.....	3	1	1				1			
California.....	96	22	27	25	13	4	3		2	

Table 4 exhibits very forcibly the conditions under which the manufacture of men's clothing, factory product, was carried on. Of the total number of establishments reported, not less than 1,327, or 23.2 per cent, either did not employ any help or employed less than 5 persons. The small shops employing between 5 and 20 persons constituted the largest proportion; of these there were 2,707, or 47.2 per cent. There were 1,142 establishments, or 19.9 per cent, employing between 21

and 50 workers, and 489, or 8.5 per cent, in which the workers numbered between 51 and 250. Only 66 factories, or 1.2 per cent of the total, employed more than 250 hands.

Table 5 shows the total number of wage-earners, with wages; the number of men, women, and children, with wages; and the per cent of each to the total number, by geographic divisions, for 1900.

TABLE 5.—CLOTHING, MEN'S, FACTORY PRODUCT: WAGE-EARNERS AND WAGES, BY GEOGRAPHIC DIVISIONS, 1900.

	Total average number.	Per cent of total average number.	Total wages.	MEN.			WOMEN.			CHILDREN.		
				Average number.	Per cent of total average number.	Total wages.	Average number.	Per cent of total average number.	Total wages.	Average number.	Per cent of total average number.	Total wages.
United States.....	120,950	100.0	\$45,505,778	48,077	39.7	\$27,323,966	69,862	57.8	\$17,766,507	3,011	2.5	\$415,805
New England states.....	5,530	4.6	1,966,518	1,819	32.9	1,045,201	3,692	66.8	918,674	19	.3	2,643
Middle states.....	64,308	53.2	28,197,428	24,393	37.9	20,081,003	28,566	44.4	7,936,268	1,349	2.1	180,162
Southern states.....	9,924	8.2	2,120,455	1,561	15.7	594,490	7,952	80.1	1,484,019	411	4.2	41,046
Central states.....	37,926	31.3	12,237,505	9,404	24.8	5,214,064	27,314	72.0	6,886,445	1,208	3.2	186,996
Western states.....	675	.6	180,355	65	9.6	32,495	601	89.1	146,642	9	1.3	1,218
Pacific states.....	2,587	2.1	803,517	885	32.3	356,718	1,737	67.1	444,464	15	.6	2,840

The total number of wage-earners reported was 120,950, and the total wages \$45,505,778. Of this total 48,077, or 39.7 per cent, were men, receiving \$27,323,966 in wages. The number of women was 69,862, or 57.8 per cent, who received \$17,766,507 in wages, and the number of children was 3,011, or 2.5 per cent, receiving \$415,305 in wages.

The number of wage-earners in the Middle states was 64,308, or 53.2 per cent of the total, who produced 61.5 per cent of the total product, while in the Central states the number of wage-earners was 37,926, or 31.3 per cent, who, however, produced only 27.9 per cent of the product. In the Southern states the number of wage-earners was 9,924, or 8.2 per cent, who produced

4.2 per cent of the product. In the New England states the number of wage-earners was 5,530, or 4.6 per cent of the total, who produced 4.6 per cent of the products. In the Pacific states 2,587 wage-earners, or 2.1 per cent, produced 1.5 per cent of the product. It should be remembered that the workers in this industry, as a rule, work on full time for only about eight months in a year; for one or two months they work on half time, and as a rule they are idle about two months.

Table 6 presents a comparison between the number of establishments, capital, and value of products for 1890 and 1900, by states, arranged geographically; also the percentage of total and of increase of each item.

TABLE 6.—CLOTHING, MEN'S, FACTORY PRODUCT: COMPARATIVE SUMMARY, NUMBER OF ESTABLISHMENTS, CAPITAL, AND VALUE OF PRODUCTS, BY STATES, ARRANGED GEOGRAPHICALLY, WITH PERCENTAGES, 1890 AND 1900.

	1900						1890						PER CENT OF INCREASE, 1890 TO 1900.		
	Establishments.		Capital.		Products.		Establishments.		Capital.		Products.		Number of establishments.	Capital.	Products.
	Number.	Per cent of total.	Amount.	Per cent of total.	Value.	Per cent of total.	Number.	Per cent of total.	Amount.	Per cent of total.	Value.	Per cent of total.			
United States.....	5,731	100.0	\$120,620,851	100.0	\$276,861,607	100.0	4,867	100.0	\$128,253,547	100.0	\$251,019,609	100.0	17.8	16.0	10.3
New England states.....	266	4.6	5,092,941	4.2	12,626,756	4.6	335	6.9	13,329,441	10.4	26,224,537	10.5	120.6	161.8	151.9
Maine.....	42	0.7	448,752	0.4	1,835,886	0.5	87	1.8	664,430	0.5	1,989,183	0.8	151.7	133.2	132.8
New Hampshire.....	9	0.2	258,834	0.2	418,324	0.2	17	0.4	275,950	0.2	654,712	0.3	147.1	16.2	136.1
Massachusetts.....	194	3.3	3,793,174	3.1	9,890,954	3.5	221	4.5	11,254,626	8.8	21,242,647	8.5	112.2	160.3	153.7
Connecticut.....	12	0.2	188,274	0.1	279,850	0.1	3	0.1	8,850	0.0	20,280	0.0	300.0	4,011.0	1,279.9
All other New England states.....	9	0.2	488,907	0.4	761,792	0.3	7	0.1	1,130,585	0.9	2,317,715	0.9	28.6	161.2	167.1
Middle states.....	3,258	56.9	71,326,449	59.1	170,808,308	61.5	3,227	66.3	73,029,187	56.9	141,856,582	56.5	1.0	12.3	20.1
New York.....	2,531	44.2	51,850,648	42.6	126,478,057	45.7	2,661	54.7	46,153,319	36.0	96,880,957	38.6	14.9	11.3	30.5
New Jersey.....	(4)						104	2.1	1,484,179	1.1	3,210,358	1.3			
Pennsylvania.....	481	8.4	10,446,107	8.6	23,389,043	8.5	337	6.9	15,609,046	12.2	26,732,348	10.6	42.7	133.1	112.5
Maryland.....	139	2.4	8,458,116	7.0	17,327,825	6.2	125	2.6	9,782,643	7.6	15,032,924	6.0	11.2	113.5	15.3
All other Middle states..	107	1.9	1,071,578	0.9	3,113,833	1.1									
Southern states.....	310	5.4	5,725,477	4.8	11,634,945	4.2	316	6.5	3,017,421	2.4	6,388,705	2.5	11.9	89.7	32.1
West Virginia.....	3	0.1	209,574	0.2	501,050	0.2									
Virginia.....	9	0.2	162,580	0.1	417,885	0.2	7	0.1	49,630	0.0	101,959	0.0	28.6	227.6	309.9
North Carolina.....	14	0.2	495,616	0.4	1,037,286	0.4	3	0.1	14,150	0.0	72,000	0.0	336.7	3,402.6	1,340.8
South Carolina.....	5	0.1	128,000	0.1	306,250	0.1	6	0.1	79,695	0.1	185,200	0.1	116.7	60.6	65.4
Georgia.....	18	0.3	514,060	0.4	1,120,607	0.4	13	0.3	145,105	0.1	352,451	0.1	33.5	254.3	217.9
Kentucky.....	192	3.3	1,509,136	1.3	3,420,365	1.2	243	5.1	1,146,454	0.9	2,518,540	1.0	122.6	31.6	55.8
Tennessee.....	22	0.4	747,650	0.6	1,631,075	0.6	5	0.1	288,917	0.2	488,712	0.2	340.0	213.0	233.7
Alabama.....	7	0.1	96,004	0.1	232,454	0.1	(6)								
Louisiana.....	25	0.4	1,167,306	1.0	2,047,069	0.7	26	0.5	1,169,927	0.9	2,174,747	0.9	13.8	10.2	15.9
Texas.....	11	0.2	614,371	0.4	616,684	0.2	4	0.1	94,655	0.1	299,336	0.1	175.0	443.4	106.0
All other Southern states.	74	0.1	180,680	0.2	274,320	0.1	84	0.1	78,888	0.1	195,750	0.1	0.0	129.0	40.1
Central states.....	1,790	31.2	36,323,852	30.5	77,865,453	27.9	849	17.5	37,600,748	29.3	72,767,722	29.0	110.8	12.1	6.3
Ohio.....	539	9.4	10,732,010	8.9	16,593,824	6.0	508	10.5	13,106,296	10.2	20,604,134	8.2	6.1	118.2	119.5
Michigan.....	40	0.7	1,461,590	1.2	2,990,108	1.1	20	0.4	642,602	0.5	1,862,829	0.8	100.0	127.4	60.5
Indiana.....	31	0.5	1,691,177	1.4	3,367,331	1.2	22	0.5	1,115,219	0.9	2,670,179	1.0	40.9	51.7	31.0
Illinois.....	900	15.7	18,634,712	11.3	37,378,717	13.5	199	4.1	13,275,575	10.3	33,626,441	13.4	352.3	3.1	11.2
Wisconsin.....	89	1.6	2,767,521	2.3	4,393,092	1.6	27	0.6	3,200,775	2.5	3,909,726	1.6	229.6	118.5	12.4
Minnesota.....	25	0.4	1,174,446	1.0	2,182,101	0.8	7	0.1	857,308	0.7	1,846,816	0.5	257.1	37.0	62.1
Iowa.....	18	0.3	660,514	0.5	1,534,697	0.5	7	0.1	436,900	0.3	784,245	0.3	157.1	51.2	109.0
Missouri.....	148	2.6	4,651,832	3.9	8,925,088	3.2	59	1.2	4,966,073	3.9	8,113,852	3.2	150.8	16.3	10.0
Western states.....	7	0.1	401,667	0.3	878,570	0.3	14	0.2	432,338	0.3	760,172	0.3	150.0	17.1	17.1
Kansas.....	3	0.0	93,809	0.1	98,710	0.0	7	0.1	95,304	0.1	215,864	0.1	157.1	12.2	154.3
All other Western states.	4	0.1	307,858	0.2	779,860	0.3	107	0.1	336,434	0.2	544,308	0.2	142.9	18.5	46.0
Pacific states.....	100	1.8	1,249,965	1.1	4,047,575	1.5	126	2.6	844,412	0.7	3,031,891	1.2	120.6	48.0	33.5
Oregon.....	(11)						5	0.1	119,715	0.1	462,970	0.2			
California.....	95	1.7	1,060,934	0.9	3,869,891	1.4	121	2.5	724,697	0.6	2,568,921	1.0	120.7	46.4	50.6
All other Pacific states..	124	0.1	189,031	0.2	177,684	0.1									

<sup>1</sup>Decrease.

<sup>2</sup>Includes establishments distributed as follows: Rhode Island, 2; Vermont, 7.

<sup>3</sup>Includes establishments distributed as follows: Rhode Island, 6; Vermont, 1.

<sup>4</sup>See "all other Middle states."

<sup>5</sup>Includes establishments distributed as follows: Delaware, 1; New Jersey, 106.

<sup>6</sup>See "all other Southern states."

<sup>7</sup>Includes establishments distributed as follows: Arkansas, 2; Mississippi, 2.

<sup>8</sup>Includes establishments distributed as follows: Alabama, 3; Mississippi, 1.

<sup>9</sup>Includes establishments distributed as follows: Colorado, 1; Nebraska, 2; Utah, 1.

<sup>10</sup>Includes establishments distributed as follows: Colorado, 2; Nebraska, 5.

<sup>11</sup>See "all other Pacific states."

<sup>12</sup>Includes establishments distributed as follows: Oregon, 3; Washington, 1.

As in 1890, the 5 Middle states reported more than one-half of the industry. But while these states in 1890 reported 3,227 establishments, or 66.3 per cent of the aggregate for the United States, the number had increased only 1 per cent in 1900, to 3,258, a decrease to 56.9 per cent of the aggregate. The capital in the Middle states decreased during the decade 2.3 per cent, from \$73,029,187 to \$71,326,449, but its proportion of the aggregate increased from 56.9 to 59.1 per cent. In 1900 the value of products in the Middle states was \$170,308,308, or 61.5 per cent of the aggregate, against \$141,856,582, or 56.5 per cent, in 1890, an increase of \$28,451,726, or 20.1 per cent.

The Central states formed the group second in importance, the number of establishments in this group increasing from 849 in 1890 to 1,790 in 1900. At the beginning of the decade the number of establishments constituted 17.5 per cent of the aggregate, and at the end of the decade 31.2 per cent. During the same time the capital in this group decreased 2.1 per cent, from \$37,600,748 to \$36,823,852, an increase from 29.3 per cent of the aggregate to 30.5 per cent. The value of products increased \$4,597,731, or 6.3 per cent, from \$72,767,722 to \$77,365,453, but its proportion of the aggregate decreased from 29 per cent to 27.9.

The New England states still ranked third, by a small margin, in the value of products, but during the decade the Southern states passed them in respect to number of establishments and capital invested. The total number of establishments in the New England states decreased from 335 to 266; in 1890 they constituted 6.9 per cent of the aggregate, and in 1900, 4.6 per cent. The capital decreased 61.8 per cent, from \$13,329,441 to \$5,092,941, constituting only 4.2 per cent of the aggregate in 1900 against 10.4 per cent in 1890. The value of products decreased 51.9 per cent, from \$26,224,537 to \$12,626,756. In 1900 it constituted 4.6 per cent of the aggregate, against 10.5 per cent in 1890.

While the number of establishments in the Southern states showed a decrease during the decade from 316 to 310, the capital increased 89.7 per cent, from \$3,017,421 to \$5,725,477, or from 2.4 per cent of the aggregate to 4.8 per cent. The value of products increased 82.1 per cent, from \$6,388,705 to \$11,634,945, and was 4.2 per cent of the aggregate in 1900, against 2.5 per cent in 1890.

The industry was not carried on to any considerable extent in the Western and Pacific states.

Among the Middle states, New York showed a decrease in the number of establishments. In 1890, 54.7 per cent of the establishments of the industry were located in New York, but in 1900 the percentage was only 44.2. The capital invested increased \$5,197,329, or 11.3 per cent, from \$46,153,319 to \$51,350,648, making it 42.6 per cent of the aggregate in 1900 against 36 per cent in 1890. New York was the only state that showed any noteworthy increase in the

aggregate percentage of capital invested. The value of products in New York increased \$29,597,100, or 30.5 per cent, from \$96,880,957 to \$126,478,057. In 1900 New York produced 45.7 per cent of the aggregate product for the industry against 38.6 per cent in 1890. The only other state in this division showing an increase in the value of products was Maryland, where this item increased 15.3 per cent, while the capital invested decreased 13.5 per cent. Pennsylvania showed a considerable decrease in capital and in value of products, the former decreasing from \$15,609,046 to \$10,446,107, or 33.1 per cent, being only 8.6 per cent of the aggregate in 1900 against 12.2 per cent in 1890. The value of products decreased from \$26,732,348 to \$23,389,043, or 12.5 per cent, and was 8.5 per cent of the aggregate in 1900 against 10.6 per cent in 1890. In New Jersey the industry remained almost stationary.

Among the Central states, Illinois showed the largest increase in number of establishments and in value of products, but only a slight increase in capital invested. The relative position of Illinois remained the same; in 1900 the capital invested constituted 11.3 per cent of the aggregate against 10.3 per cent in 1890, and the value of products 13.5 per cent against 13.4 per cent in 1890. The only state among the Central states showing a decrease was Ohio. The capital invested decreased from \$13,106,296 to \$10,732,010, or 18.2 per cent, and the value of products from \$20,604,134 to \$16,593,824, or 19.5 per cent. In 1900 the capital invested in the industry in Ohio constituted 8.9 per cent of the aggregate against 10.2 per cent in 1890 and the value of products 6 and 8.2, respectively. All the other states in this group showed increases in the value of products, but their proportion of the aggregate remained practically the same.

The greatest changes took place in the New England group. With the exception of Connecticut and Vermont, in which states the industry hardly existed in 1890, every state showed a considerable decrease in number of establishments, as well as in capital and product. The largest decrease appeared in Massachusetts, where the capital decreased \$7,461,452, from \$11,254,626 to \$3,793,174, or 66.3 per cent, and the value of products \$11,411,693, from \$21,242,647 to \$9,830,954, or 53.7 per cent. In 1900 the percentage of the aggregate capital was 3.1 and of the aggregate product 3.5, against 8.8 and 8.5, respectively, in 1890. The reason for this decrease has already been shown.

The most noteworthy changes in the Southern group appear in the states of North Carolina, Tennessee, and Georgia. In 1890 the capital in North Carolina was \$13,150 and the value of products \$72,000; in 1900 the capital had increased to \$495,616 and the value of products to \$1,037,286. In Tennessee the value of products increased from \$488,712 in 1890 to \$1,631,075 in 1900, and in Georgia from \$352,461 to \$1,120,607. In Kentucky the value of products increased from

\$2,518,540 to \$3,420,365. The only state in this group showing a decrease was Louisiana, where the value of products decreased from \$2,174,747 in 1890 to \$2,047,069 in 1900.

While the number of establishments in California decreased from 121 in 1890 to 96 in 1900, the capital increased from \$724,697 to \$1,060,934, and the value of products from \$2,568,921 to \$3,869,891.

Table 7 is a comparative summary of capital for 1890 and 1900, with the percentage of each item to the total and the per cent of increase for the decade.

TABLE 7.—CLOTHING, MEN'S, FACTORY PRODUCT: COMPARATIVE SUMMARY, CAPITAL, 1890 AND 1900, WITH PER CENT OF INCREASE.

	1900		1890		Per cent of increase.
	Amount.	Per cent of total.	Amount.	Per cent of total.	
Total.....	\$120,620,351	100.0	\$128,258,547	100.0	16.0
Land.....	2,528,189	2.1	2,069,521	1.6	22.2
Buildings.....	3,713,776	3.1	3,269,222	2.5	18.7
Machinery, tools, and implements.....	5,284,736	4.4	3,020,620	2.4	75.0
Cash and sundries..	109,088,650	90.4	119,894,184	93.5	19.1

<sup>1</sup> Decrease.

The total capital decreased 6 per cent, from \$128,258,547 to \$120,620,351. This decrease is accounted for, in part at least, by changes in business methods. Formerly the manufacturers carried large stocks of clothing and materials on hand; now the goods are made up as fast as the orders come in, and only small quantities are kept in stock. The unreasonably long credits which used to be given in the clothing trade have been considerably shortened, and the prosperous times enable the retailers to settle their accounts with the manufacturers in a prompt manner. These reasons account for the decrease of \$10,805,534, or 9.1 per cent, from \$119,894,184 in 1890 to \$109,088,650 in 1900, in the last item—"cash and sundries." This item includes cash on hand, bills receivable, unsettled ledger accounts, raw materials, stock in process of manufacture, finished products on hand, and other sundries. On the other hand the extended use of machinery caused an increase of 75 per cent in the value of machinery, tools, and implements, which increased \$2,264,116—from \$3,020,620 in 1890 to \$5,284,736 in 1900. The value of land and buildings also showed increases, but the relative proportion of all the items of the total remained almost the same. Another reason for the decrease in capital was that some of the wholesale clothiers, who in 1890 returned schedules as manufacturers and reported the amount they had invested in the industry, although at that time they did very little manufacturing themselves, having almost all their work done by contractors, in 1900 carried on the manufacture in their own factories without reporting a larger capital invested. Few of those who reported for the first time in 1900

were large concerns, but mostly small shops requiring only a nominal capital. This is substantiated by the facts as they appear in Illinois and Pennsylvania.

In Illinois the number of establishments in 1890 was 199, with a capital of \$13,275,575, or an average capital of \$66,711. In 1900 the number of establishments had increased to 900, but the capital only to \$13,684,712, making the average capital per establishment \$15,205. Thus the extraordinary increase in the number of establishments in this state, without a corresponding increase in the capital, was the cause of the decrease in the average capital per establishment for the United States. In Pennsylvania, where 337 establishments in 1890 had an average capital of \$46,318, in 1900, 481 establishments had an average capital of only \$21,718. In New York the tendency was different, the decrease there appearing in the number of establishments, indicating that many of the smaller shops were not reported. The increase in the capital followed as a consequence of the large increase in the volume of goods manufactured, and also indicated that the larger manufacturers had invested money in equipping plants of their own. The average capital in New York increased from \$17,344 in 1890 to \$20,289 in 1900.

The schedule of inquiry adopted for 1890 was the first which contained questions designed to show the cost of manufacture other than for wages and materials. The questions of the Twelfth Census relating to miscellaneous expenses were made as nearly uniform as possible with those of the previous census, and the returns are shown in Table 8, together with the per cent of each item to the total.

TABLE 8.—CLOTHING, MEN'S, FACTORY PRODUCT: MISCELLANEOUS EXPENSES, 1900.

	Amount.	Per cent of total.
Total.....	\$37,509,258	100.0
Rent of works.....	3,191,716	8.5
Taxes, not including internal revenue.....	326,098	0.9
Rent of offices, insurance, interest, repairs, advertising, and other sundries.....	6,909,205	18.4
Contract work.....	27,082,239	72.2

The miscellaneous expenses increased \$17,049,213, or 83.3 per cent, from \$20,460,045 to \$37,509,258. Of this total the principal item was the amount paid for contract work, which was \$27,082,239, or 72.2 per cent. It must be noted that the amount paid for contract work amounted to 59.5 per cent of the total wages paid. For rent of works \$3,191,716 was expended, or 8.5 per cent of the miscellaneous expenses. The small amount expended for rent of works indicates plainly that in this industry the burden of supplying places to carry on the work is thrown on the contractors. The small amount of taxes depended upon the fact that the largest part of the industry was carried on in rented quarters.

Table 9 shows the cost of the different materials used in 1900, with the per cent of each item to the total.

TABLE 9.—CLOTHING, MEN'S, FACTORY PRODUCT: COST OF MATERIALS, 1900.

	Amount.	Per cent of total.
Total .....	\$145,295,248	100.0
Purchased in partially manufactured form <sup>1</sup> .....	143,638,324	98.9
Fuel .....	384,844	0.3
Rent of power and heat .....	312,320	0.2
Freight .....	959,751	0.6

<sup>1</sup> Includes mill supplies, which are shown separately in Table 11.

The total cost of materials in 1900 was \$145,295,248, as compared with \$128,846,857 in 1890, an increase of \$16,448,391, or 12.7 per cent.

Of the amount expended for materials \$143,638,324, or 98.9 per cent, was spent for materials purchased in partially manufactured form; \$697,173, or five-tenths of 1 per cent, for fuel and rent of power and heat; and \$959,751, or six-tenths of 1 per cent, for freight. The small amount expended for fuel and rent of power and heat was caused by the fact that, in many of the places using power, it was supplied by the owner of the building and included in the amount charged for rent. It is impossible with the data at hand to show the proportions of any of the materials used in the manufacture of clothing.

Table 10 shows the imports and exports of domestic wearing apparel of cotton, silk, and wool, not including

knit goods, for the years 1890, 1895, and 1900, respectively.

TABLE 10.—IMPORTS AND EXPORTS OF DOMESTIC CLOTHING AND WEARING APPAREL OF COTTON, SILK, AND WOOL, 1890, 1895, AND 1900.

ARTICLES.	1900	1895	1890
IMPORTS.			
Total .....	\$3,881,491	\$5,530,066	\$2,772,668
Cotton clothing, ready-made, and other wearing apparel, not including knit goods .....	1,231,281	2,766,877	336,655
Silk clothing, ready-made, and other wearing apparel .....	1,657,641	1,818,697	595,344
Wool clothing, ready-made, and other wearing apparel, not including shawls and knit goods .....	992,619	999,492	1,840,669
EXPORTS (DOMESTIC).			
Total .....	2,172,997	834,884	553,706
Cotton wearing apparel .....	1,602,608	518,730	240,796
Wool wearing apparel .....	570,389	316,154	317,910

Table 10 indicates that the exports had almost quadrupled during the last decade, and that while the imports increased over the figures of 1890 they decreased considerably from those of 1895. Of the exports of cotton wearing apparel the largest part went to the countries in Oceania and in North and Central America, a very small percentage going to Europe and South America. The largest part of the wool wearing apparel was exported to the North and Central American countries.

Table 11 presents in detail the statistics for the manufacture of men's clothing, factory product, for 1900.

TABLE 11.—CLOTHING, MEN'S, FACTORY

	United States.	Alabama.	California.	Connecticut.	Georgia.	Illinois.	
1	Number of establishments.....	5,781	7	96	12	18	900
Character of organization:							
2	Individual.....	4,057	2	35	6	2	744
3	Firm and limited partnership.....	1,430	3	56	6	10	135
4	Incorporated company.....	243	2	5		6	21
5	Miscellaneous.....	1					
Capital:							
6	Total.....	\$120,620,851	\$96,004	\$1,060,934	\$158,274	\$514,060	\$13,684,712
7	Land.....	\$2,528,189		\$42,500	\$1,800	\$11,840	\$364,735
8	Buildings.....	\$3,718,776		\$33,000	\$18,500	\$27,700	\$558,075
9	Machinery, tools, and implements.....	\$5,284,736	\$16,189	\$103,153	\$5,220	\$71,251	\$451,695
10	Cash and sundries.....	\$109,088,650	\$79,815	\$882,281	\$133,254	\$403,269	\$12,310,207
11	Proprietors and firm members.....	7,556	9	278	18	31	1,059
Salaried officials, clerks, etc.:							
12	Total number.....	10,002	13	72	1	43	1,708
13	Total salaries.....	\$10,404,409	\$11,060	\$66,072	\$500	\$37,340	\$1,835,508
Officers of corporations—							
14	Number.....	342	3	3		9	40
15	Salaries.....	\$330,098	\$3,060	\$6,020		\$10,350	\$121,450
General superintendents, managers, clerks, etc.—							
16	Total number.....	9,660	10	69	1	34	1,668
17	Total salaries.....	\$9,574,311	\$8,000	\$60,052	\$500	\$26,990	\$1,714,058
Men—							
18	Number.....	8,685	10	58	1	31	1,394
19	Salaries.....	\$9,115,481	\$8,000	\$55,853	\$500	\$26,010	\$1,594,468
Women—							
20	Number.....	975		11		3	274
21	Salaries.....	\$458,830		\$4,199		\$980	\$119,590
Wage-earners:							
22	Greatest number employed at any one time during the year.....	141,410	199	2,600	174	1,389	18,122
23	Least number employed at any one time during the year.....	108,479	188	2,156	123	1,172	12,839
Average number of wage-earners, and total wages:							
24	Total average number.....	120,950	191	2,410	137	1,276	14,977
25	Total wages.....	\$45,505,778	\$46,546	\$758,264	\$52,822	\$230,947	\$5,845,254
Men, 16 years and over—							
26	Average number.....	48,077	16	814	68	119	5,094
27	Wages.....	\$27,323,966	\$6,265	\$348,774	\$35,866	\$44,408	\$8,007,804
Women, 16 years and over—							
28	Average number.....	69,362	165	1,581	69	1,083	9,105
29	Wages.....	7,766,507	\$39,281	\$407,150	\$16,956	\$178,070	\$2,718,585
Children, under 16 years—							
30	Average number.....	3,011	10	15		74	778
31	Wages.....	\$415,305	\$1,000	\$2,340		\$8,469	\$123,865
Average number of wage-earners, including pieceworkers, employed during each month:							
Men, 16 years and over—							
32	January.....	46,079	16	799	80	120	4,809
33	February.....	49,012	16	813	85	122	4,897
34	March.....	52,428	16	830	88	123	5,433
35	April.....	51,325	16	832	91	124	5,574
36	May.....	50,599	16	820	94	123	5,570
37	June.....	49,588	15	780	40	121	5,222
38	July.....	46,451	15	787	40	107	4,605
39	August.....	41,050	16	820	40	112	4,671
40	September.....	46,902	17	838	55	112	4,940
41	October.....	46,521	16	837	55	119	5,275
42	November.....	49,595	16	808	85	122	5,236
43	December.....	46,876	16	807	86	120	4,890
Women, 16 years and over—							
44	January.....	69,171	186	1,546	74	1,081	8,571
45	February.....	70,755	183	1,579	74	1,141	8,306
46	March.....	75,774	180	1,543	76	1,160	9,598
47	April.....	71,343	178	1,560	75	1,141	10,047
48	May.....	73,155	174	1,579	70	1,121	10,064
49	June.....	68,566	113	1,542	58	1,075	9,310
50	July.....	65,370	112	1,527	59	1,075	8,265
51	August.....	67,036	117	1,550	59	1,016	8,472
52	September.....	69,388	189	1,608	68	1,032	8,938
53	October.....	69,518	190	1,641	69	1,067	9,419
54	November.....	70,065	188	1,643	73	1,110	9,251
55	December.....	68,203	174	1,652	73	1,091	8,517
Children, under 16 years—							
56	January.....	2,980	10	12		76	786
57	February.....	3,179	10	15		83	767
58	March.....	3,184	10	16		77	814
59	April.....	3,125	10	16		79	854
60	May.....	2,871	10	15		78	645
61	June.....	3,009	10	15		68	795
62	July.....	2,838	10	14		70	711
63	August.....	2,711	10	15		67	614
64	September.....	2,865	10	15		66	721
65	October.....	3,101	10	16		66	834
66	November.....	2,911	10	13		73	776
67	December.....	3,358	10	13		82	936
Miscellaneous expenses:							
68	Total.....	\$37,509,258	\$5,593	\$241,655	\$5,732	\$25,200	\$7,065,130
69	Rent of works.....	\$3,191,716	\$3,332	\$47,640	\$2,227	\$9,962	\$453,998
70	Taxes, not including internal revenue.....	\$326,098	\$589	\$6,679	\$235	\$2,915	\$62,591
71	Rent of offices, interest, etc.....	\$6,909,205	\$1,672	\$77,343	\$3,145	\$12,273	\$1,513,221
72	Contract work.....	\$27,082,239		\$109,993	\$125	\$50	\$5,030,320
Cost of materials used:							
73	Total.....	\$145,295,248	\$152,424	\$2,309,326	\$157,227	\$657,352	\$18,211,015
74	Purchased in partially manufactured form (including "all other materials").....	\$148,557,128	\$148,071	\$2,333,520	\$155,092	\$639,142	\$17,864,057
75	Fuel.....	\$384,844	\$295	\$8,113	\$416	\$1,390	\$67,529
76	Rent of power and heat.....	\$312,329	\$753	\$7,338	\$167	\$6,080	\$40,219
77	Mill supplies.....	\$81,196	\$265	\$4,686	\$22	\$1,110	\$8,479
78	Freight.....	\$959,751	\$3,035	\$55,169	\$1,230	\$9,630	\$230,701
79	Products, total value.....	\$276,861,607	\$262,454	\$3,869,391	\$279,350	\$1,120,607	\$37,373,717
Comparison of products:							
80	Number of establishments reporting for both years.....	4,911	6	84	9	11	768
81	Census year.....	\$258,002,494	\$207,454	\$3,007,201	\$224,080	\$738,001	\$33,528,323
82	Preceding business year.....	\$227,414,226	\$218,700	\$2,719,931	\$198,200	\$527,030	\$29,268,835

CLOTHING

PRODUCT, BY STATES: 1900.

Indiana.	Iowa.	Kansas.	Kentucky.	Louisiana.	Maine.	Maryland.	Massachusetts.	Michigan.	Minnesota.	
31	18	3	192	25	42	139	194	40	25	1
12	3	2	169	8	24	59	106	16	10	2
10	3	1	16	12	14	74	76	14	13	3
9	12	1	7	5	4	5	12	10	2	4
						1				5
\$1,691,177	\$660,514	\$93,809	\$1,509,136	\$1,167,806	\$449,752	\$8,458,116	\$9,799,174	\$1,461,590	\$1,174,446	6
\$44,739	\$10,000	\$1,500	\$24,442	\$10,500	\$10,650	\$135,700	\$17,025	\$20,450	\$1,200	7
\$73,500	\$30,000	\$1,500	\$53,430	\$20,000	\$33,578	\$35,200	\$60,025	\$46,880		8
\$154,505	\$74,545	\$5,750	\$90,439	\$46,840	\$60,604	\$119,434	\$179,086	\$130,248	\$160,004	9
\$1,418,488	\$545,969	\$85,059	\$1,340,825	\$1,090,466	\$338,860	\$7,540,732	\$9,537,038	\$1,204,012	\$1,013,242	10
32	8	5	210	44	52	253	276	49	45	11
134	138	10	172	112	39	766	316	133	118	12
\$153,328	\$101,818	\$4,977	\$136,915	\$99,450	\$27,921	\$719,535	\$338,704	\$125,731	\$131,610	13
12	19	1	12	5	1	4	26	10	3	14
\$23,970	\$34,000		\$24,180	\$6,900	\$1,000	\$5,628	\$92,250	\$19,800	\$1,000	15
122	119	10	160	107	88	762	290	123	115	16
\$129,358	\$67,818	\$4,977	\$112,735	\$92,550	\$26,921	\$713,907	\$246,454	\$105,931	\$130,610	17
107	115	10	145	100	83	718	238	104	104	18
\$123,156	\$65,218	\$4,977	\$109,928	\$84,100	\$24,791	\$697,662	\$222,466	\$99,058	\$124,050	19
15	4		15	7	5	44	52	19	11	20
\$6,202	\$2,600		\$2,807	\$8,450	\$2,130	\$10,245	\$23,988	\$6,873	\$5,960	21
3,157	1,537	121	3,114	2,335	1,733	10,554	4,308	2,365	2,167	22
2,611	1,135	77	2,529	1,747	832	8,346	2,012	1,692	1,835	23
2,908	1,340	101	2,701	2,052	1,270	9,725	3,333	2,008	1,716	24
\$634,751	\$303,236	\$13,989	\$694,018	\$389,405	\$271,967	\$3,179,069	\$1,422,273	\$501,646	\$503,374	25
264	147	11	602	251	253	3,929	1,896	324	135	26
\$104,230	\$66,132	\$4,602	\$237,620	\$112,609	\$33,923	\$1,921,588	\$370,423	\$174,879	\$91,399	27
2,638	1,178	90	1,993	1,730	1,007	5,202	1,929	1,664	1,601	28
\$629,396	\$235,304	\$14,387	\$444,795	\$271,376	\$136,902	\$1,191,337	\$650,429	\$324,135	\$395,635	29
6	15		106	71	10	594	8	20	80	30
\$625	\$1,800		\$11,603	\$5,420	\$1,142	\$65,644	\$1,426	\$2,582	\$20,730	31
261	137	12	578	265	259	3,916	1,250	314	143	32
261	143	13	569	271	266	4,030	1,367	317	146	33
263	153	10	627	263	275	4,051	1,464	337	154	34
267	148	9	632	266	241	3,973	1,437	342	156	35
267	151	9	607	252	243	3,913	1,417	343	156	36
266	148	9	562	202	237	3,332	1,300	317	114	37
264	139	10	559	212	225	3,889	1,280	322	115	38
267	149	11	533	265	231	3,894	1,429	315	119	39
262	150	11	641	250	233	3,906	1,534	318	123	40
266	152	11	641	246	260	3,934	1,552	319	133	41
265	152	11	617	245	232	3,893	1,422	325	136	42
263	146	12	605	269	235	3,922	1,304	313	125	43
2,528	1,158	98	1,948	1,655	1,030	5,375	1,825	1,595	1,551	44
2,668	1,178	107	1,969	1,720	1,040	5,439	1,900	1,623	1,585	45
2,725	1,222	96	2,066	1,861	1,088	5,538	2,023	1,774	1,588	46
2,679	1,133	72	2,074	1,838	1,101	5,391	1,995	1,812	1,617	47
2,669	1,227	88	2,074	1,861	1,011	5,171	1,961	1,780	1,616	48
2,692	1,186	74	1,905	1,689	938	5,054	1,888	1,707	1,301	49
2,611	1,131	84	1,833	1,698	882	4,853	1,825	1,713	1,370	50
2,708	1,167	97	1,936	1,802	884	4,903	1,914	1,646	1,598	51
2,742	1,177	90	2,032	1,778	909	4,886	1,964	1,631	1,571	52
2,678	1,168	98	2,032	1,643	1,079	5,147	2,016	1,612	1,586	53
2,558	1,133	96	1,979	1,600	1,059	5,247	1,943	1,587	1,311	54
2,497	1,151	86	1,973	1,709	1,060	5,417	1,894	1,544	1,330	55
6	16		102	69	9	617	5	20	80	56
6	16		104	73	5	628	5	20	80	57
6	16		112	73	11	650	5	22	80	58
6	16		110	69	9	629	6	22	80	59
6	16		119	69	6	616	7	22	80	60
6	16		101	73	8	600	11	21	80	61
6	14		102	73	16	697	11	20	80	62
6	14		110	73	17	512	11	20	80	63
6	14		108	73	9	518	11	20	80	64
6	13		105	69	8	561	11	20	80	65
6	12		103	69	10	574	9	14	80	66
6	12		98	69	10	623	5	16	80	67
\$101,495	\$95,446	\$2,262	\$259,040	\$34,679	\$75,749	\$1,502,530	\$1,434,508	\$234,637	\$127,332	68
\$17,077	\$12,354	\$350	\$25,393	\$21,023	\$6,120	\$166,588	\$138,070	\$25,095	\$22,730	69
\$3,183	\$5,361	\$330	\$6,513	\$2,314	\$2,737	\$32,465	\$29,760	\$7,265	\$3,692	70
\$56,235	\$77,231	\$1,032	\$108,519	\$52,942	\$20,595	\$511,617	\$183,544	\$119,696	\$50,960	71
\$20,000			\$118,105	\$7,900	\$46,297	\$791,860	\$1,083,134	\$32,631	\$50,000	72
\$2,005,942	\$910,106	\$33,027	\$1,851,051	\$1,170,767	\$333,471	\$10,241,708	\$5,011,759	\$1,738,145	\$1,376,545	73
\$1,947,328	\$333,684	\$37,593	\$1,312,974	\$1,146,295	\$368,702	\$10,185,798	\$4,972,205	\$1,701,709	\$1,347,632	74
\$7,288	\$3,404	\$672	\$6,232	\$308	\$5,448	\$15,467	\$6,653	\$2,996	\$2,130	75
\$11,049	\$2,758	\$50	\$5,459	\$5,536	\$3,723	\$10,959	\$7,704	\$9,723	\$9,723	76
\$2,699	\$754	\$29	\$2,373	\$475	\$312	\$7,705	\$2,577	\$2,278	\$1,185	77
\$36,973	\$19,506	\$4,633	\$23,963	\$17,653	\$6,247	\$21,749	\$10,820	\$23,458	\$16,370	78
\$3,337,331	\$1,534,697	\$38,710	\$3,420,365	\$2,047,069	\$1,335,336	\$17,327,825	\$9,830,954	\$2,990,103	\$2,132,101	79
23	14	2	170	22	28	106	171	33	17	80
\$3,273,931	\$1,491,634	\$38,400	\$3,362,422	\$2,010,669	\$1,267,086	\$16,425,275	\$9,347,136	\$2,810,332	\$1,909,526	81
\$3,091,123	\$1,327,761	\$33,750	\$2,937,390	\$1,891,726	\$1,173,410	\$14,839,439	\$8,777,520	\$2,337,016	\$1,590,100	82

TABLE 11.—CLOTHING, MEN'S, FACTORY

	United States.	Alabama.	California.	Connecticut.	Georgia.	Illinois.
83 Power: Number of establishments reporting .....	1,519	6	25	4	16	266
84 Total horsepower .....	14,178	25	236	19	154	1,977
Owned—						
Engines—						
Steam—						
85 Number .....	202		2	1	2	19
86 Horsepower .....	6,273		120	10	30	514
Gas or gasoline—						
87 Number .....	288		5		1	125
88 Horsepower .....	1,337		20		6	400
Electric motors—						
89 Number .....	80					15
90 Horsepower .....	831					848
Other power—						
91 Number .....	7					
92 Horsepower .....	23					
Water wheels—						
93 Number .....	15				1	
94 Horsepower .....	252				40	
Rented—						
95 Total horsepower .....	5,462	25	96	9	78	715
96 Electric .....	4,131	25	76	9	78	330
97 Other kind .....	1,331		20			335
98 Horsepower furnished to other establishments .....	217					64
Establishments classified by number of persons employed, not including proprietors and firm members:						
99 Total number of establishments .....	5,731	7	96	12	18	900
100 No employees .....	211	1	22			42
101 Under 5 .....	1,116	3	27	2	1	106
102 5 to 20 .....	2,707	1	25	8	3	501
103 21 to 50 .....	1,142	2	18	1	5	186
104 51 to 100 .....	303		4	1	3	39
105 101 to 250 .....	186		3		0	22
106 251 to 500 .....	47					2
107 501 to 1,000 .....	17		2			2
108 Over 1,000 .....	2					2

CLOTHING.

PRODUCT: BY STATES, 1900—Continued.

Indiana.	Iowa.	Kansas.	Kentucky.	Louisiana.	Maine.	Maryland.	Massachusetts.	Michigan.	Minnesota.	
28	16	8	16	14	22	81	111	27	16	88
426	200	25	250	121	182	984	395	316	817	84
6	4	2	1		8	11	6	3	2	85
170	106	24	60		79	740	67	102	85	86
8	5		3	1	1	12	1	3	1	87
94	43		18	4	14	96	3	49	5	88
			4		1	5			2	89
			19		2	29			20	90
							1			91
							2			92
					2					93
					25					94
162	51	1	158	117	62	69	323	165	207	95
162	47	1	138	117	61	56	211	152	162	96
	4		20		1	13	112	13	45	97
									25	98
81	18	8	192	25	42	139	194	40	25	99
	1		1	1	1	2	6	2		100
1		1	79		2	26	29	4		101
5	1	1	85	7	12	51	72	10	3	102
7	5		18	5	16	21	69	12	8	103
6	6		2	4	8	19	14	4	4	104
8	4	1	6	5	8	11	3	4	2	105
4	1		1	3		8	1	6	5	106
						5		1		107
						1				108

TABLE 11.—CLOTHING, MEN'S, FACTORY

	Missouri.	New Hampshire.	New Jersey.	New York.	North Carolina.	Ohio.	
1	Number of establishments.....	148	9	106	2,531	14	539
2	Character of organization:						
3	Individual.....	96	4	82	1,826	5	433
4	Firm and limited partnership.....	29	4	20	665	1	94
5	Incorporated company.....	23	1	4	40	8	12
6	Capital:						
7	Total.....	\$4,651,882	\$258,834	\$1,066,373	\$51,850,648	\$495,616	\$10,732,010
8	Land.....	\$73,100	\$9,300	\$59,000	\$1,043,833	\$2,900	\$139,700
9	Buildings.....	\$109,900	\$31,776	\$134,143	\$1,138,477	\$23,657	\$234,404
10	Machinery, tools, and implements.....	\$249,794	\$11,976	\$89,755	\$1,828,158	\$51,806	\$221,508
11	Cash and sundries.....	\$4,219,088	\$208,782	\$788,480	\$47,840,630	\$417,263	\$10,136,338
12	Proprietors and firm members.....	161	13	124	3,353	9	676
13	Salaried officials, clerks, etc.:						
14	Total number.....	386	25	73	3,542	87	785
15	Total salaries.....	\$511,336	\$20,572	\$91,563	\$3,785,990	\$71,471	\$805,898
16	Officers of corporations—						
17	Number.....	28	.....	2	69	17	23
18	Salaries.....	\$68,080	.....	\$2,500	\$268,140	\$20,300	\$40,470
19	General superintendents, managers, clerks, etc.—						
20	Total number.....	358	25	76	3,478	70	762
21	Total salaries.....	\$443,306	\$20,572	\$89,063	\$3,517,850	\$51,171	\$765,428
22	Men—						
23	Number.....	309	22	70	3,164	68	705
24	Salaries.....	\$386,689	\$19,178	\$86,455	\$3,379,718	\$50,511	\$740,933
25	Women—						
26	Number.....	49	3	6	809	2	57
27	Salaries.....	\$56,617	\$1,394	\$2,608	\$138,132	\$660	\$24,476
28	Wage-earners:						
29	Greatest number employed at any one time during the year.....	7,475	306	3,441	48,608	1,058	7,312
30	Least number employed at any one time during the year.....	5,483	189	2,500	37,317	850	6,327
31	Average number of wage-earners and total wages:						
32	Total average number.....	6,129	245	2,756	41,300	860	6,521
33	Total wages.....	\$1,693,725	\$63,989	\$1,008,327	\$19,579,938	\$148,267	\$2,143,619
34	Men, 16 years and over—						
35	Average number.....	957	24	1,162	24,274	138	1,980
36	Wages.....	\$469,065	\$13,832	\$569,348	\$14,626,270	\$41,657	\$1,061,651
37	Women, 16 years and over—						
38	Average number.....	5,098	220	1,523	16,700	650	4,365
39	Wages.....	\$1,214,440	\$55,082	\$429,292	\$4,908,283	\$100,440	\$1,063,058
40	Children, under 16 years—						
41	Average number.....	74	1	71	326	72	176
42	Wages.....	\$10,220	\$75	\$9,687	\$45,385	\$6,170	\$19,010
43	Average number of wage-earners, including pieceworkers, employed during each month:						
44	Men, 16 years and over—						
45	January.....	932	23	1,074	22,923	149	1,961
46	February.....	947	24	1,141	25,255	151	1,967
47	March.....	986	25	1,213	27,433	146	2,060
48	April.....	987	24	1,285	26,698	143	2,082
49	May.....	991	23	1,261	25,830	148	2,089
50	June.....	938	23	1,148	26,268	140	1,979
51	July.....	951	22	1,027	24,207	124	1,890
52	August.....	944	24	1,068	18,226	125	1,925
53	September.....	949	24	1,185	23,242	122	1,984
54	October.....	964	24	1,222	22,195	136	1,985
55	November.....	958	26	1,216	25,473	136	1,958
56	December.....	941	26	1,102	23,518	136	1,895
57	Women, 16 years and over—						
58	January.....	4,997	195	1,491	16,868	794	4,333
59	February.....	5,230	214	1,537	17,060	749	4,324
60	March.....	5,482	239	1,590	19,566	754	4,599
61	April.....	5,495	240	1,672	15,335	740	4,718
62	May.....	5,407	213	1,656	17,229	730	4,639
63	June.....	4,319	200	1,489	16,711	597	4,355
64	July.....	4,842	179	1,328	15,795	565	4,065
65	August.....	4,928	185	1,372	16,231	550	4,153
66	September.....	5,170	203	1,485	16,941	542	4,306
67	October.....	5,062	239	1,618	15,578	615	4,359
68	November.....	4,924	263	1,594	16,941	610	4,325
69	December.....	4,814	253	1,449	16,173	610	4,154
70	Children, under 16 years—						
71	January.....	71	1	73	312	79	137
72	February.....	80	1	74	451	82	131
73	March.....	80	1	74	364	83	130
74	April.....	81	1	75	280	87	130
75	May.....	85	1	76	337	90	131
76	June.....	78	1	71	314	65	174
77	July.....	70	1	64	260	60	173
78	August.....	67	1	66	304	60	177
79	September.....	76	1	68	326	60	173
80	October.....	69	1	71	358	68	173
81	November.....	67	1	71	233	68	166
82	December.....	68	1	69	511	68	168
83	Miscellaneous expenses:						
84	Total.....	\$685,073	\$13,413	\$212,421	\$20,396,003	\$28,238	\$2,044,440
85	Rent of works.....	\$111,031	\$660	\$45,136	\$1,538,956	\$4,070	\$157,092
86	Taxes, not including internal revenue.....	\$16,992	\$397	\$5,928	\$61,403	\$2,899	\$32,057
87	Rent of offices, interest, etc.....	\$153,286	\$9,020	\$66,337	\$2,830,472	\$14,869	\$109,270
88	Contract work.....	\$403,765	\$7,336	\$104,520	\$15,870,172	\$1,400	\$1,446,111
89	Cost of materials used:						
90	Total.....	\$5,095,150	\$253,300	\$1,328,182	\$64,500,271	\$639,472	\$9,112,231
91	Purchased in partially manufactured form (including "all other materials").....	\$4,999,207	\$245,608	\$1,285,988	\$64,125,920	\$619,870	\$8,943,808
92	Fuel.....	\$17,258	\$1,291	\$14,622	\$143,863	\$2,746	\$21,282
93	Rent of power and heat.....	\$20,740	\$177	\$7,012	\$96,177	\$1,968	\$15,520
94	Mill supplies.....	\$4,769	\$145	\$2,699	\$20,862	\$1,785	\$2,302
95	Freight.....	\$53,176	\$6,079	\$17,861	\$113,449	\$13,103	\$124,319
96	Products, total value.....	\$8,925,088	\$413,324	\$3,093,833	\$126,478,057	\$1,037,286	\$16,593,324
97	Comparison of products:						
98	Number of establishments reporting for both years.....	130	8	89	2,217	9	483
99	Census year.....	\$7,890,323	\$416,324	\$2,972,719	\$120,413,675	\$646,054	\$15,321,093
100	Preceding business year.....	\$7,179,212	\$373,076	\$2,604,733	\$104,949,737	\$532,528	\$13,327,716

PRODUCT: BY STATES, 1900—Continued.

Oregon.	Pennsylvania.	South Carolina.	Tennessee.	Texas.	Vermont.	Virginia.	West Virginia.	Wisconsin.	All other states. <sup>1</sup>	
3	481	5	22	11	7	9	8	89	12	1
3	384	2	2	4	3	3	1	62	4	2
	134	2	10	2	2	3	1	12	4	3
	18	1	10	5	2	3	1	15	4	4
\$186,656	\$10,446,107	\$128,000	\$747,650	\$514,371	\$424,507	\$162,580	\$209,574	\$2,707,621	\$510,513	5
	\$408,840	\$1,000	\$25,200	\$30,000	\$1,500		\$750	\$36,710	\$3,225	6
	\$452,936	\$500	\$64,814	\$42,000	\$21,789		\$2,500	\$113,750	\$35,742	7
\$10,081	\$394,780	\$8,000	\$82,481	\$66,963	\$32,167	\$16,700	\$91,124	\$108,820	\$51,600	8
\$176,575	\$9,189,651	\$118,500	\$575,165	\$375,408	\$369,061	\$145,880	\$116,200	\$2,508,241	\$419,946	9
19	659	7	81	8	8	13	1	90	15	10
7	831	12	76	36	32	28	6	233	63	11
\$3,418	\$819,176	\$5,117	\$70,215	\$88,990	\$43,765	\$17,260	\$6,010	\$206,137	\$57,002	12
	10		11	5	4			18	8	13
	\$17,280		\$12,500	\$4,800	\$7,750			\$31,920	\$6,800	14
7	821	12	65	31	28	28	6	215	55	15
\$8,418	\$801,896	\$5,117	\$57,715	\$34,190	\$36,015	\$17,260	\$6,010	\$234,237	\$50,202	16
1	766	12	62	31	26	23	5	204	49	17
\$480	\$788,688	\$5,117	\$50,865	\$34,190	\$35,295	\$14,160	\$5,610	\$229,485	\$46,350	18
6	55		3		2	5	1	11	6	19
\$2,938	\$18,308		\$850		\$720	\$3,100	\$400	\$4,752	\$3,852	20
195	12,395	204	1,070	557	687	414	95	2,619	975	21
139	9,522	184	1,309	513	419	802	74	2,176	726	22
171	10,497	176	1,513	582	526	324	88	2,827	840	23
\$42,879	\$4,422,074	\$37,401	\$323,949	\$130,602	\$145,334	\$53,328	\$28,692	\$600,850	\$214,188	24
20	5,024	15	258	55	73	65	13	503	93	25
\$7,315	\$2,962,561	\$6,250	\$90,702	\$24,161	\$39,309	\$16,046	\$5,172	\$238,454	\$41,151	26
151	5,115	158	1,234	445	453	245	75	1,765	730	27
\$35,564	\$1,400,067	\$30,668	\$231,004	\$102,233	\$106,025	\$35,332	\$23,520	\$360,282	\$170,919	28
	358	3	21	32		14		59	17	29
	\$59,446	\$433	\$2,243	\$4,208		\$1,450		\$8,114	\$2,118	30
22	4,961	16	256	55	82	67	13	490	90	31
20	5,109	16	264	56	93	69	13	491	90	32
20	5,346	16	265	56	95	69	12	509	91	33
21	5,363	16	262	56	93	73	12	506	91	34
19	5,202	16	261	56	76	73	12	500	91	35
20	4,825	16	265	55	67	61	12	513	91	36
20	4,569	13	264	55	74	60	12	600	93	37
20	4,742	18	249	54	68	60	12	510	93	38
18	4,927	13	249	55	53	62	13	504	95	39
19	5,098	18	254	55	59	62	13	511	95	40
21	5,139	18	262	55	56	62	13	497	95	41
22	5,010	16	250	55	64	62	13	503	95	42
172	5,206	164	1,264	443	513	268	72	1,661	784	43
165	5,278	164	1,226	443	542	302	77	1,711	786	44
164	5,542	174	1,284	437	531	300	82	1,765	737	45
149	5,058	174	1,225	438	512	280	80	1,725	736	46
143	5,404	174	1,251	447	506	306	82	1,737	730	47
134	4,805	179	1,263	446	394	208	82	1,740	732	48
121	4,567	140	1,234	448	385	201	82	1,736	712	49
129	4,707	140	1,196	453	364	196	80	1,780	703	50
136	4,996	140	1,201	456	380	213	82	1,785	732	51
163	5,292	140	1,203	446	406	219	82	1,878	733	52
167	5,304	140	1,223	446	445	221	72	1,822	780	53
173	5,218	164	1,225	436	464	230	72	1,855	740	54
	856	4	21	32		17		52	18	55
	358	4	21	32		20		53	18	56
	363	4	21	32		20		54	17	57
	369	4	23	32		15		56	16	58
	360	4	21	32		20		59	16	59
	355	4	24	32		10		60	17	60
	341	2	20	32		10		61	20	61
	343	2	20	32		10		61	19	62
	362	2	23	32		10		64	17	63
	367	2	21	32		10		63	17	64
	363	2	20	32		10		61	18	65
	364	4	19	32		10		64	20	66
\$4,471	\$2,137,272	\$14,656	\$40,515	\$31,343	\$32,076	\$7,175	\$36,945	\$511,763	\$52,866	67
\$1,590	\$251,787	\$1,720	\$13,006	\$4,500	\$3,480	\$3,780	\$500	\$42,039	\$3,345	68
\$1,156	\$10,102	\$865	\$2,734	\$3,401	\$544	\$905	\$235	\$17,740	\$2,106	69
\$1,725	\$369,723	\$1,500	\$20,675	\$23,442	\$28,052	\$2,490	\$1,210	\$104,645	\$41,915	70
	\$1,505,660	\$10,571	\$3,500				\$35,000	\$35,289		71
\$107,089	\$12,212,763	\$186,889	\$960,641	\$346,943	\$359,813	\$277,264	\$355,565	\$2,369,930	\$649,880	72
\$106,399	\$12,100,355	\$179,977	\$943,289	\$334,280	\$351,308	\$273,319	\$354,600	\$2,306,611	\$617,822	73
\$20	\$36,140		\$1,797	\$2,372	\$1,228	\$754	\$435	\$9,333	\$2,562	74
\$660	\$17,425	\$300	\$4,880	\$1,346	\$1,742	\$1,460		\$7,108	\$4,753	75
\$100	\$5,926	\$52	\$2,533	\$220	\$595	\$731		\$2,016	\$752	76
	\$52,837	\$0,500	\$3,137	\$3,525	\$4,945	\$1,000	\$275	\$44,312	\$23,991	77
\$165,204	\$28,389,043	\$306,250	\$1,631,075	\$616,534	\$728,652	\$417,885	\$501,050	\$4,393,002	\$1,119,800	78
8	369	4	18	6	4	6	2	85	9	79
\$165,204	\$22,078,056	\$238,250	\$1,437,075	\$231,374	\$693,976	\$356,335	\$201,050	\$4,260,706	\$1,073,160	80
\$119,401	\$20,107,628	\$198,000	\$1,293,600	\$190,758	\$495,307	\$253,261	\$150,375	\$3,603,261	\$902,608	81

<sup>1</sup> Includes establishments distributed as follows: Arkansas, 2; Colorado, 1; Delaware, 1; Mississippi, 2; Nebraska, 2; Rhode Island, 2; Utah, 1; Washington, 1.

## MANUFACTURES

TABLE 11.—CLOTHING, MEN'S, FACTORY

	Missouri.	New Hampshire.	New Jersey.	New York.	North Carolina.	Ohio.
Power:						
82 Number of establishments reporting .....	51	5	36	488	11	109
83 Total horsepower .....	1,232	105	392	8,244	188	681
Owned—						
Engines—						
Steam—						
84 Number .....	9	2	23	41	4	6
85 Horsepower .....	615	65	333	1,525	88	205
Gas or gasoline—						
86 Number .....	2		5	58	4	18
87 Horsepower .....	28		19	211	20	131
Electric motors—						
88 Number .....	4			28	1	6
89 Horsepower .....	40			200	8	32
Other power—						
90 Number .....	1			4		
91 Horsepower .....	2			7		
Water wheels—						
92 Number .....		4		2		1
93 Horsepower .....		36		88		3
Rented—						
94 Total horsepower .....	552	4	40	1,218	22	310
95 Electric .....	324	4	35	881	18	278
96 Other kind .....	228		5	337	4	32
97 Horsepower furnished to other establishments .....			15	101		11
Establishments classified by number of persons employed, not including proprietors and firm members:						
98 Total number of establishments .....	148	9	106	2,531	14	539
99 No employees .....	8			79		15
100 Under 5 .....	25	2	11	526		168
101 5 to 20 .....	75	2	55	1,265	2	263
102 21 to 50 .....	15	2	24	521	2	64
103 51 to 100 .....	9	2	9	88	5	21
104 101 to 250 .....	6	1	6	40	5	8
105 251 to 500 .....	7		1	14		
106 501 to 1,000 .....	2			8		
107 Over 1,000 .....	1					

CLOTHING.

PRODUCT: BY STATES, 1900—Continued.

Oregon.	Pennsylvania.	South Carolina.	Tennessee.	Texas.	Vermont.	Virginia.	West Virginia.	Wisconsin.	All other states. <sup>1</sup>	
1	147	1	16	9	6	7	3	23	10	82
20	1,679	10	149	66	158	45	21	430	281	88
	82		3		2		1	8	4	84
	956		52		60		10	150	107	85
	23				1			6		86
	113				5	17	11	40		87
	9		1					3	2	88
	64		4					25	40	80
	1									90
	12									91
	2				1			1		92
	38				8			6		93
20	496	10	93	63	75	28		209	84	94
20	391	10	90	63	50	18		191	83	95
	105		3		25	10		18	1	96
	5		3							97
8	481	5	22	11	7	9	3	89	12	98
1	24	1					1	3		99
1	98							5		100
	196		3	5	1	2		45	3	101
	110	1	7	3	3	3	1	21	1	102
	89	3	5	1	1	3	1	6	3	103
1	14		6	2	1	1		9	3	104
	3		1		1				1	105
	2									106
										107

<sup>1</sup> Includes establishments distributed as follows: Arkansas, 2; Colorado, 1; Delaware, 1; Mississippi, 2; Nebraska, 2; Rhode Island, 2; Utah, 1; Washington, 1.

MEN'S CLOTHING, FACTORY PRODUCT, BUTTONHOLES.

Table 12 is a comparative summary for the manufacture of buttonholes as a distinct industry at the censuses of 1890 and 1900, with the percentages of increase for the decade.

TABLE 12.—CLOTHING, MEN'S, FACTORY PRODUCT, BUTTONHOLES: COMPARATIVE SUMMARY, 1890 AND 1900, WITH PER CENT OF INCREASE FOR THE DECADE.

	DATE OF CENSUS.		PER CENT OF INCREASE.
	1900	1890	
Number of establishments	149	200	125.5
Capital	\$246,539	\$190,118	29.7
Salaried officials, clerks, etc., number	11	208	194.7
Salaries	\$5,608	\$134,103	195.8
Wage-earners, average number	944	1,165	119.0
Total wages	\$332,187	\$392,822	115.4
Men, 16 years and over	426	472	19.7
Wages	\$199,069	\$201,773	11.3
Women, 16 years and over	479	677	129.2
Wages	\$127,426	\$188,700	132.5
Children, under 16 years	39	16	143.8
Wages	\$5,692	\$2,349	142.3
Miscellaneous expenses	\$98,234	\$15,956	121.2
Cost of materials used	\$98,178	\$84,167	16.6
Value of products	\$680,502	\$784,056	113.2

<sup>1</sup> Decrease.  
<sup>2</sup> Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this table. (See Table 13.)

The manufacture of buttonholes was not reported as a separate industry prior to the census of 1890. This industry properly belongs under men's clothing, factory product, as almost the entire work is the making of buttonholes on men's garments. Latterly the tendency has been to have the buttonholes and the garments made in the same place, which explains the general decrease in the figures for the industry. Notwithstanding this general decrease, however, capital shows an increase from \$190,118 in 1890 to \$246,539 in 1900, a gain of \$56,421, or 29.7 per cent; the gain being in the items of land, buildings, machinery, etc.

As this industry, however, is usually located in rented buildings the increase shown has no real significance. The item of cash and sundries which, in this case, really has more significance, shows a decrease from \$59,965 in 1890 to \$39,589 in 1900, a loss of \$20,376.

Table 13 shows in detail the statistics relating to the manufacture of buttonholes as returned in 1900.

TABLE 13.—CLOTHING, MEN'S, FACTORY PRODUCT, BUTTONHOLES: SUMMARY BY STATES, 1900.

	United States.	Illinois.	Maryland.	Massachusetts.	Missouri.	New Jersey.	New York.	Ohio.	Pennsylvania.	All other states. <sup>1</sup>
Number of establishments	149	17	8	3	5	5	81	8	18	4
Character of organization:										
Individual	129	17	7	3	5	3	69	6	15	4
Firm and limited partnership	19		1			2	12	2	2	
Incorporated company	1								1	
Capital:										
Total	\$246,539	\$14,515	\$7,295	\$1,554	\$3,810	\$5,563	\$170,672	\$20,625	\$16,495	\$6,010
Land	\$34,305	\$4,275	\$400			\$2,200	\$26,130	\$100		\$1,200
Buildings	\$44,337	\$6,800	\$1,800			\$2,000	\$32,437	\$600		\$1,000
Machinery, tools, and implements	\$128,308	\$2,955	\$4,915	\$1,500	\$2,370	\$1,808	\$84,315	\$16,100	\$12,190	\$2,600
Cash and sundries	\$39,589	\$485	\$680	\$54	\$1,440	\$60	\$27,590	\$3,825	\$4,395	\$1,150
Proprietors and firm members	166	16	9	3	5	8	92	10	19	4
Salaried officials, clerks, etc.:										
Total number	11						9	1	1	
Total salaries	\$5,608						\$4,432	\$416	\$760	
Officers of corporations—										
Number	6						6			
Salaries	\$3,600						\$3,600			
General superintendents, managers, clerks, etc.—										
Total number	5						3	1	1	
Total salaries	\$2,008						\$332	\$416	\$760	
Men—										
Number	4						2	1	1	
Salaries	\$1,888						\$712	\$416	\$760	
Women—										
Number	1						1			
Salaries	\$120						\$120			
Wage-earners:										
Greatest number employed at any one time during the year	1,071	63	41	11	14	16	556	192	154	24
Least number employed at any one time during the year	935	43	37	6	11	12	507	162	141	16
Average number of wage-earners and total wages:										
Total average number	944	44	39	8	12	9	502	174	140	16
Total wages	\$332,187	\$15,092	\$11,384	\$4,333	\$4,458	\$2,639	\$190,208	\$51,668	\$47,768	\$4,742
Men, 16 years and over—										
Average number	426	29	16	3	7	3	252	33	76	7
Wages	\$199,069	\$11,962	\$6,406	\$2,570	\$3,228	\$1,134	\$123,476	\$16,128	\$81,212	\$2,954
Women, 16 years and over—										
Average number	479	9	21	5	5	6	236	140	49	8
Wages	\$127,426	\$2,168	\$4,782	\$1,763	\$1,230	\$1,505	\$64,681	\$35,240	\$14,456	\$1,666
Children, under 16 years—										
Average number	39	6	2				14	1	15	1
Wages	\$5,692	\$977	\$196				\$2,102	\$200	\$2,095	\$122
Average number of wage-earners, including pieceworkers, employed during each month:										
Men, 16 years and over—										
January	428	21	16	4	7	3	257	33	79	8
February	439	21	16	3	7	3	260	33	79	8
March	451	31	16	4	7	4	270	33	80	6
April	450	39	16	3	8	4	262	33	79	6
May	446	39	16	3	8	4	262	33	75	6
June	429	29	16	3	8	1	259	33	74	6
July	374	18	16	4	6		222	33	67	8
August	394	20	16	3	7		241	33	67	7
September	424	31	16	4	7		248	33	77	6
October	436	34	16	3	8	5	250	33	79	8
November	426	36	16	3	8	5	238	33	80	7
December	415	26	16	3	8	7	236	33	79	7

<sup>1</sup> Includes establishments distributed as follows: California, 1; Michigan, 1; Wisconsin, 2.

TABLE 13.—CLOTHING, MEN'S, FACTORY PRODUCT, BUTTONHOLES: SUMMARY BY STATES, 1900—Continued.

	United States.	Illinois.	Maryland.	Massachusetts.	Missouri.	New Jersey.	New York.	Ohio.	Pennsylvania.	All other states. <sup>1</sup>
Average number of wage-earners, including pieceworkers, employed during each month—Continued.										
Women, 16 years and over—										
January	478	8	19	5	4	3	247	133	49	10
February	483	8	19	5	4	4	251	133	49	10
March	492	8	19	6	4	6	250	133	49	8
April	488	11	19	5	5	8	252	128	52	8
May	516	10	23	5	5	8	253	153	51	8
June	506	10	23	5	5	6	247	153	49	8
July	439	10	23	5	4	1	212	133	42	9
August	431	10	19	4	4	7	217	128	43	6
September	484	8	23	5	4	7	224	169	52	8
October	493	8	23	5	5	10	227	153	54	8
November	465	8	23	4	5	9	224	133	51	8
December	473	8	23	4	5	5	222	146	50	8
Children, under 16 years—										
January	38	5	2				14	1	15	1
February	38	5	2				14	1	15	1
March	38	5	2				14	1	15	1
April	42	9	2				14	1	15	1
May	42	9	2				14	1	15	1
June	39	5	2				14	1	15	1
July	36	5	2		1		14	1	15	1
August	36	5	2		1		14	1	12	1
September	39	5	2		1		14	1	12	1
October	39	6	2		1		14	1	15	1
November	42	6	2				14	1	15	1
December	39	5	2				14	1	15	1
Miscellaneous expenses:										
Total	\$36,234	\$2,105	\$1,087	\$495	\$686	\$495	\$19,787	\$6,036	\$3,959	\$984
Rent of works	\$19,296	\$1,377	\$1,134	\$336	\$508	\$306	\$8,865	\$3,864	\$2,614	\$272
Taxes, not including internal revenue	\$848	\$112	\$33	\$3		\$34	\$569	\$39		\$88
Rent of offices, interest, etc.	\$15,490	\$616	\$520	\$156	\$178	\$155	\$9,718	\$2,133	\$1,345	\$674
Contract work	\$600						\$600			
Cost of materials used:										
Total	\$98,178	\$4,097	\$4,874	\$643	\$2,419	\$1,300	\$50,499	\$14,221	\$16,383	\$3,742
Purchased in partially manufactured form (including all other materials)	\$91,594	\$3,721	\$4,474	\$488	\$2,176	\$1,268	\$47,295	\$13,022	\$15,504	\$3,676
Fuel	\$2,906	\$364	\$36	\$3	\$15	\$32	\$1,908	\$217	\$208	\$63
Rent of power and heat	\$8,143		\$360	\$144	\$208		\$941	\$694	\$596	
Mill supplies	\$532	\$12	\$4	\$8	\$20		\$22	\$88	\$75	\$3
Freight	\$3						\$3			
Products, total value	\$680,502	\$32,489	\$26,382	\$8,044	\$14,112	\$9,116	\$351,205	\$94,268	\$102,181	\$42,705
Comparison of products:										
Number of establishments reporting for both years	135	13	7	3	5	4	74	8	17	4
Census year	\$625,823	\$25,197	\$21,382	\$8,044	\$14,112	\$5,414	\$321,412	\$94,268	\$93,289	\$42,705
Preceding business year	\$574,382	\$24,955	\$21,082	\$7,202	\$13,588	\$5,545	\$296,287	\$83,950	\$82,573	\$39,200
Power:										
Number of establishments reporting	42	2	2	2	3		18	6	8	1
Total horsepower	113	5	3	2	6		59	17	18	3
Owned—										
Engines—										
Steam—										
Number	1						1			
Horsepower	4						4			
Gas or gasoline—										
Number	10	2					6	1		1
Horsepower	45	5					34	3		3
Rented—										
Total horsepower	64		3	2	6		21	14	18	
Electric	46		3	2	6		15	14	6	
Other kind	18						6		12	
Horsepower furnished to other establishments										
2							2			
Establishments classified by number of persons employed, not including proprietors and firm members:										
Total number of establishments	149	17	8	3	5	5	81	8	18	4
No employees	6	1	2				2		1	
Under 5	71	10	1	2	4	4	41	1	6	2
5 to 20	61	6	5	1	1	1	32	3	10	2
21 to 50	9						5	3		
51 to 100	1							1		
101 to 250	1									

<sup>1</sup>Includes establishments distributed as follows: California, 1; Michigan, 1; Wisconsin, 2.

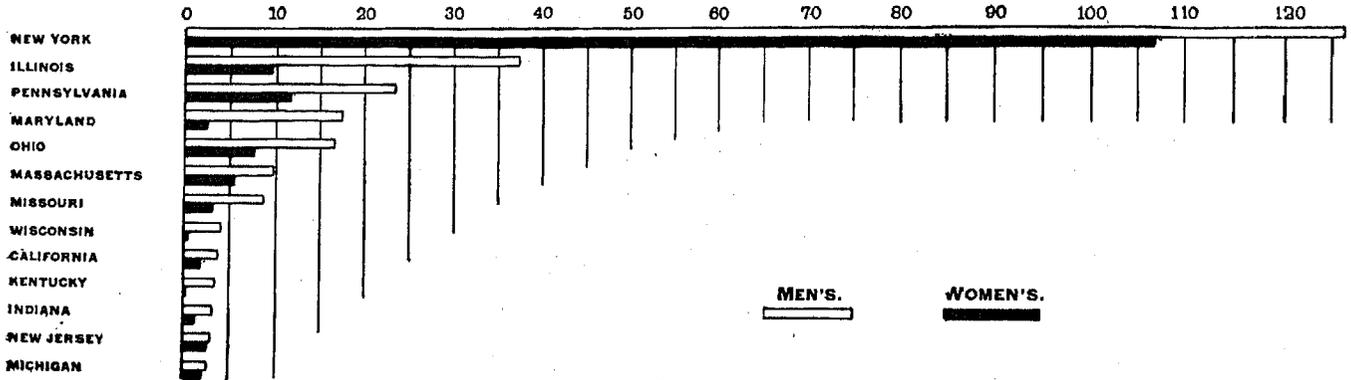
The following two diagrams give a comprehensive idea of the centers of the clothing industry in the United States, and of the extent to which the manufacture of men's and women's clothing was carried on in

the leading states and cities. The first diagram shows the comparative value of products for men's and women's clothing, factory product, in the leading 13 states, and the second, the same comparison for the leading 22 cities.

**CLOTHING (MEN'S AND WOMEN'S).**

FACTORY PRODUCT: 1900.

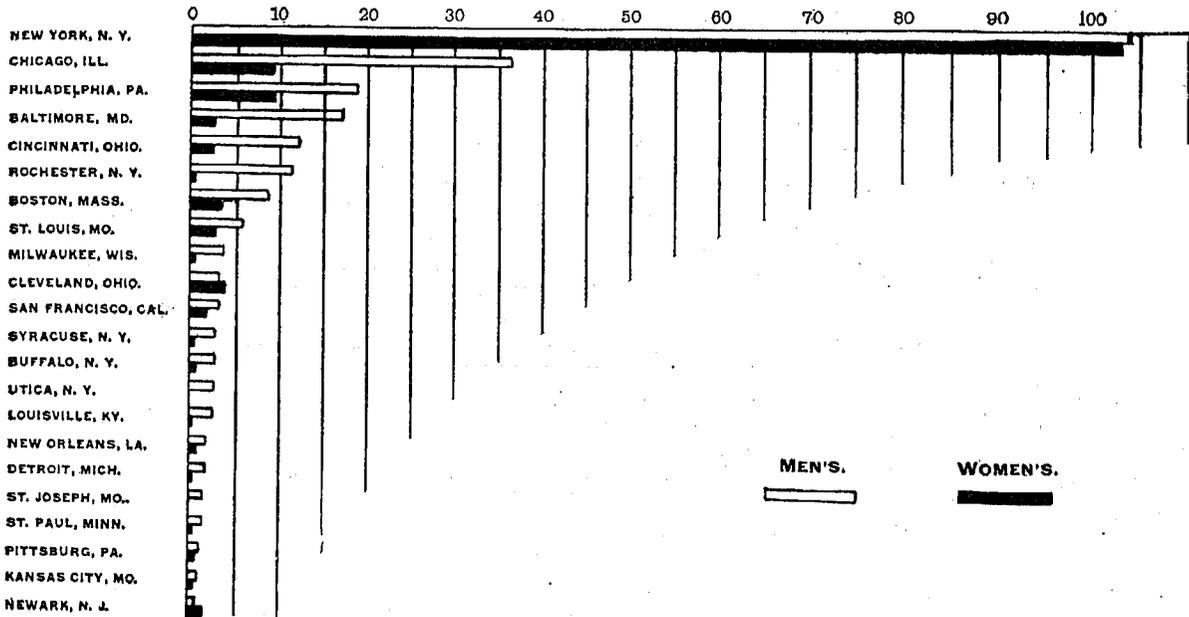
MILLIONS OF DOLLARS.



**CLOTHING (MEN'S AND WOMEN'S).**

FACTORY PRODUCT: 1900.

MILLIONS OF DOLLARS.



In addition to the above cities, Newburg, N. Y., manufactured \$1,594,475 and Binghamton, N. Y., \$1,079,733 worth of men's clothing, factory product, but as no

women's clothing was manufactured there they were not included in the diagram.

## WOMEN'S CLOTHING, FACTORY PRODUCT.

Table 14 is a comparative summary of the statistics for the manufacture of women's clothing, factory product, as returned at the censuses of 1860 to 1900, inclusive, with the percentages of increase for each decade.

TABLE 14.—CLOTHING, WOMEN'S, FACTORY PRODUCT: COMPARATIVE SUMMARY, 1860 TO 1900, WITH PER CENT OF INCREASE FOR EACH DECADE.

	DATE OF CENSUS.					PER CENT OF INCREASE.			
	1900	1890	1880	1870	1860	1890 to 1900	1880 to 1890	1870 to 1880	1860 to 1870
Number of establishments.....	2,701	1,224	502	1,847	188	120.7	117.8	169.6	882.4
Capital.....	\$48,481,544	\$21,259,528	\$8,207,273	\$8,520,218	\$1,421,650	127.8	159.0	133.1	147.6
Salaries officials, clerks, etc., number.....	6,715	2,859	(3)	(3)	(3)	184.9	.....	.....	.....
Salaries.....	\$6,373,618	\$3,384,515	(3)	(3)	(3)	94.2	.....	.....	.....
Wage-earners, average number.....	83,739	39,149	25,192	11,696	5,739	113.9	55.4	115.4	103.8
Total wages.....	\$32,586,101	\$15,428,272	\$6,661,005	\$2,513,959	\$1,198,032	111.2	131.6	165.0	110.7
Men, 16 years and over.....	26,109	12,963	2,594	1,105	889	101.4	390.7	134.8	24.3
Wages.....	\$15,790,572	\$7,386,955	(3)	(3)	(3)	113.8	.....	.....	.....
Women, 16 years and over.....	56,866	25,913	22,253	10,247	4,850	119.4	16.4	117.2	111.3
Wages.....	\$16,675,390	\$7,994,268	(3)	(3)	(3)	108.6	.....	.....	.....
Children, under 16 years.....	764	273	345	344	(3)	179.9	120.9	0.8	.....
Wages.....	\$120,189	\$47,114	(3)	(3)	(3)	155.0	.....	.....	.....
Miscellaneous expenses.....	\$11,733,695	\$3,620,042	(4)	(4)	(4)	224.1	.....	.....	.....
Cost of materials used.....	\$34,704,592	\$34,277,210	\$19,559,227	\$6,837,978	\$3,323,335	147.1	75.2	186.0	105.8
Value of products.....	\$159,339,539	\$68,164,019	\$32,004,794	\$12,900,538	\$7,181,039	133.8	113.0	148.1	79.0

<sup>1</sup> Decrease.

<sup>2</sup> Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this table. (See Table 23.)

<sup>3</sup> Not reported separately.

<sup>4</sup> Not reported.

The census of 1860 was the first in which the manufacture of women's clothing was reported. With the exception of the abnormal increase in the number of establishments in 1870 and the consequent decrease in 1880, there was a very steady increase during every decade. With but few exceptions the figures for every item more than doubled each decade. In 1860 the number of establishments was 188 and in 1900, 2,701, an increase of more than thirteenfold; during the same period the capital increased \$47,009,894, or more than thirty-threefold; the number of wage-earners, 78,000, more than thirteenfold; the total wages paid, \$31,393,069, or more than twenty-sixfold; the cost of materials used, \$81,381,257, or more than twenty-fourfold; and the value of products, \$152,158,500, or more than twenty-onefold.

The relatively largest increase occurred during the last decade. The number of establishments increased 1,477, or 120.7 per cent; the capital, \$27,172,016, or 127.8 per cent; the number of wage-earners, 44,590, or 113.9 per cent; the total amount of wages, \$17,157,829, or 111.2 per cent; the miscellaneous expenses, \$8,113,653, or 224.1 per cent; the cost of materials used,

\$50,427,373, or 147.1 per cent; and the value of products, \$91,175,520, or 133.8 per cent.

As the manufacture of women's ready-made clothing is not distributed over as many places as is that of men's, and as a large part of it is manufactured in large factories and in shops, the collection of statistics could be more accurately done, and the figures may be taken as more approximately correct.

In contrast with the manufacture of men's clothing, this branch of the industry showed a large increase in the number of wage-earners and of the wages paid. The total number increased from 39,149 to 83,739, and the total wages from \$15,428,272 to \$32,586,101. The development of the industry during the decade was of such a nature that men were substituted for women in the manufacture of certain of the better grades of clothing, such as cloaks and ladies' suits, while the greatest number of women were added in the factories for shirt waists and underwear.

Table 15 presents, by states, arranged geographically, the number of active establishments from which reports were received in 1890 and 1900, and the increase during the decade.

TABLE 15.—CLOTHING, WOMEN'S, FACTORY PRODUCT: COMPARATIVE SUMMARY, NUMBER OF ACTIVE ESTABLISHMENTS, 1890 AND 1900, WITH INCREASE, BY STATES ARRANGED GEOGRAPHICALLY.

	1900	1890	Increase.
United States .....	2,701	1,224	1,477
New England states .....	154	55	99
Maine.....	9	3	6
New Hampshire.....	5	1	4
Vermont.....	5	5	0
Massachusetts.....	119	44	75
Rhode Island.....	2	4	12
Connecticut.....	14	3	11
Middle states .....	2,024	927	1,097
New York.....	1,673	805	868
New Jersey.....	57	21	36
Pennsylvania.....	230	80	150
Delaware.....	3	3	0
Maryland.....	61	21	40
Southern states .....	33	29	4
West Virginia.....	3	3	0
Virginia.....	2	3	1
North Carolina.....	1	1	0
South Carolina.....	1	1	0
Kentucky.....	9	14	5
Tennessee.....	2	2	0
Louisiana.....	14	12	2
Texas.....	1	1	0
Central states .....	412	128	284
Ohio.....	126	31	95
Michigan.....	31	5	26
Indiana.....	14	3	11
Illinois.....	169	71	98
Wisconsin.....	9	4	5

TABLE 15.—CLOTHING, WOMEN'S, FACTORY PRODUCT: COMPARATIVE SUMMARY, ETC.—Continued.

	1900	1890	Increase.
Central states—Continued.			
Minnesota.....	8	2	6
Iowa.....	7	1	6
Missouri.....	48	11	37
Western states .....	3	4	11
Nebraska.....	1	1	0
Colorado.....	2	4	12
Pacific states.....	75	81	16
Washington.....	9	9	0
Oregon.....	7	3	4
California.....	59	78	19

<sup>1</sup> Decrease.

In 1890 the industry was carried on in 23 states, and in 1900 in 32. In 1900 an increase of 1,506 establishments was reported in 27 states and a decrease of 29 establishments in 5, leaving a net increase of 1,477 establishments. New York, with 868 new establishments, showed the largest increase; Pennsylvania, with 150, stood next; and Illinois and Ohio, with 98 and 95, respectively, stood third and fourth. The only decrease of any account was in California.

Table 16 is a comparative summary of the industry, by states, for 1890 and 1900.

TABLE 16.—CLOTHING, WOMEN'S, FACTORY PRODUCT: COMPARATIVE SUMMARY, BY STATES, 1890 AND 1900.

	Year.	United States.	California.	Colorado.	Connecticut.	Delaware.	Illinois.	Indiana.
Number of establishments .....	1900	2,701	59	( <sup>1</sup> )	14	3	169	14
	1890	1,224	78	4	3	71	71	3
Capital .....	1900	\$48,431,544	\$691,843		\$194,200	\$9,125	\$2,946,454	\$521,039
	1890	\$21,259,528	\$645,395	\$235,664	\$53,646		\$2,798,112	\$18,360
Salaried officials, clerks, etc., number .....	1900	6,715	67		13	1	559	64
	<sup>2</sup> 1890	2,859	181	8	4		160	5
Salaries .....	1900	\$6,573,618	\$51,006		\$12,216	\$624	\$603,004	\$68,341
	<sup>2</sup> 1890	\$3,384,515	\$125,871	\$8,320	\$7,500		\$167,805	\$2,001
Wage-earners, average number .....	1900	83,739	1,311		494	38	4,402	1,264
	1890	39,149	1,037	342	261		2,513	51
Total wages .....	1900	\$32,586,101	\$437,367		\$182,337	\$9,080	\$1,492,295	\$265,245
	1890	\$15,428,272	\$354,902	\$161,646	\$96,080		\$1,013,673	\$11,940
Men, 16 years and over .....	1900	26,109	346		58		915	55
	1890	12,963	256	2	34		686	3
Wages .....	1900	\$15,790,572	\$178,889		\$35,410		\$596,797	\$41,013
	1890	\$7,386,955	\$109,750	\$4,080	\$23,480		\$408,306	\$2,944
Women, 16 years and over .....	1900	56,866	954		436	38	3,441	1,209
	1890	25,013	772	340	227		1,825	44
Wages .....	1900	\$16,675,390	\$256,584		\$146,927	\$9,080	\$389,045	\$225,232
	1890	\$7,994,203	\$242,976	\$157,566	\$72,000		\$605,063	\$8,580
Children, under 16 years .....	1900	764	11				46	
	1890	273	9				2	4
Wages .....	1900	\$120,139	\$1,894				\$6,453	
	1890	\$47,114	\$2,176				\$304	\$416
Miscellaneous expenses .....	1900	\$11,733,695	\$62,300		\$12,717	\$375	\$1,143,662	\$30,471
	1890	\$3,620,042	\$79,081	\$41,051	\$6,302		\$600,030	\$1,188
Cost of materials used.....	1900	\$84,704,592	\$1,007,374		\$225,498	\$4,296	\$5,019,054	\$650,040
	1890	\$34,277,219	\$952,751	\$260,182	\$129,374		\$3,257,712	\$15,157
Value of products.....	1900	\$159,339,539	\$1,981,136		\$614,855	\$18,310	\$9,774,774	\$1,256,716
	1890	\$68,164,019	\$1,751,433	\$642,760	\$262,800		\$6,422,431	\$34,066

<sup>1</sup> Reported in "all other states."

<sup>2</sup> Includes proprietors and firm members with their salaries; number only reported in 1900, but not included in this table. (See Table 23.)

TABLE 16.—CLOTHING, WOMEN'S, FACTORY PRODUCT: COMPARATIVE SUMMARY, BY STATES—Continued.

	Year.	Iowa.	Kentucky.	Louisiana.	Maine.	Maryland.	Massachu- setts.	Michigan.
Number of establishments.....	1900 1890	7 (1)	9 14	14 12	9 8	61 21	119 44	81 5
Capital.....	1900 1890	\$23,899	\$17,875 \$110,077	\$460,295 \$86,420	\$193,050 \$28,286	\$841,345 \$473,700	\$1,616,091 \$592,161	\$599,194 \$187,399
Salaried officials, clerks, etc., number.....	1900 1890	10	3 15	18 3	23 3	151 30	140 153	120 11
Salaries.....	1900 1890	\$3,520	\$2,190 \$8,691	\$16,810 \$3,024	\$11,800 \$4,324	\$127,941 \$25,222	\$145,254 \$117,434	\$122,499 \$11,510
Wage-earners, average number.....	1900 1890	65	91 231	509 333	290 63	2,175 575	3,443 1,325	1,540 312
Total wages.....	1900 1890	\$9,706	\$21,844 \$116,798	\$232,409 \$40,264	\$72,079 \$16,449	\$562,710 \$180,356	\$1,083,002 \$430,117	\$391,623 \$63,830
Men, 16 years and over.....	1900 1890	4	10 13	14	7 2	392 98	418 102	153 275
Wages.....	1900 1890	\$2,466	\$4,400 \$10,083	\$3,580	\$3,800 \$1,486	\$214,974 \$90,238	\$244,031 \$69,510	\$68,463 \$55,700
Women, 16 years and over.....	1900 1890	61	81 212	482 319	283 61	1,742 474	2,997 1,997	1,883 87
Wages.....	1900 1890	\$7,240	\$17,444 \$106,164	\$223,899 \$36,084	\$68,879 \$15,013	\$842,987 \$119,618	\$334,521 \$364,951	\$322,272 \$8,130
Children, under 16 years.....	1900 1890		6	27		41 3	28 6	4
Wages.....	1900 1890		\$546	\$4,010		\$4,799 \$500	\$4,450 \$1,656	\$888
Miscellaneous expenses.....	1900 1890	\$1,639	\$8,131 \$6,342	\$15,545 \$6,940	\$7,410 \$2,092	\$162,851 \$44,187	\$261,597 \$112,078	\$155,264 \$51,263
Cost of materials used.....	1900 1890	\$25,284	\$78,300 \$151,000	\$485,631 \$120,246	\$154,455 \$23,029	\$1,373,980 \$447,026	\$2,795,143 \$924,463	\$1,219,429 \$107,533
Value of products.....	1900 1890	\$46,993	\$130,756 \$305,850	\$349,823 \$193,973	\$287,749 \$55,237	\$2,635,576 \$370,031	\$5,201,650 \$1,863,517	\$2,194,073 \$323,661

	Year.	Minnesota.	Missouri.	New Hamp- shire.	New Jersey.	New York.	Ohio.	Oregon.
Number of establishments.....	1900 1890	8 (1)	48 11	5 (1)	57 21	1,673 805	126 31	7 8
Capital.....	1900 1890	\$85,863	\$1,019,456 \$300,520	\$146,762	\$1,293,827 \$254,650	\$29,283,205 \$11,331,635	\$2,865,851 \$2,056,455	\$20,403 \$74,400
Salaried officials, clerks, etc., number.....	1900 1890	17	190 44	23	144 29	4,152 1,930	343 90	4 11
Salaries.....	1900 1890	\$12,760	\$191,051 \$45,526	\$25,639	\$125,420 \$29,064	\$4,097,946 \$2,582,240	\$334,277 \$131,136	\$1,390 \$9,560
Wage-earners, average number.....	1900 1890	516	2,068 455	434	2,389 643	48,717 24,764	4,817 2,546	44 70
Total wages.....	1900 1890	\$123,620	\$564,385 \$106,419	\$134,027	\$644,394 \$171,371	\$21,987,896 \$10,822,197	\$1,518,355 \$911,171	\$12,700 \$32,460
Men, 16 years and over.....	1900 1890	19	378 27	25	212 66	19,673 9,858	1,345 750	17 15
Wages.....	1900 1890	\$14,980	\$162,236 \$14,405	\$14,630	\$85,895 \$27,975	\$12,307,281 \$5,903,946	\$687,558 \$403,371	\$8,620 \$7,460
Women, 16 years and over.....	1900 1890	492	1,632 424	409	2,099 576	28,751 14,804	3,463 1,786	25 45
Wages.....	1900 1890	\$113,030	\$398,994 \$91,502	\$119,397	\$547,693 \$143,346	\$9,627,931 \$4,897,461	\$329,544 \$501,300	\$3,346 \$22,500
Children, under 16 years.....	1900 1890	5	58 4		78 1	293 102	9 10	2 10
Wages.....	1900 1890	\$610	\$8,165 \$512		\$10,306 \$50	\$52,734 \$20,790	\$1,253 \$1,000	\$234 \$2,500
Miscellaneous expenses.....	1900 1890	\$23,899	\$135,795 \$18,189	\$7,576	\$135,612 \$21,518	\$3,407,495 \$2,225,473	\$467,188 \$119,790	\$4,214 \$6,223
Cost of materials used.....	1900 1890	\$185,510	\$1,739,310 \$298,852	\$324,991	\$1,156,341 \$397,631	\$56,848,074 \$22,063,350	\$4,449,451 \$2,232,025	\$36,831 \$34,175
Value of products.....	1900 1890	\$427,000	\$3,124,901 \$511,894	\$519,735	\$2,561,034 \$713,647	\$106,392,390 \$45,037,394	\$7,772,771 \$4,352,093	\$37,947 \$149,220

<sup>1</sup> Reported in "all other states."

<sup>2</sup> Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this table. (See Table 23.)

TABLE 16.—CLOTHING, WOMEN'S, FACTORY PRODUCT: COMPARATIVE SUMMARY, BY STATES—Continued.

	Year.	Pennsyl- vania.	Rhode Island.	Vermont.	Virginia.	Washing- ton.	West Virginia.	Wisconsin.	All other states.
Number of establishments .....	1900	280	(1)	5	(1)	9	3	9	12
	1890	80	4		3			4	4
Capital .....	1900	\$5,197,094		\$47,420		\$25,700	\$61,000	\$141,750	\$122,903
	1890	\$1,819,002	\$2,900		\$13,875			\$140,095	\$41,770
Salaried officials, clerks, etc., number .....	1900	596		10		5	1	21	65
	1890	160			8			7	7
Salaries .....	1900	\$524,528		\$5,005		\$2,100	\$1,200	\$18,150	\$23,897
	1890	\$189,634			\$3,140			\$7,760	\$4,810
Wage-earners, average number .....	1900	8,311		202		33	52	253	281
	1890	2,989	17		16			453	153
Total wages .....	1900	\$2,606,024		\$53,123		\$13,400	\$10,100	\$80,816	\$71,014
	1890	\$766,094	\$6,276		\$3,648			\$63,949	\$47,132
Men, 16 years and over .....	1900	1,961		26		31	2	37	25
	1890	572	1					120	9
Wages .....	1900	\$1,057,678		\$7,475		\$12,680	\$1,100	\$27,600	\$12,040
	1890	\$233,410	\$936					\$36,380	\$4,960
Women, 16 years and over .....	1900	6,188		176		2	50	216	256
	1890	2,901	16		16			333	141
Wages .....	1900	\$1,524,493		\$45,048		\$720	\$9,000	\$53,216	\$53,363
	1890	\$516,020	\$5,340		\$3,648			\$32,560	\$42,172
Children, under 16 years .....	1900	162							
	1890	116							
Wages .....	1900	\$23,853							
	1890	\$16,664							
Miscellaneous expenses .....	1900	\$629,266		\$2,076		\$4,188	\$22,640	\$17,626	\$14,168
	1890	\$249,188	\$733		\$1,485			\$12,748	\$13,641
Cost of materials used .....	1900	\$6,269,950		\$115,429		\$39,300	\$160,192	\$100,542	\$230,187
	1890	\$2,281,471	\$17,164		\$28,381			\$254,510	\$116,107
Value of products .....	1900	\$11,694,580		\$197,995		\$93,694	\$255,000	\$271,909	\$418,080
	1890	\$3,903,596	\$34,200		\$46,900			\$410,630	\$187,426

<sup>1</sup> Reported in "all other states."

<sup>2</sup> Includes establishments distributed as follows: Colorado, 2; Nebraska, 1; North Carolina, 1; Rhode Island, 2; South Carolina, 1; Tennessee, 2; Texas, 1; Virginia, 2.

<sup>3</sup> Includes establishments distributed as follows: Iowa, 1; Minnesota, 2; New Hampshire, 1.

<sup>4</sup> Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this table. (See Table 23.)

The greatest increase appeared in New York, where the number of establishments increased from 805 to 1,673; the capital employed \$17,901,570, from \$11,381,635 to \$29,283,205; the total number of wage-earners 23,953, from 24,764 to 48,717; the total wages \$11,165,699, from \$10,822,197 to \$21,987,896; and the value of products \$61,804,996, from \$45,087,394 to \$106,892,390. The increase in the value of products in New York equalled more than two-thirds of the increase for all the states. Pennsylvania ranked second, with an increase in the number of establishments from 80 to 230, or 150; from 2,989 to 8,311, or 5,322, in the total number of wage-earners; from \$766,094 to \$2,606,024, or \$1,839,930, in the total wages; and from \$3,903,596 to \$11,694,580, or \$7,790,984, in the value of products. Illinois ranked third, but while the number of establishments increased from 71 to 169, or 98; the capital increased only from \$2,793,112 to \$2,946,454, or \$153,342; the wage-earners from 2,513 to 4,402, or 1,889; and the

wages from \$1,013,673 to \$1,492,295, or \$478,622. The value of products increased from \$6,422,431 to \$9,774,774, or \$3,352,343. With an increase in the number of establishments from 31 to 126 Ohio ranked fourth. The number of wage-earners increased from 2,546 to 4,817; the wages from \$911,171 to \$1,518,355, or \$607,184; and the value of products from \$4,352,098 to \$7,772,771, or \$3,420,673. In Massachusetts the number of establishments increased from 44 to 119; the capital from \$592,161 to \$1,616,991, or \$1,024,830; the wage-earners from 1,325 to 3,443, or 2,118; the wages from \$436,117 to \$1,083,002, or \$646,885; and the value of products from \$1,863,517 to \$5,201,650, or \$3,338,133. A decrease in the value of products was shown in only 3 states which were of no importance in the industry.

Table 17 presents a summary of establishments classified by the number of persons employed in each as wage-earners, by states, arranged geographically.

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TABLE 17.—CLOTHING, WOMEN'S, FACTORY PRODUCT: ESTABLISHMENTS CLASSIFIED BY NUMBER OF PERSONS EMPLOYED, BY STATES, ARRANGED GEOGRAPHICALLY, 1900.

	Total number of establishments.	NUMBER OF ESTABLISHMENTS EMPLOYING—								
		No employees.	Under 5.	5 to 20.	21 to 50.	51 to 100.	101 to 250.	251 to 500.	500 to 1,000.	Over 1,000.
United States.....	2,701	48	315	1,008	748	326	188	55	12	1
New England states.....	154		18	60	44	18	10	4		
Maine.....	9			6	1		2			
New Hampshire.....	5				2			1		
Vermont.....	5			3		2				
Massachusetts.....	119		13	44	40	12	8	2		
Rhode Island.....	2			1		1				
Connecticut.....	14		5	6	1	1		1		
Middle states.....	2,024	32	226	729	610	249	133	34	10	1
New York.....	1,678	28	187	602	519	198	109	22	7	1
New Jersey.....	67	1	6	17	18	9	3	3		
Pennsylvania.....	280	3	26	91	48	35	17	8	2	
Delaware.....	3									
Maryland.....	61		7	19	22	7	4	1	1	
Southern states.....	88	1	4	17	9	1			1	
West Virginia.....	3	1		1						
Virginia.....	2				1					
North Carolina.....	1			1						
South Carolina.....	1			1						
Kentucky.....	9		1	7						
Tennessee.....	2			1	1					
Louisiana.....	14		3	6	4				1	
Texas.....	1				1					
Central states.....	412	12	50	168	78	52	39	17	1	
Ohio.....	126	7	29	48	10	12	12	8		
Michigan.....	31		2	9	9	5	4	2		
Indiana.....	14			1	4	3	3	2		
Illinois.....	169	5	17	75	40	20	9	2	1	
Wisconsin.....	9			3	2	3				
Minnesota.....	8			2	2	1	1			
Iowa.....	7		1	5		1				
Missouri.....	48		1	20	11	7	7	2		
Western states.....	3				3					
Nebraska.....	1				1					
Colorado.....	2				2					
Pacific states.....	75	3	17	39	4	6	6			
Washington.....	9		8	1						
Oregon.....	7	1	2	4						
California.....	59	2	7	34	4	6	6			

By comparing Table 17 with Table 4 (men's clothing) the difference in conditions under which the manufacture of clothing was carried on in its two branches becomes apparent. In this branch of the industry only 363 establishments, or 13.4 per cent of the total, either did not employ any help or employed less than 5 persons. Although the small shops employing between 5 and 20 persons here also constituted the largest proportion, being 1,008 establishments, or 37.3 per cent of the total, they constituted a relatively smaller percentage, while the establishments employing 21 to 50 persons showed a

considerable increase over those in the other branch of the industry, being 748, or 27.7 per cent. A still more noticeable difference was shown in the establishments having between 51 and 250 employees, where the total was 514, or 19 per cent of the total. Sixty-eight factories, or 2.5 per cent of the total, employed over 250 hands.

Table 18 shows the total number of wage-earners and their wages, the number of men, women, and children, with their wages, and the per cent of each to the total number, by geographic divisions, for 1900.

TABLE 18.—CLOTHING, WOMEN'S, FACTORY PRODUCT: WAGE-EARNERS AND WAGES, BY GEOGRAPHIC DIVISIONS, 1900.

	Total average number.	Per cent of total average number.	Total wages.	MEN.			WOMEN.			CHILDREN.		
				Average number.	Per cent of total average number.	Total wages.	Average number.	Per cent of total average number.	Total wages.	Total number.	Per cent of total average number.	Total wages.
United States.....	88,789	100.0	\$82,586,101	26,109	31.2	\$15,790,572	56,866	67.9	\$16,675,390	764	0.9	\$120,139
New England states.....	4,956	5.9	1,549,168	540	10.9	808,466	4,388	88.5	1,236,252	28	0.6	4,450
Middle states.....	61,630	78.6	25,310,054	22,238	36.1	13,665,778	85,818	68.0	12,052,084	574	0.9	92,192
Southern states.....	782	0.9	292,707	24	3.1	11,316	781	98.5	277,381	27	3.4	4,010
Central states.....	14,925	17.8	4,452,045	2,906	19.5	1,601,113	11,897	79.7	2,833,573	122	0.8	17,359
Western states.....	58	0.1	18,660	7	12.1	3,710	51	87.9	14,960			
Pacific states.....	1,388	1.7	463,467	394	28.4	200,189	981	70.7	261,150	13	0.9	2,123

The total number of wage-earners was 83,739 and the total wages \$32,586,101. Of this total 26,109, or 31.2 per cent, were men, receiving \$15,790,572 in wages; 56,866, or 67.9 per cent, were women, receiving \$16,675,390 in wages; and 764, or nine-tenths of 1 per cent, were children, receiving \$120,139 in wages. As a comparatively small part of the work in this branch of the industry was done in the homes, these figures may be taken as a fair estimate of the average number of persons employed in making women's clothing, factory product. The number of wage-earners in the Middle states was 61,630, or 73.6 per cent of the total, who produced 77.7 per cent of the product for the industry,

while in the Central states the number of wage-earners was 14,925, or 17.8 per cent, producing 15.6 per cent of the product. In the New England states 4,956 persons, or 5.9 per cent, were employed in the industry, producing 4.3 per cent of the product. It should be noted that in this industry the workers as a rule do not work full time more than about seven months in a year; the balance of the year they either work short hours or are idle.

Table 19 presents a comparison between the number of establishments, capital, and value of products for 1890 and 1900, by states, arranged geographically; also the percentage of total and of increase of each item.

TABLE 19.—CLOTHING, WOMEN'S, FACTORY PRODUCT: NUMBER OF ESTABLISHMENTS, CAPITAL, AND VALUE OF PRODUCTS, BY STATES, ARRANGED GEOGRAPHICALLY, WITH PERCENTAGES, 1890 AND 1900.

	1900						1890						PER CENT OF INCREASE, 1890 TO 1900.		
	Establishments.		Capital.		Products.		Establishments.		Capital.		Products.		Number of establishments.	Capital.	Products.
	Number.	Per cent of total.	Amount.	Per cent of total.	Value.	Per cent of total.	Number.	Per cent of total.	Amount.	Per cent of total.	Value.	Per cent of total.			
United States.....	2,701	100.0	\$48,431,544	100.0	\$159,399,539	100.0	1,224	100.0	\$21,259,528	100.0	\$68,164,019	100.0	120.7	127.8	133.7
New England states....	154	5.7	2,282,723	4.6	6,907,184	4.3	55	4.5	701,993	3.3	2,385,754	3.5	180.0	218.0	189.5
Maine.....	9	0.3	193,050	0.4	287,749	0.2	3	0.2	23,286	0.1	55,237	0.1	200.0	729.0	420.9
Vermont.....	5	0.2	47,420	0.1	197,995	0.1									
Massachusetts.....	119	4.4	1,616,991	3.3	5,201,050	3.2	44	3.6	592,161	2.8	1,863,517	2.7	170.5	173.1	179.1
Connecticut.....	14	0.5	194,200	0.4	614,855	0.4	3	0.3	53,646	0.2	262,800	0.4	366.7	262.0	194.0
All other New England states.....	17	0.3	181,062	0.4	604,935	0.4	5	0.4	32,900	0.2	204,200	0.3	40.0	450.3	196.2
Middle states.....	2,024	74.9	36,629,596	75.6	123,851,890	77.7	927	75.7	13,938,987	65.5	50,580,318	74.2	118.8	162.9	144.9
New York.....	1,673	61.9	29,288,205	60.5	106,892,390	67.1	805	65.8	11,381,635	53.5	45,087,394	66.1	107.8	157.3	137.1
New Jersey.....	57	2.1	1,298,827	2.7	2,561,034	1.6	21	1.7	254,650	1.2	718,647	1.1	171.4	410.0	256.4
Pennsylvania.....	230	8.5	5,197,094	10.7	11,694,580	7.4	80	6.5	1,819,002	8.6	3,903,596	5.7	187.5	185.7	199.6
Delaware.....	3	0.1	9,125	( <sup>6</sup> )	18,310	( <sup>8</sup> )									
Maryland.....	61	2.3	841,345	1.7	2,685,576	1.6	21	1.7	478,700	2.2	870,681	1.3	190.5	75.8	208.4
Southern states.....	33	1.2	613,745	1.3	1,474,579	0.9	29	2.4	169,372	0.8	551,728	0.8	18.8	282.7	167.3
West Virginia.....	3	0.1	61,000	0.1	255,000	0.2									
Virginia.....	( <sup>4</sup> )						3	0.3	13,875	0.1	46,900	0.1			
Kentucky.....	9	0.3	17,875	( <sup>3</sup> )	180,756	0.1	14	1.1	110,077	0.5	305,850	0.4	535.7	683.8	537.2
Louisiana.....	14	0.5	460,295	1.0	849,823	0.5	12	1.0	36,420	0.2	198,978	0.3	16.7	1,168.8	327.1
All other Southern states.....	7	0.3	74,575	0.2	230,000	0.1									
Central states.....	412	15.3	8,203,506	17.0	24,869,229	15.6	128	10.5	5,507,717	25.9	12,102,806	17.8	221.9	48.9	105.5
Ohio.....	126	4.7	2,865,851	5.9	7,772,771	4.9	31	2.5	2,056,455	9.7	4,852,098	6.4	306.5	39.4	78.6
Michigan.....	31	1.1	599,194	1.2	2,194,078	1.4	5	0.4	187,399	0.9	323,661	0.5	520.0	219.7	577.9
Indiana.....	14	0.5	521,039	1.1	1,256,716	0.8	3	0.3	18,300	0.1	34,666	0.1	366.7	2,737.9	8,525.2
Illinois.....	169	6.3	2,946,454	6.2	9,774,774	6.1	71	5.8	2,798,112	13.1	6,422,431	9.4	138.0	6.5	62.2
Wisconsin.....	9	0.3	141,750	0.3	271,991	0.2	4	0.3	140,095	0.7	410,630	0.6	125.0	1.2	533.8
Minnesota.....	8	0.3	85,863	0.2	427,000	0.3	( <sup>7</sup> )								
Iowa.....	7	0.3	23,899	( <sup>3</sup> )	46,998	( <sup>3</sup> )	( <sup>7</sup> )								
Missouri.....	48	1.8	1,019,456	2.1	3,124,901	1.9	11	0.9	300,520	1.4	541,894	0.8	386.4	239.2	476.7
All other Central states.....							83	0.3	11,776	( <sup>3</sup> )	17,426	( <sup>3</sup> )			
Western states.....	93	0.1	14,028	( <sup>3</sup> )	93,880	0.1	104	0.3	235,664	1.1	642,760	0.9	625.0	694.1	585.4
Pacific states.....	75	2.8	737,946	1.5	2,142,777	1.4	81	6.6	719,795	3.4	1,900,658	2.8	67.4	2.5	12.7
Washington.....	9	0.3	25,700	0.1	93,694	0.1									
Oregon.....	7	0.3	20,403	( <sup>3</sup> )	67,947	( <sup>3</sup> )	3	0.2	74,400	0.4	149,220	0.2	133.3	672.6	654.5
California.....	59	2.2	691,843	1.4	1,981,136	1.3	78	6.4	645,395	3.0	1,751,438	2.6	624.4	7.2	13.1

<sup>1</sup> Includes establishments distributed as follows: New Hampshire, 5; Rhode Island, 2.

<sup>2</sup> Includes establishments distributed as follows: New Hampshire, 1; Rhode Island, 4.

<sup>3</sup> Less than one-tenth of 1 per cent.

<sup>4</sup> See "all other Southern states."

<sup>5</sup> Decrease.

<sup>6</sup> Includes establishments distributed as follows: North Carolina, 1; South Carolina, 1; Tennessee, 2; Texas, 1; Virginia, 2.

<sup>7</sup> See "all other Central states."

<sup>8</sup> Includes establishments distributed as follows: Iowa, 1; Minnesota, 2.

<sup>9</sup> Includes establishments distributed as follows: Colorado, 2; Nebraska, 1.

<sup>10</sup> Includes 4 establishments in Colorado.

As in 1890, almost the entire industry was located in the Middle and Central states. The 5 states in the first-mentioned group reported more than 75 per cent of the aggregate product in 1900. The number of establishments increased from 927 in 1890 to 2,024 in 1900, or more than double; the capital, which in 1890 was \$13,933,987, or 65.6 per cent of the aggregate capital for the United States, increased \$22,695,609, or 162.9 per cent, and constituted 75.6 per cent of the aggregate. The increase in the value of products was almost as large; in 1890 it amounted to \$50,580,318, or 74.2 of the aggregate; in 1900 it had increased \$73,271,572, or 144.9 per cent, to \$123,851,890, and constituted 77.7 per cent of the aggregate.

In the Central states the ratio of increase in the number of establishments was greater than in the Middle states, increasing from 128 to 412, or 221.9 per cent; but the capital increased only 48.9, from \$5,507,717 to \$8,203,506, and its proportion of the aggregate decreased from 25.9 to 17. The value of products, however, more than doubled, increasing from \$12,102,806 to \$24,869,229; in 1890 it was 17.8 per cent of the aggregate for the industry, and in 1900 it had decreased to 15.6 per cent.

The New England states showed a great advance in this industry. The number of establishments increased from 55 to 154; the capital from \$701,993 to \$2,232,723, and the value of products from \$2,385,754 to \$6,907,184. The relative position of this group remained, however, almost unchanged. Only a small percentage of the industry was carried on in the Southern, Western, and Pacific states.

Among the Middle states the increase was distributed evenly. In 1890 New York reported 65.8 per cent of the aggregate number of establishments; in 1900 the percentage had decreased to 61.9; the capital invested increased 157.3 per cent during the decade, and was 60.5 per cent of the aggregate in 1900, against 53.5 per cent in 1890; the value of products increased 137.1 per cent, and from 66.3 per cent of the aggregate in 1890 to 67.1 per cent in 1900. In Pennsylvania the percentage of the number of establishments increased in the decade from 6.5 to 8.5, of capital from 8.6 to 10.7, and of products from 5.7 to 7.3. In both New Jersey and Maryland the industry more than doubled during the decade.

Among the Central states Illinois retained its position as first. In 1890 the number of establishments constituted 5.8 per cent of the aggregate, and in 1900, 6.3; the percentage of capital, however, showed a decided decrease, being 13.1 in 1890 and 6.2 in 1900; and the percentage of the value of products decreased from 9.4 to 6.1. Ohio also showed a relative decrease. The capital in 1890 was 9.7 per cent of the aggregate, and in 1900, 5.9; the value of products was 6.4 per cent in 1890 and 4.9 per cent in 1900. With the exception of Wisconsin,

all the other states in this group showed a slight increase in their percentage of the aggregate product.

All the states in the New England group showed slight increases in their percentage of production to the total production of the United States.

Table 20 is a comparative summary of capital for 1890 and 1900, with the percentage which each item formed of the total, and the per cent of increase for the decade.

TABLE 20.—CLOTHING, WOMEN'S, FACTORY PRODUCT: COMPARATIVE SUMMARY, CAPITAL, 1890 AND 1900.

	1900		1890		Per cent of increase.
	Amount.	Per cent of total.	Amount.	Per cent of total.	
Total.....	\$48,431,544	100.0	\$21,259,528	100.0	127.8
Land.....	943,980	2.0	554,050	2.6	70.4
Buildings.....	1,268,870	2.6	617,500	2.9	105.5
Machinery, tools, and implements.....	4,321,240	8.9	1,729,228	8.1	149.9
Cash and sundries.....	41,897,454	86.5	18,358,750	86.4	128.2

In contradistinction to the other branch of the industry, the capital in this branch increased at even a greater rate than the number of establishments. During the decade it increased \$27,172,016, or 127.8 per cent, from \$21,259,528 to \$48,431,544. The reason for this contradiction lies in the different methods of carrying on the business. In 1900 a comparatively small proportion of women's clothing was made by contractors, needing hardly any capital. This, and the fact that, with few exceptions, it was never customary for the manufacturers of ladies' suits and cloaks to carry large stocks of ready-made garments, explains the inconsistency between the two branches of the industry. Thus capital was always required to carry on this manufacture, and while the majority of the establishments which started to manufacture during the decade were small concerns, few were contractors, and, therefore, all of them found it necessary to have the required capital, which was often borrowed from the banks in order to carry the manufacturer over the season. This accounts in part for the small difference in the average capital used, which in 1890 was \$17,369, and in 1900, \$17,931.

The largest item was that of cash on hand and sundries, which increased \$23,538,704, or 128.2 per cent, from \$18,358,750 to \$41,897,454. The largest relative increase was in the item for machinery, tools, and implements, which increased \$2,592,012, or 149.9 per cent, from \$1,729,228 to \$4,321,240. The value of land and buildings remained insignificant, as most of the manufacture was still carried on in rented buildings. The proportion of the different items to the total remained almost unchanged.

Table 21 shows the miscellaneous expenses for 1900, together with the per cent of each item to the total.

TABLE 21.—CLOTHING, WOMEN'S, FACTORY PRODUCT:  
MISCELLANEOUS EXPENSES, 1900.

	Amount.	Per cent of total.
Total .....	\$11,733,695	100.0
Rent of works .....	2,593,750	22.1
Taxes, not including internal revenue .....	83,139	0.7
Rent of offices, interest, insurance, repairs, advertising, and other sundries .....	3,901,648	33.3
Contract work .....	5,155,163	43.9

In the decade from 1890 to 1900, the miscellaneous expenses increased \$8,113,653, or 224.1 per cent, from \$3,620,042 to \$11,733,695. Of the latter amount \$5,155,163, or 43.9 per cent, was expended for contract work. In this item the difference was very marked between this branch of the industry and the other. While the contract work for men's clothing amounted to 59.5 per cent of the total wages paid, it did not amount to more than 15.8 per cent for women's clothing. The amount expended for rent of works amounted to \$2,593,750, or 22.1 per cent of the total, which indicates that in the manufacture of women's clothing the manufacturers themselves pay the rent, while in the other branch of the industry the most of this burden falls on the contractors.

Table 22 shows the cost of the different materials used in the manufacture of women's clothing, factory

product, in 1900, with the per cent each item formed of the total cost of materials.

TABLE 22.—CLOTHING, WOMEN'S, FACTORY PRODUCT:  
COST OF MATERIALS, 1900.

	Amount.	Per cent of total.
Total .....	\$84,704,592	100.0
Purchased in partially manufactured form <sup>1</sup> .....	84,024,360	99.2
Fuel .....	156,488	0.2
Rent of power and heat .....	240,271	0.3
Freight .....	283,473	0.3

<sup>1</sup>Includes mill supplies, which are shown separately in Table 23.

The total cost of materials was \$84,704,592 in 1900, as compared with \$34,277,219 in 1890, an increase of \$50,427,373, or 147.1 per cent. For materials purchased in partially manufactured form \$84,024,360, or 99.2 per cent of the total, was expended. These materials ranged from the cheapest muslin to expensive broadcloth, but there was no way by which the value of the different materials could be ascertained. The amount expended for fuel and rent of power and heat was \$396,759, or five-tenths of 1 per cent of the total. As in the other branch of the industry, this low percentage depends upon the fact that in many instances the cost of power was included in the rent.

Table 23 presents, in detail, the statistics for the manufacture of women's clothing, factory product, for 1900.

TABLE 23.—CLOTHING, WOMEN'S,

	United States.	California.	Connecticut.	Delaware.	Illinois.	Indiana.	Iowa.	Kentucky.	Louisiana.	Maine.	Maryland.	
1	Number of establishments.....	2,701	59	14	3	169	14	7	9	14	9	61
	Character of organization:											
2	Individual.....	1,454	19	12	2	97	3	2	6	12	5	29
3	Firm and limited partnership.....	1,117	36	2	1	55	4	4	3	1	2	31
4	Incorporated company.....	129	4			17	7	1		1	2	1
5	Miscellaneous.....	1										
	Capital:											
6	Total.....	\$48,431,544	\$691,843	\$194,200	\$9,125	\$2,946,454	\$521,039	\$23,899	\$17,875	\$460,295	\$193,050	\$841,345
7	Land.....	\$943,980		\$15,000	\$125	\$20,500	\$1,750			\$202,400		\$8,000
8	Buildings.....	\$1,268,870		\$27,500	\$500	\$28,600	\$8,406			\$155,500		\$12,500
9	Machinery, tools, and implements.....	\$4,321,240	\$50,321	\$23,650	\$5,400	\$222,711	\$40,549	\$4,300	\$8,575	\$19,570	\$13,300	\$91,052
10	Cash and sundries.....	\$41,897,454	\$641,522	\$128,050	\$3,100	\$2,674,643	\$470,274	\$19,599	\$14,300	\$82,825	\$179,750	\$734,793
11	Proprietors and firm members.....	3,997	182	16	4	218	11	11	15	15	11	100
	Salaried officials, clerks, etc.:											
12	Total number.....	6,715	67	13	1	559	64	10	3	18	23	151
13	Total salaries.....	\$6,573,618	\$51,006	\$12,216	\$624	\$603,004	\$63,341	\$3,520	\$2,190	\$16,810	\$11,800	\$127,911
	Officers of corporations—											
14	Number.....	168	3			28	7				4	1
15	Salaries.....	\$363,993	\$12,000			\$39,080	\$13,800				\$8,000	\$1,200
	General superintendents, managers, clerks, etc.—											
16	Total number.....	6,547	64	13	1	531	57	10	3	18	19	150
17	Total salaries.....	\$6,209,625	\$39,006	\$12,216	\$624	\$563,924	\$49,541	\$3,520	\$2,190	\$16,810	\$8,800	\$123,741
	Men—											
18	Number.....	5,361	35	6		439	47	9	3	4	9	136
19	Salaries.....	\$5,621,466	\$30,626	\$8,200		\$528,749	\$45,385	\$3,200	\$2,190	\$4,700	\$4,600	\$121,616
	Women—											
20	Number.....	1,186	29	7	1	92	10	1		14	10	14
21	Salaries.....	\$888,159	\$8,380	\$4,016	\$624	\$35,175	\$4,156	\$320		\$11,610	\$4,200	\$5,125
	Wage-earners:											
22	Greatest number employed at any one time during the year.....	108,532	1,671	586	90	6,174	1,864	83	118	809	393	2,747
23	Least number employed at any one time during the year.....	65,078	1,025	420	75	3,286	717	73	88	304	200	1,555
	Average number of wage-earners and total wages:											
24	Total average number.....	83,739	1,311	494	38	4,402	1,264	65	91	509	290	2,175
25	Total wages.....	\$32,586,101	\$437,367	\$182,337	\$9,030	\$1,492,295	\$266,245	\$9,706	\$21,344	\$282,409	\$72,679	\$662,710
	Men, 16 years and over—											
26	Average number.....	26,109	346	58		915	55	4	10		7	392
27	Wages.....	\$15,790,572	\$178,889	\$35,410		\$506,797	\$41,013	\$2,466	\$4,400		\$3,800	\$214,974
	Women, 16 years and over—											
28	Average number.....	56,866	954	436	38	3,441	1,209	61	81	482	283	1,742
29	Wages.....	\$16,675,390	\$256,584	\$146,927	\$9,030	\$889,045	\$225,232	\$7,240	\$17,444	\$238,399	\$68,879	\$342,937
30	Children, under 16 years—											
31	Average number.....	764	11			46				27		41
	Wages.....	\$120,139	\$1,894			\$6,458				\$4,010		\$4,799
	Average number of wage-earners, including piece workers, employed during each month:											
	Men, 16 years and over—											
32	January.....	24,962	354	49		801	61	4	10		8	339
33	February.....	28,492	353	51		900	62	4	10		8	363
34	March.....	30,379	372	61		1,022	64	4	10		7	382
35	April.....	29,179	396	66		939	64	4	10		6	399
36	May.....	28,785	346	60		968	64	4	10		7	384
37	June.....	21,197	297	66		846	49	4	11		7	371
38	July.....	21,300	305	56		888	45	4	9		7	402
39	August.....	21,578	316	48		962	47	4	9		6	425
40	September.....	28,915	326	54		1,010	52	4	9		7	461
41	October.....	29,765	342	61		1,025	51	4	9		7	443
42	November.....	27,948	366	63		906	44	4	9		7	406
43	December.....	23,808	365	63		729	54	4	9		8	337
	Women, 16 years and over—											
44	January.....	57,156	838	371	32	3,437	1,538	53	65	760	303	1,927
45	February.....	61,775	948	380	31	3,981	1,702	56	61	662	316	2,007
46	March.....	65,024	1,076	442	30	4,251	1,738	56	71	583	334	2,083
47	April.....	63,549	1,067	459	30	4,071	1,733	67	80	513	264	2,004
48	May.....	58,500	981	516	17	3,326	1,498	67	82	411	292	1,877
49	June.....	49,486	701	503		2,706	802	57	107	398	269	1,519
50	July.....	45,419	724	427	65	2,864	599	60	97	297	215	1,293
51	August.....	49,513	989	377	65	3,185	688	62	84	297	208	1,401
52	September.....	57,094	1,050	485	65	3,541	825	62	83	313	231	1,619
53	October.....	60,069	1,100	493	65	3,425	1,094	62	83	406	288	1,677
54	November.....	59,000	1,067	389	30	3,257	1,074	62	83	472	333	1,709
55	December.....	53,807	903	383	30	3,248	1,218	63	75	685	354	1,791
	Children, under 16 years—											
56	January.....	762	11			53				27		43
57	February.....	785	11			57				27		44
58	March.....	807	11			58				27		44
59	April.....	812	11			63				27		42
60	May.....	782	11			50				27		41
61	June.....	717	11			33				27		41
62	July.....	693	11			43				27		40
63	August.....	721	11			46				27		40
64	September.....	774	11			42				27		39
65	October.....	780	11			37				27		39
66	November.....	784	11			47				27		39
67	December.....	751	11			39				27		39
	Miscellaneous expenses:											
68	Total.....	\$11,783,695	\$62,300	\$12,717	\$375	\$1,143,662	\$30,471	\$1,639	\$3,131	\$15,545	\$7,410	\$162,851
69	Rent of works.....	\$2,538,750	\$45,400	\$4,000	\$288	\$106,589	\$8,088	\$983	\$1,683	\$2,794	\$3,292	\$46,032
70	Taxes, not including internal revenue.....	\$33,139	\$1,763	\$819	\$25	\$12,507	\$1,336	\$3		\$378	\$243	\$2,340
71	Rent of offices, interest, etc.....	\$3,901,643	\$13,937	\$7,218	\$62	\$342,498	\$20,147	\$550	\$0,433	\$12,448	\$3,875	\$78,829
72	Contract work.....	\$5,155,163	\$1,200	\$80		\$622,068		\$103	\$15			\$35,650

FACTORY PRODUCT: BY STATES, 1900.

Massachu- setts.	Michi- gan.	Minne- sota.	Missouri.	New Hamp- shire.	New Jer- sey.	New York.	Ohio.	Oregon.	Pennsyl- vania.	Vermont.	Wash- ington.	West Virginia.	Wiscon- sin.	All other states. <sup>1</sup>	
119	31	8	48	5	57	1,673	126	7	230	5	9	3	9	12	1
61	7	1	17	.....	30	933	79	1	125	2	1	1	3	6	2
51	15	6	19	.....	22	708	31	6	100	2	7	.....	5	6	3
7	9	1	12	5	5	31	16	.....	5	1	1	2	1	6	4
.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	5
\$1,616,991	\$599,194	\$85,863	\$1,019,456	\$146,702	\$1,298,827	\$29,283,205	\$2,865,851	\$20,403	\$5,197,094	\$47,420	\$25,700	\$61,000	\$141,750	\$122,903	6
\$16,400	\$8,750	.....	\$6,500	\$4,200	\$72,300	\$519,250	\$30,055	.....	\$40,650	\$600	.....	.....	.....	\$2,500	7
\$69,800	\$22,600	.....	\$4,000	\$18,155	\$169,119	\$525,480	\$140,870	.....	\$80,900	\$1,900	.....	.....	.....	\$9,000	8
\$242,054	\$100,945	\$26,591	\$99,751	\$19,272	\$135,706	\$2,431,648	\$173,376	.....	\$526,376	\$8,100	\$1,400	\$53,000	\$16,025	\$11,175	9
\$1,294,737	\$466,899	\$50,272	\$909,205	\$105,155	\$921,702	\$25,806,827	\$2,521,550	\$19,010	\$4,549,168	\$36,820	\$24,300	\$8,000	\$125,725	\$100,228	10
159	43	17	56	.....	73	2,466	159	.....	346	6	25	1	14	18	11
140	120	17	190	23	144	4,152	348	4	596	10	5	1	21	35	12
\$145,254	\$122,499	\$12,700	\$191,051	\$25,089	\$125,420	\$4,097,946	\$884,277	\$1,890	\$524,528	\$5,005	\$2,100	\$1,200	\$18,150	\$23,897	13
8	11	3	17	6	12	88	18	.....	7	1	2	1	1	.....	14
\$31,400	\$24,810	\$600	\$23,550	\$7,288	\$36,700	\$109,625	\$40,740	.....	\$14,900	\$1,000	\$1,100	\$1,200	\$2,000	.....	15
132	100	14	173	17	132	4,114	380	4	589	9	3	.....	20	35	16
\$113,854	\$97,689	\$12,160	\$167,501	\$18,401	\$88,720	\$3,988,321	\$343,537	\$1,890	\$509,628	\$4,005	\$1,000	.....	\$16,150	\$23,897	17
96	85	12	158	15	105	3,383	285	4	480	9	3	.....	19	19	18
\$92,968	\$84,437	\$11,080	\$159,989	\$17,533	\$77,681	\$8,606,267	\$323,303	\$1,890	\$459,687	\$4,005	\$1,000	.....	\$15,700	\$16,660	19
36	24	2	15	2	27	731	45	.....	109	.....	.....	.....	1	16	20
\$20,886	\$13,252	\$1,080	\$7,512	\$368	\$11,039	\$382,054	\$20,284	.....	\$49,941	.....	.....	.....	\$450	\$7,237	21
4,445	2,204	652	2,607	486	2,744	62,412	6,261	51	11,063	227	36	52	403	354	22
2,512	1,087	383	1,060	373	1,953	38,666	3,777	36	6,184	162	31	52	171	228	23
3,443	1,540	516	2,068	434	2,389	48,717	4,817	44	8,311	202	33	52	253	281	24
\$1,083,002	\$391,623	\$128,620	\$564,385	\$134,027	\$644,394	\$21,987,896	\$1,513,355	\$12,700	\$2,606,024	\$53,123	\$13,400	\$10,100	\$80,816	\$71,014	25
418	153	19	378	25	212	19,673	1,845	17	1,961	26	31	2	37	25	26
\$244,031	\$63,463	\$14,980	\$162,236	\$14,630	\$85,895	\$12,307,231	\$687,558	\$3,620	\$1,057,678	\$7,475	\$12,680	\$1,100	\$27,600	\$13,646	27
2,997	1,383	492	1,632	409	2,099	28,751	3,463	25	6,188	176	2	50	216	256	28
\$334,521	\$322,272	\$113,030	\$393,994	\$119,397	\$547,693	\$9,627,931	\$829,544	\$3,846	\$1,524,493	\$45,648	\$720	\$9,000	\$53,216	\$53,368	29
28	4	5	58	.....	78	293	9	2	162	.....	.....	.....	.....	.....	30
\$4,450	\$885	\$610	\$8,165	.....	\$10,806	\$52,734	\$1,253	\$234	\$23,853	.....	.....	.....	.....	.....	31
401	174	21	352	24	215	18,988	1,155	19	1,870	33	32	2	30	25	32
419	178	22	419	25	218	22,019	1,241	19	2,055	33	32	2	34	25	33
424	178	22	402	23	235	23,469	1,353	19	2,201	33	32	2	30	25	34
435	178	20	394	25	233	22,548	1,283	15	2,108	32	32	2	40	25	35
441	178	20	392	26	233	19,467	1,232	15	1,903	17	31	2	40	25	36
410	166	19	333	25	202	15,311	1,279	15	1,684	16	31	2	34	25	37
355	60	15	394	23	160	15,281	1,464	16	1,713	33	28	2	35	25	38
377	54	16	418	24	209	15,168	1,482	16	1,890	16	31	2	39	25	39
425	160	17	429	25	222	21,958	1,578	14	2,045	17	31	2	43	25	40
463	160	17	414	26	227	22,608	1,579	13	2,189	17	32	2	38	25	41
454	171	21	393	26	222	21,186	1,397	19	2,166	33	33	2	35	25	42
417	165	21	353	24	170	18,079	1,099	19	1,762	31	33	2	39	25	43
2,815	1,656	541	1,568	410	2,145	28,633	2,971	28	6,417	185	2	50	180	231	44
3,185	1,788	585	1,689	427	2,233	30,942	3,403	28	6,721	189	2	50	243	256	45
3,260	1,699	581	1,836	428	2,321	32,575	3,725	28	7,140	192	2	50	248	275	46
3,303	1,596	558	1,623	442	2,332	31,817	3,778	28	6,994	190	2	50	260	293	47
3,214	1,450	473	1,526	409	2,218	29,264	3,505	28	6,615	184	2	50	257	238	48
2,934	1,173	372	1,451	378	1,876	24,560	3,176	21	5,867	160	2	50	182	227	49
2,366	823	385	1,520	356	1,709	22,972	3,473	21	4,576	145	2	50	200	231	50
2,290	879	408	1,584	376	1,736	25,620	3,503	23	5,033	161	2	50	234	258	51
2,933	1,127	455	1,740	403	2,016	29,568	3,833	21	5,926	170	2	50	233	278	52
3,178	1,493	498	1,783	418	2,202	30,889	3,866	21	6,304	187	2	50	195	285	53
3,331	1,495	540	1,697	435	2,205	29,917	3,518	28	6,607	173	2	50	173	263	54
3,115	1,471	613	1,559	424	2,196	28,258	2,799	28	6,059	172	2	50	183	228	55
17	5	4	57	.....	75	290	7	2	171	.....	.....	.....	.....	.....	56
24	5	5	57	.....	76	295	8	2	174	.....	.....	.....	.....	.....	57
27	6	5	58	.....	77	307	9	2	177	.....	.....	.....	.....	.....	58
27	6	5	58	.....	77	309	10	2	175	.....	.....	.....	.....	.....	59
30	7	6	58	.....	77	295	13	2	166	.....	.....	.....	.....	.....	60
31	4	4	57	.....	77	270	9	2	148	.....	.....	.....	.....	.....	61
31	8	4	58	.....	78	259	8	2	130	.....	.....	.....	.....	.....	62
32	1	4	58	.....	78	273	8	2	141	.....	.....	.....	.....	.....	63
32	4	5	59	.....	79	303	8	2	163	.....	.....	.....	.....	.....	64
32	4	5	59	.....	79	308	9	2	168	.....	.....	.....	.....	.....	65
26	4	5	57	.....	79	308	9	2	170	.....	.....	.....	.....	.....	66
24	4	4	57	.....	79	294	6	2	165	.....	.....	.....	.....	.....	67
\$251,597	\$155,264	\$23,899	\$135,795	\$7,576	\$135,612	\$8,407,495	\$467,188	\$4,214	\$929,266	\$2,076	\$4,188	\$22,640	\$17,626	\$14,158	68
\$32,599	\$11,710	\$6,186	\$43,957	\$720	\$19,633	\$1,301,971	\$74,922	\$2,522	\$151,184	\$375	\$2,956	\$300	\$4,296	\$4,790	69
\$9,302	\$3,072	\$213	\$3,809	\$460	\$4,456	\$25,695	\$8,062	\$145	\$6,772	\$126	\$102	\$50	\$446	\$1,020	70
\$135,024	\$124,471	\$17,410	\$37,819	\$6,396	\$103,055	\$2,444,860	\$154,157	\$1,397	\$970,080	\$1,575	\$1,130	\$2,290	\$12,684	\$3,348	71
\$34,672	\$16,011	\$90	\$45,210	.....	\$8,418	\$4,084,969	\$230,047	\$150	\$101,280	.....	.....	\$20,000	\$200	\$5,000	72

<sup>1</sup>Includes establishments distributed as follows: Colorado, 2; Nebraska, 1; North Carolina, 1; Rhode Island, 2; South Carolina, 1; Tennessee, 2; Texas, 1; Virginia, 2.



PRODUCT: BY STATES, 1900—Continued.

Massachu- setts.	Michi- gan.	Minne- sota.	Missouri.	New Hamp- shire.	New Jer- sey.	New York.	Ohio.	Oregon.	Pennsyl- vania.	Ver- mont.	Wash- ington.	West Virginia.	Wiscon- sin.	All other states. <sup>1</sup>	
\$2,795,143	\$1,219,429	\$185,510	\$1,739,310	\$324,991	\$1,156,341	\$56,848,074	\$4,449,451	\$36,831	\$6,269,950	115,429	\$39,800	\$160,192	\$100,542	\$239,187	73
\$2,761,304	\$1,191,548	\$181,500	\$1,695,969	\$320,753	\$1,187,008	\$56,547,272	\$4,379,816	\$36,394	\$6,205,081	\$113,742	\$38,860	\$165,775	\$97,851	\$234,184	74
\$6,907	\$5,368	\$1,040	\$3,642	\$2,351	\$6,168	\$94,469	\$6,030	\$187	\$11,207	\$725	\$65	\$112	\$897	\$763	75
\$13,154	\$3,624	\$830	\$9,922	\$640	\$6,087	\$133,233	\$15,444	-----	\$28,927	\$156	-----	-----	\$922	\$1,204	76
\$1,723	\$3,213	\$365	\$1,123	\$490	\$2,093	\$25,168	\$2,536	-----	\$4,342	\$195	-----	-----	\$30	\$132	77
\$12,055	\$15,676	\$1,775	\$28,754	\$757	\$5,085	\$47,932	\$45,625	\$300	\$19,393	\$611	\$875	\$4,275	\$740	\$2,817	78
\$5,201,650	\$2,194,078	\$427,000	\$3,124,901	\$519,735	\$2,561,084	\$106,892,390	\$7,772,771	\$67,947	\$11,694,580	\$197,995	\$93,694	\$255,000	\$271,991	\$418,080	79
84	20	5	38	3	40	1,275	99	5	153	3	8	1	4	10	80
4,130,752	1,758,869	287,000	2,733,961	429,056	2,054,303	94,594,164	7,047,521	57,000	9,074,649	184,570	72,604	200,000	162,141	370,080	81
3,466,823	1,521,438	208,000	2,262,604	371,200	1,777,486	81,530,558	5,991,133	33,700	8,005,960	167,000	60,000	200,000	138,250	281,200	82
79	27	5	36	5	44	425	54	-----	133	5	-----	2	6	5	83
539	461	67	221	163	443	4,066	690	-----	867	182	-----	7	27	62	84
8	3	1	3	1	10	48	1	-----	12	-----	-----	-----	1	1	85
235	300	30	95	35	293	1,098	80	-----	222	-----	-----	-----	6	40	86
2	8	-----	-----	-----	10	43	9	-----	3	1	-----	2	-----	-----	87
14	64	-----	-----	-----	50	263	174	-----	19	5	-----	7	-----	-----	88
-----	-----	-----	1	-----	2	10	4	-----	2	-----	-----	-----	-----	-----	89
-----	-----	-----	6	-----	16	152	77	-----	5	-----	-----	-----	-----	-----	90
1	-----	-----	-----	-----	2	3	-----	-----	-----	-----	-----	-----	-----	-----	91
60	-----	-----	-----	-----	12	15	-----	-----	-----	-----	-----	-----	-----	-----	92
-----	1	-----	-----	3	1	3	-----	-----	1	3	-----	-----	-----	-----	93
-----	20	-----	-----	120	40	165	-----	-----	4	170	-----	-----	-----	-----	94
230	77	37	120	13	32	2,373	359	-----	617	7	-----	-----	21	22	95
172	59	20	120	13	22	1,629	275	-----	389	7	-----	-----	18	22	96
58	18	17	-----	-----	10	744	84	-----	223	-----	-----	-----	3	-----	97
-----	-----	-----	40	-----	4	-----	-----	-----	-----	30	-----	-----	-----	10	98
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
119	81	8	48	5	57	1,673	126	7	230	5	9	3	9	12	99
-----	-----	-----	-----	-----	1	28	7	1	3	-----	-----	1	-----	-----	100
13	2	-----	1	-----	6	187	29	2	26	-----	8	-----	-----	-----	101
44	9	2	20	-----	17	602	48	4	91	3	1	-----	3	4	102
40	9	2	11	2	18	519	10	-----	43	-----	1	1	2	6	103
12	5	1	7	2	9	198	12	-----	35	2	-----	-----	3	2	104
8	4	3	7	-----	3	109	12	-----	17	-----	-----	-----	1	-----	105
2	2	-----	2	1	3	22	8	-----	8	-----	-----	-----	-----	-----	106
-----	-----	-----	-----	-----	-----	7	-----	-----	2	-----	-----	-----	-----	-----	107
-----	-----	-----	-----	-----	-----	1	-----	-----	-----	-----	-----	-----	-----	-----	108

<sup>1</sup>Includes establishments distributed as follows: Colorado, 2; Nebraska, 1; North Carolina, 1; Rhode Island, 2; South Carolina, 1; Tennessee, 2; Texas, 1; Virginia, 2.

## HISTORICAL AND DESCRIPTIVE.

## MEN'S CLOTHING.

The manufacture of ready-made clothing as an industry worth noting is of comparatively recent date. There are no records available of the earliest days of the industry in this country; however, the industry came into being during the second decade of the Nineteenth century, and George Opdyke, once mayor of New York, was one of the first to engage in it. About 1831 he commenced to manufacture clothing in Hudson street, New York city.<sup>1</sup> About 1835 the wholesale manufacture of medium-grade ready-made clothing for men began in New York on a small scale. Prior to this time it was usual for stores in the seaport cities to manufacture and keep in stock outfits of clothing from which sailors could replenish their wardrobes. These garments consisted principally of the so-called "slopwork." At first almost all the clothing was manufactured to supply the trade in the South and the West. Gradually the wholesale houses in New York began to manufacture better grades of ready-made clothing. The quantities manufactured were small and everything was made by hand. From this obscure beginning has grown the enormous industry of to-day.

The invention of the sewing machine in 1850 gave a great impetus to the manufacture of clothing.

The sewing machine made it possible to manufacture clothing on a larger scale, but a stronger impetus to the wholesale production of ready-made clothing was given by the Civil War, when the Government suddenly faced the necessity of providing clothing for hundreds of thousands of men. Since that time the volume of this industry has steadily increased.

The methods prevailing in the manufacture of men's (including children's) clothing have changed greatly during the last half century. Before 1850 it was mainly a household industry and there were but few manufacturers who ran factories of their own. After the sewing machine came into general use, the making of ready-made clothing was principally carried on by the journeymen tailors. During the seasons they worked for the custom tailors, and between the seasons they could be found in the shops of the manufacturers. At that time each tailor was a skilled workman, who made the entire garment. The majority of these tailors were English, Scotch, and American. Soon after 1850 the Irish came largely into the trade. Next the Germans entered into the manufacture of ready-made clothing and by them was introduced a division of labor in the making of the garments. The garments were made in homes, the father doing the machine work, while mother and children assisted in the basting, finishing, and making of the buttonholes.

Prior to 1876 there was little change in the methods

of manufacture, but following the great influx of Russian Jews, which began about that time, the task system was introduced into the manufacture of men's ready-made clothing.

The introduction of the task system revolutionized the ready-made clothing industry. It was no longer necessary for the worker to be a skilled workman, and the journeyman tailor was driven out of this branch of tailoring trade. This system has only been applied in the making of coats. When the task system was started, the journeyman tailor received \$2.50 to \$3 for making a ready-made coat on which he performed all the work, principally by hand. In the task shop the same coat would be produced by five persons at a cost of \$1.50 to \$2, and as much as possible of the work was done on the sewing machine. Through the task system the division of labor was carried into the shops. The peculiar features of this system are the "team" work and the "task" price. The work is done in the following manner: Each team consists of three men—an operator, a baster, and a finisher. Outside the team there is, as a rule, a presser and a girl for sewing on buttons and making buttonholes. Each member of the team has his particular part of the coat to make, and in a short time gains such an efficiency in his work that the team is able to turn out an increasing number of coats. When the system was first introduced, a task of overcoats would consist of about 50 coats per week, for the completion of which the operator would receive \$18; the baster, \$16; the finisher, \$11; and the presser, \$12. The girl was paid by the week, and received about \$4.50. The contractor would, as a rule, be a member of the team, until he started to run three or more teams in his shop, when he became the bushelman or overseer. The contractor would obtain the goods from the manufacturer and be responsible for them. When times were hard and labor plentiful the manufacturer would tell the contractor that he could get the work done at a lower figure. The contractor would be compelled to take the work at a reduced figure or go without it. He would tell his employees of this state of things, and, in order not to have their wages reduced the workers would agree to increase the task; thus in time the task, which at first consisted of 8 or 9 coats per day was gradually increased until it reached as high as 20. In order to finish a task in a day it became necessary to work longer hours, but it soon became impossible to finish a day's work even by working twenty hours, and it would frequently take more than thirty hours to finish a day's task. As the workers received always the same price for a task, whether it consisted of 8 coats or 20, they did not consider that their wages had been reduced. Thus it will be seen that a more obnoxious exemplification of the so-called sweating system can not be conceived.

Public attention was first called to the sweating system in the winter of 1847-1848, when, during a period

<sup>1</sup>One Hundred Years of American Commerce, Vol. II, page 561.

of acute distress among the workingmen of England; the "Morning Chronicle," of London, sent a commission to investigate the condition of the industrial classes.

The origin of this system was probably the giving out of work by the manufacturer to the journeyman tailor who did the work at his home. Though the "sweating system" has been debated for years it is hard to find a satisfactory definition of the term. It may be said to be a system where the wholesale firm, which is styled manufacturer, lets the work to contractors who undertake to do it in their own houses or small workshops, or who, in turn, sublet it to other contractors or parcel it out to individuals. Each of these contractors employs workers to do the work, making a profit for himself by the difference between the contract price and the wages he pays to his employees.

The only part of the work which is performed on the premises of the "manufacturer" is the cutting of the cloth and the linings. He does not have to pay rent for a factory which the conditions of the trade would not permit him to run more than about two-thirds of the time, and he does not have to supply machinery and power. The fact that hardly any capital is needed for a person to start a sweat shop and become a contractor has been an important factor in the competition. A clever man working for a contractor will soon find out from whom his employer gets his work and the price he receives. Then he will go to the manufacturer and inform him that he is doing the work for the contractor and he is willing to do it direct at a lower price. The manufacturer accepts his offer, the worker becomes a contractor, and soon one of his own workers will repeat his own action.

The result is inevitable. To be able to make a profit the contractor must reduce his expenses—that is, his outlay for wages and rent of shop. Before the enactment of recent laws he would use his living room for a workshop, in which the workers would be packed to a limit that is appalling, or he would rent a room in a basement or rear tenement, in which the work would be done under almost as bad conditions. In place of steam or electric power for operating the machines, there would almost invariably be substituted the foot power of the workers, which, when used to the excess which is common in these shops, will ruin the health of the worker in a very short term of years. The wages which the workers received would naturally be as low as human beings were willing to accept.

One of the most objectionable features of the contracting system is the subcontractor. This is a man who does not perform any work and does not employ any labor. He procures the work from the manufacturer and takes his profit by subletting the work to another contractor, who does the manufacturing. In this instance two profits must be deducted from the contract price before the employee gets anything.

The sweating system is made possible through the

unlimited oversupply of cheap labor, created by the hordes of illiterate persons who immigrate to this country, and who on their arrival are not fit for any work which requires skill. Coming here without means of subsistence, they naturally drift into work which requires no previous experience and no knowledge of the language. Formerly it required several years to learn the trade, but under the present system when one person performs only a very minute detail of the work, the clothing industry has become a haven of refuge for these people, as they are able to learn it in a very short time. When manufacturers learn that their interests will be better served by having their work done under their own supervision in factories of their own, the conditions under which ready-made clothing is now produced will gradually be improved.

A trend toward better conditions has appeared during the last few years. Though the largest part of the ready-made clothing is still made by contractors, the system of subcontracting has been in part abolished, and the contractors have been compelled to furnish healthier work-rooms for their workers. Several large manufacturers have begun making their clothing in their own factories. The advantages of the substitution of factory for contract work are far reaching. The former sweater or contractor becomes a foreman, and the operators look to the responsible firm for their wages. The hours are regulated by law; the machines are generally run by steam or electric power, and, as a rule, work is more regularly distributed over the entire year.

In contradistinction to the task system, which originated and was peculiar to New York city and surroundings, and which could only thrive in the tenement or small shop, the most modern system is called the "Boston" or "factory" system, though it is not confined to Boston, but is found in Philadelphia, Chicago, and elsewhere. Even in New York, where it has had much to overcome in its fight against the task system, it has been slowly gaining foothold. Under this system the subdivision of labor has been extended to a minute detail far beyond that used in the task system. Where under the latter system 20 persons are employed in a shop, the factory will employ 200. The "set" work of the task system can be extended indefinitely; instead of the five people whom it requires to produce a coat under the task system, almost any number can be used in the production of one under the Boston system. Factories exist where more than 100 persons are engaged in the making of one coat, a procedure whereby it is possible to introduce a large number of unskilled workers to work with a few skilled ones. As each worker has only a limited task to perform, he soon becomes efficient in it and is able to turn out his work with extraordinary speed; at the same time he is not able to make any other part of a garment. This specialization of work, while it makes it possible for the worker to learn his trade in a short time, puts him under complete control of the manu-

facturer, who is more independent of a worker making only a small detail of the garment than of one making the entire garment. The advantages of this system, however, are very pronounced. Weekly wages take the place of the task or piece price; the hours are consequently better regulated, as it would not benefit the worker to work longer hours, and, as a rule, the working places are kept in a better condition.

The most obnoxious of all systems under which clothing is produced is the "home work." Before the shops of the sweating and Boston systems came into existence, nearly all the goods were taken into the living rooms of the workers and made up into clothing. Thus the garments were exposed to the filth and possible disease which sometimes prevailed in these homes, and the hours of work could be extended without limit. One of the objectionable features of the ready-made clothing industry is that in very few shops are the garments entirely finished; instead of being finished in the shops they are usually taken into the homes of Italian women, where trousers and coats are felled and finished and buttons are sewed on. Certain kinds of the home work have had a very demoralizing influence on the wages of the industry. In many cities married women in comfortable circumstances are willing to do sewing to earn "pin money." Not being dependent on the work for a living, they will do it for a mere pittance. The number of women doing this is so considerable that it has had its effect on the wages paid in the industry.

While the conditions in the clothing industry are still far from satisfactory, a considerable change for the better has taken place during the latter part of the last decade. This change is attributable to several causes, but chiefly to the enactment and enforcing of laws for the regulation of the places where the manufacture of clothing is carried on.

The greatest objection to the sweating system is the distribution of the material over a wide territory, whereby the clothing is manufactured under unsanitary conditions. The great difficulty has always been to frame legislative acts in such a manner that the heart of the evil—the home work—could be reached. The first state to pass laws regulating the sweating system was Massachusetts, and the laws of that state have been copied to some extent by the states of New York and Pennsylvania.

The first law enacted in Massachusetts was in 1891. It was amended in 1894 and again in 1898. The principal features of the law as it now stands are the following: That no manufacturing of clothing shall take place in any room in a tenement unless a license is procured; that the factory inspector shall ascertain the condition of such room before the license is granted; that every firm employing a person to manufacture clothing in any room in a tenement shall keep a register of the names and addresses of the persons employed and shall be satisfied that they have obtained a license; that only

members of the family can be employed in such room; and finally that whoever sells or exposes for sale any clothing made in a tenement house used as a workshop shall have affixed to each garment a tag or label upon which shall be legibly printed or written the words "tenement made." The enforcement of this law, and especially of the last feature of it, has had the effect not only of putting a stop to the evils of the sweating system, except as far as wages are concerned, in the city of Boston, but also of driving the manufacture of clothing away from the state of Massachusetts, where it formerly flourished, and into the neighboring states, especially the state of New York.

In the state of New York a law similar to the one in force in Massachusetts has been enacted, with the exception of the compulsory label. Instead of this the New York law requires that when clothing is found in unlicensed places or in places where the law as to the number of workers or sanitary conditions is violated, the factory inspector shall affix a label containing the words "tenement made." When the law is complied with or the abuses corrected, the inspector removes the label. One of the features of the New York law is the legalizing of home work by providing that the factory inspector shall issue a license to anyone whose premises can stand preliminary inspection. Thus the material for the clothing is legally sent into thousands of tenements. The enforcement of this law in New York has had the effect of driving the largest part of the actual manufacture of clothing out of the tenements and into shops used only for manufacture, and at the same time of distributing the so-called "finishing" of pants and coats over a still greater area than formerly. The new tenement law in New York has also had a beneficial influence over the conditions under which clothing is manufactured, as the inspectors under this law report violations of the sanitary laws and thus effectively reduce the work of the factory inspectors.

The law of Pennsylvania contains nearly the same features as the New York law, with the addition that the factory inspector may seize and destroy any clothing that is being made in an unsanitary place. The strict enforcement of this law has greatly improved the conditions in Philadelphia. The result has been that many of the manufacturers who used to manufacture in their own factories have given up so doing and send all their goods out to be manufactured in small shops. In a certain respect, however, they are held responsible, as they are obliged to supply the factory inspector with a list of the places to which they give work, and upon advice from the inspector that the law is violated in any place the manufacturers are held responsible if they give more work to the place.

As the laws of New Jersey are not as strict as those of Pennsylvania, Philadelphia clothing manufacturers now send their goods into New Jersey to be manufactured.

The laws of Illinois and Missouri, while differing very little from those of New York, do not give the inspector the power that it is essential he should have to be able to enforce the law. The only other states which have any laws pertaining to the manufacture of clothing are Ohio, Maryland, Michigan, and New Jersey.

The manufacture of men's and children's clothing as a factory product is now subdivided into the following classes: Coats, vests, pants, knee-pants, and children's coats. As a rule a contractor will manufacture only one of these classes at a time. It is very rare to find a shop where the entire suit is made. The coats may be made in New York city, the vests in Williamsburg, N. Y., and the pants in Newark, N. J., and the different garments will be assembled into one suit when they reach the wholesale merchant. When the manufacturer does his own manufacturing, the entire suit is, as a rule, made inside the factory. When the coats and pants are made by contractors, the "finishing" is almost without exception done in the tenements. Probably half the number of coats produced are still made under the task system.

Machines for cutting the cloth were introduced about 1870. The first of these were long knives operating perpendicularly like saws and cutting through a number of thicknesses of cloth; later, these knives were replaced with circular disks, operating like buzz saws, which will cut through almost any number of thicknesses that may be required.

Many devices have been added to the sewing machines, whereby the work can be performed in a much shorter time than formerly. The most important change, however, is from machines driven by foot power to those driven by steam, electric, or other power. The substitution of artificial for human power has been very slow, but as can be seen from the figures given in Table 11, a great improvement has taken place during the last decade. Of 4,867 establishments in 1890 only 404, or 8.3 per cent, used artificial power. The total number of horsepower then reported was 6,230, or an average of 15 horsepower for each establishment using power. Out of 5,731 establishments in 1900, 1,519, or 26.5 per cent, reported power, and the number of horsepower was 14,178, making an average of 9 horsepower for each establishment using power. Thus, while the number of establishments increased only 17.7 per cent, the number of horsepower employed in the industry increased 127.6 per cent. In New York it is only in the largest factories and shops that such a substitution has taken place, and one can find large buildings occupied entirely by shops for the manufacture of clothing, where the power for the drift of the machines is entirely supplied by the operators. Philadelphia has been more progressive in this respect, and the majority of the shops there are now supplied with power.

In all the smaller shops the pressing is still done by

irons heated on open stoves, which contribute to the vitiation and oppressiveness of the atmosphere. In the factories and in many of the larger shops pressing irons heated by gas or electricity are now used.

The manner in which the manufacture of clothing has been revolutionized by the introduction of machinery and improved methods, enabling a smaller number of workers to turn out a considerably larger quantity of clothing in a much shorter time than formerly, is forcibly illustrated by the following comparison between the results obtained in a factory using modern methods and an old-fashioned shop.<sup>1</sup> As these modern methods can be successfully applied only in the larger shops they would seem to be a conclusive argument in favor of the manufacturers running their own factories instead of giving out the work to contractors. As examples for comparison were taken medium grade coats, cheap grade jackets, overalls, medium grade trousers, cottonade trousers, and medium grade vests.

Considering the medium-grade garments first, it was found that in the operation of shrinking the cloth a steam sponging machine was used in the factory instead of the sponge and flatiron used under the hand method of production. By the use of this machine the cloth for 100 coats was prepared by two persons in one hour and forty-eight minutes, as against eleven hours and forty minutes required by the hand method. For 100 pairs of trousers the time was one hour and eight minutes, as against eight hours and twenty minutes by the hand method. For a like number of vests the time required was twenty minutes, against three hours and twenty minutes. By using cutting machines cutting 16 thicknesses the three persons engaged would use four hours and thirty-two and five-tenths minutes in cutting the cloth for the coats, against thirty-three hours and twenty minutes when the material was cut by hand. For the trousers the respective times required would be two hours and fifty-eight minutes and sixteen hours and forty minutes, and for the vests one hour and thirty-four minutes and eleven hours and forty minutes. The sewing of the seams shows, of course, the greatest saving. While it required one thousand hours to sew the coats by hand, it took only sixty-six hours and forty minutes when the same seams were made by the use of the sewing machine. For the trousers the time consumed by the machine and hand methods was four hundred and thirty-three hours and twenty minutes and sixty-four hours and seventeen and one-tenth minutes, respectively, and for the vests four hundred and sixteen hours and forty minutes, and sixty-four hours and thirty-five minutes. In cutting the buttonholes the saving in time on the coats was from three hours and twenty minutes to seventeen and five-tenths minutes, and for the vests from three hours and twenty minutes to twenty-one and three-tenths minutes. Working buttonholes by hand required two hundred and seventy-

<sup>1</sup>Report of the Commissioner of Labor for 1898, Part 1, page 197.

five hours for the coats, and when done by machine the time occupied was but six hours and seventeen and eight-tenths minutes; for the trousers, the time was reduced by the new method from sixty-three hours and twenty minutes to two hours and forty-three and three-tenths minutes; and for the vests from seventy-five hours to four hours and ten minutes. The time for certain other operations was correspondingly reduced. One device may be specially mentioned: the machine for putting buttons on trousers, by which the time required for this operation was reduced from fifty hours to six hours and one and seven-tenths minutes.

In the cheaper grades of clothing the comparison was made for 12 dozen jackets, 12 dozen overalls, and 12 dozen cottonade trousers. Considering the jackets first, the cutting required thirty-six hours under the hand method, as against four hours and thirty minutes under the machine method. The making of the garments by hand occupied seven hundred and twenty hours, while by using the sewing machine less than one-tenth of the time, or seventy hours, was required. Buttonholes were cut and worked in sixty hours, and buttons sewed on in twenty-four hours under hand methods, while machines performed the same work in four hours and thirty minutes, and six hours, respectively.

For overalls the reductions were as follows: Cutting, from twelve to three hours; making of garments, from six hundred and thirty-six to forty-eight hours; making the buttonholes, from fifty-four to four hours and ten minutes; and putting on the buttons, from eighteen to four hours and thirty minutes.

The saving in time in making the cottonade trousers was considerable. The cutting of the material required forty-eight hours under the hand method as against five hours and twenty-four minutes under the machine method. The making of the garments required one thousand one hundred and fifty-two hours by hand work, while with the sewing machines, driven by artificial power, the work was accomplished in ninety hours. The making of the buttonholes took ninety-six hours by hand and three hours and thirty-six minutes by machine. It took thirty-six hours to sew on buttons, while they were riveted on by the button machine in four hours and forty-eight minutes.

Counting all operations in the manufacture, the time required for making 12 dozen overalls was reduced from seven hundred and twenty to seventy-one hours and ten minutes, and for the cheaper grades of trousers from one thousand four hundred and forty hours to one hundred and forty-eight hours and thirty minutes. The reduction in the time required for making 12 dozen jackets was from eight hundred and forty hours to ninety-seven hours and fifteen minutes. In the medium grades the saving in time on the vests was from nine hundred and twenty-one hours and forty

minutes to two hundred and sixty hours and twenty-eight and six-tenths minutes; on trousers from one thousand one hundred and twenty-five hours and forty minutes to four hundred and seventeen hours and fifty-two minutes; and on coats from three thousand three hundred and one hours and forty-three and three-tenths minutes to one thousand three hundred and seventy-five hours and twenty and three-tenths minutes.

#### WOMEN'S CLOTHING.

The manufacture of women's clothing as an industry of any importance did not start until the early sixties; at that time only outer garments, like cloaks and mantillas, were manufactured. Prior to 1880 the trade of women's ready-made clothing was confined almost entirely to cloaks. In the beginning of the eighties an additional branch of the industry, known as ladies' suits, was established. During the last decade not only ladies' suits and cloaks but all the different articles which go under the collective name of lingerie have been put on the market ready-made, and of the last class only a very small proportion is now custom made.

The manufacture of women's clothing as a factory-made article is carried on under very different conditions from that of men's, although the development of the industry has been on lines somewhat similar to those prevailing in the other branch of the clothing industry.

At first only the cheapest grade was manufactured, but before long expensive material was made up into ready-to-wear garments, and at the present time garments, varying in price from the cheapest to the most expensive, can be bought at a moment's notice. Another branch of the industry which has developed during the last decade is the manufacture of shirt waists. All grades of women's underwear is now almost exclusively produced as a factory product.

The conditions in the cloak industry differ materially from those existing in the ready-made clothing industry. The task system has never been applied in the making of ladies' cloaks. The work is mostly piece-work, but work by the week is also common. Most of the cloaks are manufactured in small shops.

An important change in the management of this branch of the industry has taken place during the last decade. A considerable number of those who in 1890 were contractors working for the manufacturers have become manufacturers themselves. Very little capital is required to start in the business of a cloak manufacturer. The contractor with experience in the trade starts a shop and manufactures the goods as it is ordered by the retail trade. When the season approaches he will borrow enough money to enable him to buy the needed materials, giving a mortgage on orders as security. As he will not be under an expense even approaching that incurred by the larger manufacturer, who has to pay large salaries to designers and cutters, he is able

to undersell him to a considerable degree. The result of this has been that many of the larger cloak manufacturers have been either driven out of the business or have opened retail stores for the sale of their own manufacture.

A greater degree of skill is required of the workers in this branch of the industry than in the branch which has to do with the manufacture of men's clothing, but, nevertheless, a large number of immigrants have entered it, depressing the wages to a considerable extent. During the last decade shops employing Polish and Bohemian women have been started by contractors in Chicago. The women have almost entirely displaced the men on all the cheaper grades of work, as they work for about two-thirds the wages paid the men.

The cloak makers have been organized with more or less success since 1884.

Another branch of the industry that the former contractors have taken up is the making of women's suits, the manufacture of which has increased to a large extent during the last ten years. In this industry the garments are also made in different shops; thus the waists are made in one place and the skirts in another. Shirt waists are generally made in larger shops, as is also ladies' underwear. The shirt-waist workers, who are generally women, work in sets. As a rule it takes 10 persons to produce the waists in the factories.

Seven machine operators make different parts, one girl sews on the buttons, one makes the buttonholes, and one irons the waists.

In the manufacture of women's clothing, as in the other main branch of the industry, artificial power gained considerable ground during the decade. In almost all factories for shirt waists and underwear steam or electric power is now used. Of 1,224 establishments in 1890, only 138, or 11.3 per cent, used artificial power, having 1,478 horsepower. In 1900, out of 2,701 establishments not less than 979, or 36.2 per cent, used power, having 10,245 horsepower. The average horsepower per establishment was 10.7 in 1890, and 10.4 in 1900.

Taking the manufacture of ready-made clothing for men, women, and children as a whole, there has been a considerable change for the better during the latter part of the last decade, but as long as it remains an industry which is carried on to a large extent by the contracting system, there can be no certainty that the improvements will be of a lasting character. The remedies which have proven themselves most effective have been strict factory and license laws.

In conclusion, Table 24 is presented, which is a comparative summary for 1890 and 1900 of all the branches of textile clothing manufacture, including tailoring and dressmaking.

TABLE 24.—COMPARATIVE SUMMARY: TEXTILE CLOTHING MANUFACTURE, 1890 AND 1900.

	Year.	United States.	Total men's.	Clothing, men's, factory product.	Clothing, men's, custom work and repairing.	Shirts.	Furnishing goods, men's.
Number of establishments .....	1900	48,497	29,470	5,781	22,184	986	470
	1890	42,485	20,113	4,907	13,591	869	588
Capital .....	1900	\$384,069,634	\$218,510,177	\$120,620,351	\$52,167,658	\$20,812,412	\$20,103,222
	1890	\$311,820,617	\$209,125,560	\$123,253,547	\$54,109,278	\$14,273,611	\$12,299,011
Salaried officials, clerks, etc., number .....	1900	30,206	18,326	10,002	4,137	2,041	2,135
	1890	54,420	29,568	11,415	14,964	1,543	1,483
Salaries .....	1900	\$29,765,995	\$17,618,002	\$10,404,409	\$3,813,029	\$1,734,814	\$2,160,142
	1890	\$42,596,195	\$26,697,789	\$11,235,807	\$12,308,448	\$1,511,108	\$1,511,823
Wage-earners, average number .....	1900	506,809	259,751	120,050	69,149	38,492	30,216
	1890	446,222	269,255	144,926	71,179	31,207	20,778
Total wages .....	1900	\$186,995,568	\$100,540,110	\$45,505,778	\$33,596,967	\$11,425,101	\$9,680,077
	1890	\$162,074,704	\$102,985,835	\$51,075,837	\$36,245,655	\$9,193,495	\$9,078,026
Men, 16 years and over .....	1900	180,615	108,166	48,077	48,748	6,604	4,311
	1890	176,280	128,701	67,786	50,854	5,437	4,152
Wages .....	1900	\$99,694,642	\$60,851,445	\$27,323,966	\$27,900,632	\$3,218,291	\$2,214,487
	1890	\$98,180,848	\$68,551,874	\$33,292,293	\$30,601,235	\$2,553,079	\$1,897,994
Women, 16 years and over .....	1900	310,050	146,231	69,862	19,533	31,074	25,283
	1890	262,433	188,055	75,621	19,779	25,563	16,415
Wages .....	1900	\$85,074,601	\$38,932,639	\$17,766,507	\$5,570,961	\$8,102,976	\$7,864,769
	1890	\$67,885,839	\$34,131,186	\$17,634,858	\$5,551,245	\$6,608,390	\$4,147,903
Children, under 16 years .....	1900	15,644	5,354	3,011	868	814	622
	1890	7,509	2,499	1,519	546	207	211
Wages .....	1900	\$2,226,925	\$756,026	\$415,305	\$125,874	\$108,834	\$100,821
	1890	\$1,007,967	\$303,275	\$148,636	\$98,175	\$27,026	\$32,039
Miscellaneous expenses .....	1900	\$83,948,787	\$59,614,238	\$37,509,258	\$14,689,332	\$4,918,576	\$2,460,838
	1890	\$45,284,094	\$32,938,049	\$20,460,045	\$7,913,423	\$2,188,265	\$2,330,360
Cost of materials used .....	1900	\$423,676,821	\$244,809,353	\$145,295,248	\$52,348,641	\$23,662,817	\$23,404,969
	1890	\$322,994,842	\$210,410,586	\$128,846,857	\$50,494,637	\$15,704,353	\$15,280,572
Value of products .....	1900	\$364,509,370	\$508,181,398	\$276,861,607	\$137,714,282	\$49,022,845	\$43,902,162
	1890	\$676,856,418	\$441,532,354	\$251,019,609	\$126,219,151	\$33,638,593	\$29,870,946

<sup>1</sup> Includes proprietors and firm members with their salaries; number only reported in 1900, but not included in this table.

<sup>2</sup> Includes custom work and repairing.

TABLE 24.—COMPARATIVE SUMMARY: TEXTILE CLOTHING MANUFACTURE, 1890 AND 1900—Continued.

	Year.	Clothing, men's, fac- tory product, buttonholes.	Total, women's.	Clothing, women's, fac- tory product.	Clothing, women's, dressmak- ing.	Total mis- cellaneous.	Hosiery and knit goods. <sup>3</sup>	Hats and caps. <sup>4</sup>
Number of establishments .....	1900	149	17,180	2,701	14,479	1,847	1,007	840
	1890	200	20,811	1,224	19,587	1,561	824	737
Capital .....	1900	\$246,589	\$62,246,765	\$48,481,544	\$18,815,221	\$109,212,692	\$82,066,092	\$27,146,600
	1890	\$190,118	\$84,142,625	\$21,259,528	\$12,883,097	\$68,552,432	\$50,686,206	\$17,866,226
Salaried officials, clerks, etc., number.....	1900	11	7,623	6,715	908	4,257	2,831	1,426
	1890	208	21,844	2,859	18,985	3,013	1,659	1,334
Salaries.....	1900	\$5,608	\$7,324,276	\$6,573,618	\$750,658	\$4,823,717	\$3,138,160	\$1,685,557
	1890	\$134,103	\$12,612,317	\$3,384,515	\$9,227,802	\$3,286,089	\$1,711,291	\$1,574,788
Wage-earners, average number .....	1900	944	129,384	83,789	45,595	117,224	83,691	33,533
	1890	1,165	87,762	39,149	48,618	89,205	59,774	29,431
Total wages .....	1900	\$332,187	\$46,968,554	\$32,586,101	\$14,352,453	\$39,516,904	\$24,434,497	\$15,082,407
	1890	\$392,822	\$28,574,006	\$15,428,272	\$13,145,784	\$80,514,863	\$10,613,970	\$13,900,893
Men, 16 years and over.....	1900	426	30,488	26,109	4,379	41,961	21,197	29,764
	1890	472	14,019	12,963	1,056	33,560	14,875	18,685
Wages.....	1900	\$199,069	\$18,733,747	\$15,790,572	\$2,943,175	\$20,109,450	\$8,913,647	\$11,195,803
	1890	\$201,773	\$3,003,393	\$7,386,955	\$616,438	\$16,626,031	\$6,053,387	\$10,572,694
Women, 16 years and over.....	1900	479	97,701	56,866	40,835	66,118	53,825	12,233
	1890	677	73,077	25,913	47,164	51,301	40,975	10,326
Wages.....	1900	\$127,426	\$28,039,073	\$16,676,390	\$11,363,683	\$18,102,839	\$14,236,602	\$3,866,257
	1890	\$188,700	\$20,476,565	\$7,994,203	\$12,482,362	\$13,278,138	\$10,029,244	\$3,248,894
Children, under 16 years .....	1900	39	1,145	764	381	9,145	8,069	475
	1890	16	666	273	393	4,344	3,924	429
Wages.....	1900	\$5,692	\$165,734	\$120,139	\$45,595	\$1,304,565	\$1,224,248	\$80,317
	1890	\$2,349	\$94,048	\$47,114	\$46,934	\$610,644	\$531,339	\$79,195
Miscellaneous expenses .....	1900	\$36,234	\$15,075,838	\$11,738,695	\$3,342,143	\$9,253,711	\$6,627,724	\$2,635,887
	1890	\$45,956	\$6,797,612	\$3,620,042	\$3,177,570	\$5,548,433	\$3,647,597	\$1,900,836
Cost of materials used.....	1900	\$98,178	\$101,208,346	\$84,704,592	\$16,503,754	\$77,659,122	\$51,195,868	\$26,463,254
	1890	\$84,167	\$57,671,048	\$34,277,219	\$23,393,829	\$54,912,708	\$35,949,865	\$18,962,843
Value of products .....	1900	\$680,502	\$207,695,573	\$159,339,539	\$48,356,034	\$148,632,399	\$95,834,792	\$52,797,697
	1890	\$784,055	\$125,235,751	\$63,164,019	\$57,071,732	\$110,088,308	\$67,446,788	\$42,641,629

<sup>1</sup> Includes proprietors and firm members with their salaries; number only reported in 1900, but not included in this table.

<sup>2</sup> Includes custom work and repairing.

<sup>3</sup> Includes hand-knit goods.

<sup>4</sup> Includes fur hats and wool hats.

Table 24 shows that the total number of establishments in the United States engaged in the manufacture of textile clothing as a factory product, with the tailoring and dressmaking trades added, had increased 6,012 during the decade, from 42,485 to 48,497. The capital increased \$73,149,035, from \$311,820,599 to \$384,969,634; the total number of wage-earners, 60,087, from 446,222 to 506,309; the total wages paid, \$24,920,864, from \$162,074,704 to \$186,995,568; the miscellaneous expenses \$38,659,693, from \$45,284,094 to \$83,943,787; the cost of all materials used \$100,682,479, from \$322,994,342 to \$423,676,821, and the value of all products \$187,652,957, from \$676,856,413 to \$864,509,370.

A decrease in the number of establishments appeared in men's furnishing goods, buttonholes, and dressmak-

ing, while all the other branches showed an increase. It must be remembered that a very small proportion of buttonholes is made in separate factories. With the exception of men's clothing, factory product, and custom work, there was an increase in the capital employed in all the branches. The number of wage-earners increased in all the branches of the industry with the exception of men's clothing, factory product, custom work, and buttonholes, and women's clothing, dressmaking. With the exception of buttonholes and dressmaking, there was a considerable increase in the value of products for all the other branches of the industry. The decrease in the value of products for dressmaking was caused by the large increase in women's ready-made clothing.

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COLLARS AND CUFFS.

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# COLLARS AND CUFFS.

By ARTHUR L. HUNT.

The statistics presented in the following tables relate to establishments engaged in the manufacture of collars and cuffs, composed in whole or in part of linen, during the census year ending May 31, 1900. There was no separate classification for the manufacture of so-called linen collars and cuffs, the returns being included under one of two classifications, "shirts," or "furnishing goods, men's," and it was necessary to withdraw the schedules from these classifications in order to show separate data. Therefore, it is impossible to show comparative statistics for this industry for previous censuses.

In this connection it should be stated that the statistics presented in this report pertain exclusively to establishments engaged primarily in the manufacture of collars and cuffs, and reporting the same as their predominating product, and do not include returns from establishments engaged principally in the manufacture of shirts and men's furnishing goods, but manufacturing collars and cuffs as a subsidiary product. The number of dozens of shirts reported represents only such as were manufactured in connection with the collar and cuff industry. Owing to the fact that there was no separate classification for the industry, there was some difficulty encountered in the preparation of this report in presenting the entire number of establishments for which the value of collars and cuffs represented the predominating product. For this reason, the totals given in this report may not include the returns for every collar and cuff establishment, as such. Nevertheless, the figures given may be taken as fairly representing the totals for the industry.

Table 1 presents the principal features of the industry as returned for 1900.

TABLE 1.—SUMMARY: 1900.

Number of establishments .....	57
Capital .....	\$10,216,317
Salaries of officials, clerks, etc., number .....	508
Salaries .....	\$583,087
Wage-earners, average number .....	17,115
Total wages .....	\$5,654,969
Men, 16 years and over, number .....	2,391
Wages .....	\$1,115,685
Women, 16 years and over, number .....	14,543
Wages .....	\$4,515,856
Children, under 16 years, number .....	181
Wages .....	\$27,428
Miscellaneous expenses .....	\$1,128,887
Cost of materials used .....	\$6,011,556
Value of products .....	\$15,769,132

The industry became of commercial importance some years previous to 1850, and its growth since that date is demonstrated by reference to the number of establishments, capital invested, number of wage-earners, and

the value of the products, as given in Table 1. The size and general character of the establishments may be inferred from a computation of the averages for the above items. The average capital per establishment was \$179,234; the average number of wage-earners, 300, distributed as follows: Men, 42; women, 255; and children, 3; and the average value of product \$276,651. These averages indicate that in general the establishments engaged in this industry were of goodly proportions. This fact is further shown by Table 2, which is a summary of the establishments, grouped according to the number of wage-earners employed.

TABLE 2.—ESTABLISHMENTS CLASSIFIED BY NUMBER OF WAGE-EARNERS EMPLOYED, BY STATES: 1900.

	United States.	New York.	All other states. <sup>1</sup>
Total number of establishments .....	57	54	3
No employees .....			
Under 5 .....	5	5	
5 to 20 .....	8	6	2
21 to 50 .....	11	11	
51 to 100 .....	7	7	
101 to 250 .....	8	7	1
251 to 500 .....	7	7	
501 to 1,000 .....	6	6	
Over 1,000 .....	5	5	

<sup>1</sup> Includes establishments distributed as follows: Pennsylvania, 2; Vermont, 1.

Table 2 indicates that there was but one large establishment outside of the state of New York. The largest number, 11, was reported for the class employing 21 to 50 wage-earners. There were 8 establishments in each of the classes, 5 to 20, and 101 to 250; 7 each in the classes 51 to 100, and 251 to 500; 6 in the class, 501 to 1,000; and 5 employing over 1,000 wage-earners.

The firm and limited partnership form of organization predominates in this industry. Of the total number of establishments, 29, or 50.9 per cent were operated by firms or limited partnerships; 20, or 35.1 per cent, were conducted by individuals; and 8, or 14 per cent, were operated by incorporated companies.

Table 3 is a summary of the statistics of capital, with the per cent of each item to the total, for 1900.

TABLE 3.—CAPITAL: 1900.

	Amount.	Per cent of total.
Total .....	\$10,216,317	100.0
Land .....	808,347	3.0
Buildings .....	1,113,140	10.9
Machinery, tools, and implements .....	964,363	9.4
Cash and sundries .....	7,889,467	76.7

The sum reported for cash and sundries, including cash on hand, bills receivable, unsettled ledger accounts, raw materials, stock in process of manufacture, finished products on hand, and other sundries, constituted the principal item of capital, and formed 76.7 per cent of the total. The large per cent which this item formed of the total is due to the nature of the industry. Manufacturers are under the necessity of purchasing large quantities of cloth at the various seasons in order to keep abreast of the almost numberless changes in styles and designs. This, together with the numerous other items included under this subdivision, made it by far the largest item of capital. The value of machinery, tools, and implements, land, and buildings, all formed comparatively small per cents of the total. The use of machines has supplanted hand labor in nearly every department of the industry, not only in the factory but also in the laundry, and the value of machinery, tools, and implements in 1900 formed a

larger per cent of the total than did the value of buildings. A number of companies rented their works, as is evidenced by Table 5, and this fact is partially accountable for the comparatively small valuation of land and buildings. Furthermore, the nature of the business is such that but little heavy machinery is required, and factories may be many stories in height, obviating the necessity of much ground space; and as there is not much vibration to the machinery, the buildings are not necessarily of expensive construction. The figures given in Table 3 do not represent the capital stock of the establishments, but simply the actual value of the plants, together with the amounts required for working capital. It appears that to produce \$1 of gross products required 65 cents of capital.

Table 4 shows the total number of wage-earners, with wages, the number of men, women, and children, with wages, and the per cent of each to the total number for 1900.

TABLE 4.—WAGE-EARNERS: 1900.

TOTAL, ALL CLASSES.		MEN, 16 YEARS AND OVER.			WOMEN, 16 YEARS AND OVER.			CHILDREN, UNDER 16 YEARS.		
Average number.	Wages.	Average number.	Per cent of total.	Wages.	Average number.	Per cent of total.	Wages.	Average number.	Per cent of total.	Wages.
17, 115	\$5, 658, 969	2, 391	14.0	\$1, 115, 685	14, 543	85.0	\$4, 515, 856	181	1.0	\$27, 428

The general character of the industry relative to wage-earners is shown in Table 4. As indicated therein, the industry gives employment to few children. Collar and cuff making, with the exception of the cutting, upon which the men are engaged, is done mostly by women. It should be stated in this connection that the great majority of wage-earners are employed by the piece, and consequently any deductions regarding the average rate of wages from the figures presented in Table 4 would be inaccurate and misleading.

The making by home workers of some part of the collar or cuff is a peculiar and interesting phase of the manufacture. Since the inception of the industry, much of the work has been done at the homes of families, the members of which were either unable, on account of household duties, to take employment in a factory, or were unwilling to do so. It is stated that there is not a town within a radius of 30 miles of Troy, N. Y., wherein a portion of the female population is not engaged in some part of collar and cuff manufacture. It is estimated that at least one-half of the population of Lansingburg, which is now a part of Troy, are directly dependent on collars, cuffs, and shirts for labor. In West Troy, Bath, and Greenbush, large numbers of females are engaged at home on collar work. Albany also receives large quantities of work to be distributed to women and girls residing within the city limits.

The work sent to these places is usually "turning" and "pasting," as this work must be carefully handled on its return, whereas if sent to more distant places the "turning" would be valueless on account of being pressed out of shape. The people of more distant points are employed mostly in "buttonholing." This work goes to Salem, Greenwich, and Cambridge, in Washington county; as far as Chatham, in Columbia county; and to Pittstown, Valley Falls, Hoosic Falls, Sandlake, Grafton, Stephentown, and various villages between these places. Transportation of the goods to and from the factories is effected either by stage drivers or by carriers who collect the work and come to town to deliver it.

The personnel of the operatives in the factories of Troy is much above the average. The women and girls employed are bright and intelligent, and nearly all of them are natives of Troy or of the immediate vicinity. They seem to have collars and cuffs bred in the bone, and many of them have been trained for years to perfect some little detail of collar or cuff making which may give to that make a superiority that is characteristic of the brand. To these facts may be attributed, to a large extent, the localization of the industry in and about Troy.

Table 5 shows the several items of miscellaneous expenses, with the per cent of each to the total, for 1900.

TABLE 5.—MISCELLANEOUS EXPENSES: 1900.

	Amount.	Per cent of total.
Total .....	\$1,128,887	100.0
Rent of works .....	78,588	7.0
Taxes, not including internal revenue .....	14,188	1.2
Rent of offices, insurance, interest, repairs, advertising, and other sundries .....	672,829	59.6
Contract work .....	363,282	32.2

The successful manufacture of collars and cuffs necessitates the expenditure of large sums for advertising purposes. Further, nearly all of the large establishments maintain offices in several of the larger cities of the country. Quite naturally, then, the amount paid for rent of offices and all other sundries not elsewhere reported, including advertising, formed the major part of miscellaneous expenses. That the amount paid for contract work constituted nearly one-third of the total reported for miscellaneous expenses is a noteworthy fact and is characteristic of the industry. This item does not include the amounts paid to home workers for piecework, as described in connection with Table 4.

Table 6 is a summary of the quantity and cost of the different materials, with the per cent of each item to the total quantity and cost, for 1900.

TABLE 6.—QUANTITY AND COST OF MATERIALS: 1900.

	Square yards.	Cost.	Per cent of total	
			Quantity.	Cost.
Total .....		\$6,011,556		100.0
Cloth .....			100.0	87.4
Cotton .....	60,817,101	5,251,237		70.8
Linen .....	57,602,200	4,255,930	5.3	3.3
Buttons, thread, ribbon, tape, etc. ....	3,214,901	995,307		1.1
Fuel .....		199,240		0.1
Rent of power and heat .....		64,862		0.8
Mill supplies .....		8,941		5.1
All other materials .....		50,459		2.2
Freight .....		306,955		
		129,862		

In the manufacture of collars, cuffs, and shirts both cotton and linen are used. Table 6 shows that the quantity of cotton cloth formed 94.7 per cent of the total number of square yards of cloth used. Attention should be called to the fact that, as indicated in Table 7, the value of shirts constituted over one-third of the value of products, and in their manufacture cotton cloth is the principal material used. The average cost of cotton cloth per square yard was 7.4 cents and of linen cloth 31 cents. The average cost is obtained from the totals of the whole number of establishments

from which reports were received; in many instances the materials were bought delivered, and therefore the average can not be assumed to be the price paid by any particular establishment.

The cost of "All other materials" included the amount expended for boxes, cases, and numerous other incidentals required to prepare the product for the market.

Table 7 is a summary of the value of products, the number of dozens, and the value of collars and cuffs, shirts, and shirt waists, and the per cent of each to the total value for 1900.

TABLE 7.—QUANTITY AND VALUE OF PRODUCTS: 1900.

	Quantity (dozens).	Value.	Per cent of total value.
Total .....		\$15,769,132	100.0
Collars and cuffs .....	10,086,045	9,077,700	57.6
Shirts .....	858,868	5,864,671	37.2
Shirt waists .....	81,948	650,228	4.1
All other products .....		176,533	1.1

As shown by Table 7, the total value of products was \$15,769,132. The extent to which the manufacture of shirts is carried on in connection with the collar and cuff industry is exemplified by this table. The value of collars and cuffs was \$9,077,700, or 57.6 per cent of the total, and the value of shirts was \$5,864,671, or 37.2 per cent of the total. The number of collars and cuffs was 10,086,045 dozens, or in actual numbers, 121,032,540, and the number of shirts was 858,868 dozens, or 10,306,416. Attention should again be directed to the fact that the above figures do not represent the total quantities of collars and cuffs manufactured during the census year, but only those made by establishments which reported collars and cuffs as their principal product. No attempt was made to secure the quantities manufactured by establishments engaged primarily in the manufacture of shirts, as collars and cuffs are principally made by them to match the shirt. Further, the number of dozens of shirts represents only the quantity manufactured in connection with the collar and cuff industry, and therefore constituted only a small percentage of the total number manufactured by establishments engaged principally in the manufacture of shirts. The value of shirt waists and "all other products" formed but relatively small per cents of the total.

Table 8 shows the totals for Troy and other cities in New York, in comparison with the state as a whole, and with the United States.

## MANUFACTURES.

TABLE 8.—COMPARATIVE SUMMARY OF STATISTICS FOR TROY AND OTHER CITIES OF NEW YORK, FOR NEW YORK STATE, AND FOR THE UNITED STATES: 1900.

	United States.	NEW YORK STATE,					
		Total.	Per cent of United States total.	Troy.		Other cities. <sup>1</sup>	
				Total.	Per cent of state total.	Total.	Per cent of state total.
Number of establishments.....	57	54	94.7	29	53.7	25	46.3
Capital.....	\$10,216,317	\$10,176,067	99.6	\$8,768,337	86.2	\$1,407,730	13.8
Salaries.....	508	499	98.2	412	82.6	87	17.4
Wage-earners, average number.....	\$588,067	\$574,850	98.6	\$489,939	85.2	\$84,911	14.8
Total wages.....	17,115	17,012	99.4	14,822	87.1	2,190	12.9
Men, 16 years and over, average number.....	\$5,658,969	\$5,658,095	99.5	\$4,956,427	88.0	\$876,668	15.2
Wages.....	2,391	2,374	99.3	2,013	84.8	361	14.9
Women, 16 years and over, average number.....	\$1,116,685	\$1,106,907	99.2	\$941,500	85.1	\$165,407	12.4
Wages.....	14,643	14,459	99.4	12,666	87.6	1,793	11.2
Children, under 16 years, average number.....	\$4,616,866	\$4,499,133	99.6	\$3,993,309	88.8	\$605,824	20.1
Wages.....	181	179	98.9	143	79.9	36	20.1
Miscellaneous expenses.....	\$27,428	\$27,055	98.6	\$21,618	79.9	\$5,487	12.0
Cost of materials used.....	\$1,128,887	\$1,118,903	99.1	\$984,507	88.0	\$134,396	15.6
Value of products.....	\$6,011,556	\$5,992,425	99.7	\$5,064,539	84.5	\$927,886	14.3
Collars and cuffs:	\$15,709,132	\$15,703,641	99.6	\$13,400,196	85.7	\$2,248,445	10.5
Value.....	\$9,077,700	\$9,020,562	99.4	\$8,073,271	89.5	\$947,291	11.3
Dozen.....	10,086,046	10,011,650	99.3	8,881,400	88.7	1,180,250	19.4
All other products.....	\$6,091,482	\$6,682,979	99.9	\$5,386,925	80.6	\$1,296,054	

<sup>1</sup>Includes establishments distributed as follows: Albany, 9; Glens Falls, 6; New York, 7; Cohoes, 1; Malone, 1; Schenectady, 1. (See Table 9.)

Table 8 indicates the extent to which the industry is local and peculiar to the state of New York, and especially to Troy. The industry is practically confined to the state of New York and is localized in and about Troy. Of the total number of establishments returned for the state, 29, or 53.7 per cent, were located in that city. The capital reported for Troy was \$8,768,337, or 86.2 per cent, and the wage-earners formed 87.1 per cent of the state total. Of the remaining items not one formed less than 80 per cent of the state total. The large per cent of the total capital and number of wage-earners in comparison with the smaller per cent of the number of establishments shows the size of the Troy establishments in comparison with those of the rest of the state.

The average capital and average number of wage-earners of the establishments located in Troy and in the other cities shed further light upon this subject. The average capital per establishment for Troy was \$302,356 and the average number of wage-earners 511, as compared with an average capital of \$17,159 and an average number of wage-earners of 88 for the other cities of the state. The value of products formed 85.7 per cent, and the number and value of collars and cuffs was 89.5 per cent, of the total for the state.

This industry resembles the manufacture of leather gloves and mittens in its tendency to centralize in one community; and the causes of the localization are analogous, as both were due to the circumstances connected with the inception of the industries in this country. The historical sketch which follows indicates that the first collars and cuffs were made in Troy, and as the industry became a factor in the commercial world, the number of families which became dependent upon it steadily increased, until nearly every one within a radius of 25 or 30 miles was vitally interested in the manufacture of collars and cuffs. Nearly every factory is either owned or controlled by residents of Troy, most of whom were at one time employed in the factories, and who, by their enterprise and energy, have become managers or owners of establishments. The young women, even after leaving the factory to assume the responsibilities of the household, continue to "turn," "paste," or "buttonhole" collars and cuffs during their leisure hours. Thus circumstances have continued to make this industry local.

Collars and cuffs are manufactured in other cities in New York to some extent, but principally within a short distance of Troy. The statistics for these cities are shown in Table 9.

TABLE 9.—STATISTICS OF CITIES OF NEW YORK STATE, EXCLUSIVE OF TROY: 1900.

	Rank, by value of products.	Number of establishments.	Capital.	SALARIED OFFICIALS, CLERKS, ETC.		WAGE-EARNERS.	
				Number.	Salaries.	Average number.	Wages.
Total.....		25	\$1,407,730	87	\$84,911	2,190	\$676,668
Glens Falls.....	1	6	518,462	46	37,597	878	200,034
Albany.....	2	9	378,549	15	16,804	591	193,268
New York.....	3	7	140,148	22	18,160	189	77,922
Other cities <sup>1</sup> .....		3	375,571	4	12,360	632	205,444

TABLE 9.—STATISTICS OF CITIES OF NEW YORK STATE, EXCLUSIVE OF TROY: 1900—Continued.

	Miscellaneous expenses.	Cost of materials used.	PRODUCTS.					
			Total value.	Collars and cuffs.		Shirts.		All other products.
				Dozens.	Value.	Dozens.	Value.	
Total .....	\$134,396	\$927,886	\$2,243,345	1,130,250	\$947,291	133,622	\$1,094,840	\$201,205
Glens Falls .....	46,196	284,591	720,982	453,069	397,912	35,762	292,370	30,700
Albany .....	25,725	200,107	602,808	281,744	210,679	61,440	244,104	143,025
New York .....	19,343	150,365	297,415	194,437	147,250	35,720	128,625	21,540
Other cities <sup>1</sup> .....	43,132	292,823	622,140	201,000	191,450	50,700	429,750	940

<sup>1</sup> Includes establishments distributed as follows: Cohoes, 1; Malone, 1; Schenectady, 1.

Table 9 shows that Glens Falls led the remaining cities in the value of products, although Albany ranked first in the number of establishments. New York followed Albany in the number of establishments and also in the value of products. The total output of collars and cuffs for these cities is insignificant in comparison with the number reported for Troy.

Table 10 shows the imports of collars and cuffs, composed in whole or in part of linen, for each year from 1890 to 1900, inclusive, according to the reports of the Bureau of Statistics, Treasury Department.

TABLE 10.—COLLARS AND CUFFS, COMPOSED IN WHOLE OR IN PART OF LINEN, IMPORTS FOR CONSUMPTION: 1890 TO 1900, INCLUSIVE.

YEARS.	Dozens.	Value.	YEARS.	Dozens.	Value.
1900.....	48,280	\$56,388	1897.....	97,575	\$103,603
1899.....	55,448	60,479	1896.....	107,849	120,017
1898.....	66,839	70,008	1895.....	111,136	133,457

TABLE 10.—COLLARS AND CUFFS, COMPOSED IN WHOLE OR IN PART OF LINEN, IMPORTS FOR CONSUMPTION: 1890 TO 1900, INCLUSIVE—Continued.

YEARS.	Dozens.	Value.	YEARS.	Dozens.	Value.
1894.....	83,679	\$87,854	1891.....	40,089	\$45,022
1893.....	89,138	93,705	1890.....	( <sup>1</sup> )	( <sup>1</sup> )
1892.....	78,328	87,285			

<sup>1</sup> Not separately reported prior to 1891.

The fluctuations in the imports of collars and cuffs are shown in the above table. It appears that from 1891 to 1895, inclusive, with the exception of 1894, the imports steadily increased. Since 1895 the decrease has been more rapid than was the increase prior to that date, until in 1900 the figures were only slightly in excess of those reported for 1891. They are so insignificant compared with the American manufacture that it may be said that nearly all of the collars and cuffs used in this country are of home manufacture.

HISTORICAL AND DESCRIPTIVE.

The history of collar manufacture in this country dates from its inception in Troy, N. Y., about seventy-five years ago. At that date shirts were made with collars attached; and it is stated that the wife of a Troy blacksmith made for sale the first separate collar, which was cut with scissors on a paper pattern. The making of detachable collars was naturally regarded as a great reform in men's wear, and it attracted the attention of Mr. Ebenezer Brown, a retired Methodist minister, who at that time was the proprietor of a small dry goods store. He it was who first conceived the idea of making collars in commercial quantities, and their manufacture formed an important branch of his business.

At first the collars were made by the female members of his household, the linen being cut to shape with scissors, hand stitched, and starched and ironed upon the kitchen table. Soon the increasing demand for his "store collars" encouraged him to engage the services of the wives and daughters of his neighbors. The material was cut at his store on a wooden pattern, which presaged the modern cutting table, and was the first notable advance in the process of manufacture. The material being ready, the workers took it to their homes and agreed to "make, wash, starch, and iron

the collars," and to receive merchandise as their compensation. It is stated that a card containing the following statement of the former preacher accompanied each installment of work: "In pay you buy my goods at my prices."

The collars were tied around the neck of the wearer with tape string, and were commonly referred to as "string collars." They were two-ply, of heavy linen, made somewhat stiff with starch, and were supported by haircloth stocks buckled at the back of the neck.<sup>1</sup> Their immediate success and popularity caused others to engage in the manufacture. For a time they followed Mr. Brown's methods, and conducted a collar business in connection with other lines of industry; and it was not until 1843 that the manufacture of linen collars and shirt bosoms was engaged in as a separate business.

The following year another independent stock and collar maker appeared, and a few years later he added a laundry to his factory and laundered the goods of other collar makers in addition to those of his own manufacture. The operation of a laundry in connection with collar manufacture had a stimulating effect

<sup>1</sup> City of Troy and Its Manufacturing, by Arthur James Weise, 1886, page 74.

upon the industry, and caused the establishment of additional collar factories.

The manufacture of collars was an organized industry some years previous to that of cuffs and shirts. It was not until the year 1845 that the latter industry was begun in Troy, and it was a natural outgrowth of the collar industry. That the collar industry was at that time in a prosperous condition may be judged from the fact that previous to the introduction of the sewing machine, manufacturers were unable to fill their orders for lack of a sufficient number of skilled operators.

It appears that the introduction of the sewing machine for the manufacture of collars and cuffs is credited to both Mr. O. W. Edson and Mr. Jefferson Gardner. At first there was much opposition to the use of the machine, both on the part of the employer and employee, the former having little faith in its efficiency and the latter fearing that the machine would displace his labor. Mr. Edson, however, purchased a number of sewing machines, and at his home instructed the girls in his employ how to operate them; and as soon as the operator became proficient the machine was transferred to his factory. Mr. Gardner also installed machines in his establishment at about the same time. The advantages of machine over hand work were soon seen and appreciated, and other manufacturers began to adopt them. The application of steam power was another great advance in the industry and not only caused the erection of new establishments, but greatly reduced the cost of production, and also caused a proportionate decrease in the price to the consumer.

In general there are two classes of collars, the standing and the turn down, and, of course, there are endless varieties of each class, each manufacturer originating a number of styles for which his firm is usually widely known. After an examination of the strength, weight, and color of the linen and muslin, the goods are sent to the cutter, who stretches the webs back and forth upon the table until the desired number of thicknesses is obtained, when iron weights are placed at intervals to keep the cloth in position. The cutter, after arranging block patterns of the desired size and style, begins at the edge of the cloth nearest to him and so cuts away from him across the goods. The back and front of a collar are cut together, and a second operation is required for cutting the interlinings. In a straight standing collar the facing is usually of cambric muslin, except in the case of an all-linen collar, and it must conform to the shape of the front of the collar. The interlining in a four-ply collar is cut in one piece and doubled over.

As soon as the separate parts of a collar are ready to be put together the facings are sent to the "stampers," or girls who stamp the name, brand, and size on the facings. After this operation the constituent parts of the collar are arranged by the "pasters," who properly arrange the parts with paste in preparation for the

"turners." At this stage the interlining is without, and the front and back are on the inside. The pieces are stitched at the top and sides by the "runners," after which they are ready for the "turners." The reversing or turning of the collar requires a certain degree of skill and experience and is mostly done by "home workers" and not as a factory employment, although machinery is now doing this work to some extent. The collar is then ready to be sent to the stitching room proper, where the final sewing is done, after which the buttonholes are made.

The making of a turn-down collar is somewhat more complicated than that of a standing collar, as it is composed of two parts, the top and the band, whereas the standing collar in most instances is all one piece. The band itself is made up of three pieces, front, back, and interlining, and in a number of factories they are cut by stamping dies. On this style of collar the name, size, and brand are stamped on the front of the band. The parts comprising the top and front, back, and interlining are fitted together, overseamed, and run. The stitchers prepare the top for joining to the band. Inasmuch as the top and band have to be carefully fitted to each other, the curved line of one exactly coinciding with the curve of the other, "banding" requires considerable skill. The interlining and the back of the band are stitched to one side of the "top" and the "front" is stitched to the other side, and the band is then turned to its proper shape. The buttonholes are next made, and the collar is complete. The processes employed in cuff manufacture are similar to those used in the manufacture of collars.

After the collars and cuffs are finished they are sorted and counted, prior to being sent to the laundry. Many of the larger manufacturers operate laundries in connection with their factories, while others send their goods to outside laundry establishments. Wonderful improvements have been made in laundry machinery and apparatus, and both starching and ironing are now extensively done by machinery, although hand starching is still in vogue. From the establishment of the United States Patent Office to January 1, 1902, there have been issued, in connection with the laundry industry, 8,762 patents, classified as follows:

Patents.	Number.	Patents.	Number.
Total.....	8,762	Wash boilers.....	493
Bosom boards.....	163	Washing-machine agitator.....	268
Clamps.....	14	Washing machine and bed.....	528
Clothes driers.....	821	Washing-machine boiler.....	200
Clothesline fasteners.....	110	Washing machine, combined washing and wringing.....	50
Clothesline reels.....	82	Washing-machine cylinder.....	269
Clotheslines.....	209	Washing machines, miscellaneous.....	72
Clothes pounders.....	230	Washing-machine pounder.....	797
Clothes sticks and tongs.....	41	Washing-machine reprocating rubber.....	931
Fluting irons.....	160	Washing machine, rocking wringing.....	191
Hand rubbers.....	43	Washing-machine roller.....	122
Ironing machines.....	400	Washing-machine rotary rubber.....	167
Ironing tables.....	559	Wash tubs.....	51
Laundries.....	22	Wringing rolls.....	98
Mangles.....	96	Wringers.....	524
Sadiron holder.....	98		
Sadiron.....	493		
Starching machines.....	91		
Wash benches.....	111		
Washboards.....	318		

After being received in the laundry the goods are first washed in large revolving wash wheels, which are located in the basement. They are then sent upstairs to be smoothed out preparatory to starching, which is the next process. After this operation they are smoothed out by hand, before being sent to the dry room to be made ready for the ironing machine. After coming from the laundry they are examined for any damages or manufacturing imperfections hitherto overlooked. They are then boxed and prepared for shipment.

Table 11, which follows, shows in detail the statistics relating to the manufacture of collars and cuffs, as returned by the 57 establishments engaged in the industry in 1900.

TABLE 11.—COLLARS AND CUFFS, BY STATES: 1900.

	United States.	New York.	All other states. <sup>1</sup>
Number of establishments	57	54	3
Character of organization:			
Individual	20	18	2
Firm and limited partnership	29	29	1
Incorporated company	8	7	1
Capital:			
Total	\$10,216,317	\$10,176,067	\$40,250
Land	\$303,347	\$302,397	\$450
Buildings	\$1,113,140	\$1,105,940	\$7,200
Machinery, tools, and implements	\$964,363	\$957,063	\$7,300
Cash and sundries	\$7,835,467	\$7,810,167	\$25,300
Proprietors and firm members	104	102	2
Salaried officials, clerks, etc.:			
Total number	508	499	9
Total salaries	\$583,037	\$574,850	\$8,237
Officers of corporations—			
Number	19	19	—
Salaries	\$73,730	\$73,730	—
General superintendents, managers, clerks, etc.—			
Total number	489	480	9
Total salaries	\$509,357	\$501,120	\$8,237
Men—			
Number	429	422	7
Salaries	\$481,591	\$474,412	\$7,179
Women—			
Number	80	58	2
Salaries	\$27,766	\$26,708	\$1,058
Wage-earners, including pieceworkers:			
Greatest number employed at any one time during the year	18,419	18,230	189
Least number employed at any one time during the year	14,854	14,795	59
Average number	17,135	17,032	103
Total wages	\$5,658,969	\$5,636,095	\$25,874
Men, 16 years and over—			
Average number	2,391	2,374	17
Wages	\$1,115,685	\$1,106,907	\$8,778
Women, 16 years and over—			
Average number	14,568	14,479	84
Wages	\$4,515,856	\$4,499,188	\$16,728
Children, under 16 years—			
Average number	181	179	2
Wages	\$27,428	\$27,055	\$373
Average number of wage-earners, including pieceworkers, employed during each month:			
Men, 16 years and over—			
January	2,507	2,495	12
February	2,545	2,531	14
March	2,615	2,601	14
April	2,587	2,572	15
May	2,377	2,358	19
June	2,340	2,322	18
July	2,274	2,256	18
August	2,066	2,046	21
September	2,241	2,221	20
October	2,297	2,278	19
November	2,442	2,423	19
December	2,405	2,386	19
Women, 16 years and over—			
January	14,937	14,900	37
February	15,518	15,479	39
March	15,856	15,808	48
April	15,017	15,011	6
May	14,737	14,728	64

<sup>1</sup>Includes establishments distributed as follows: Pennsylvania, 2; Vermont, 1.

TABLE 11.—COLLARS AND CUFFS, BY STATES: 1900—Continued.

	United States.	New York.	All other states. <sup>1</sup>
Average number of wage-earners, including pieceworkers, employed during each month—Continued.			
Women, 16 years and over—Continued.			
June	14,487	14,422	65
July	13,709	13,615	94
August	13,217	13,087	130
September	13,602	13,468	144
October	13,925	13,807	118
November	14,439	14,341	98
December	14,650	14,542	114
Children, under 16 years—			
January	172	170	2
February	178	176	2
March	182	180	2
April	182	180	2
May	198	194	4
June	211	209	2
July	193	192	1
August	173	171	2
September	178	176	2
October	176	173	2
November	178	175	3
December	164	163	1
Miscellaneous expenses:			
Total	\$1,128,887	\$1,118,903	\$9,984
Rent of works	\$78,588	\$78,898	\$195
Taxes, not including internal revenue	\$14,188	\$14,174	\$14
Rent of offices, insurance, interest, etc.	\$672,829	\$670,452	\$2,377
Contract work	\$363,282	\$355,884	\$7,398
Materials used:			
Total cost	\$6,011,556	\$5,992,425	\$19,131
Cloth—			
Total square yards	60,817,101	60,626,403	190,698
Total cost	\$5,251,237	\$5,235,255	\$15,982
Cotton, square yards	57,602,200	57,421,002	181,198
Cost	\$4,255,950	\$4,242,893	\$12,057
Linen, square yards	3,214,901	3,205,401	9,500
Cost	\$995,807	\$992,857	\$2,950
Buttons, thread, ribbon, tape, etc., cost	\$199,240	\$198,395	\$845
Fuel	\$64,862	\$64,486	\$376
Rent of power and heat	\$8,941	\$8,914	\$27
Mill supplies	\$50,459	\$50,376	\$83
All other materials	\$300,955	\$305,333	\$1,562
Freight	\$129,862	\$129,606	\$256
Products:			
Aggregate value	\$15,769,132	\$15,703,541	\$65,591
Collars, cuffs, shirts, and shirt waists:			
Total value	\$15,592,599	\$15,535,461	\$57,138
Total cost	10,036,045	10,011,650	24,395
Collars and cuffs, dozens	\$9,077,700	\$9,020,562	\$57,138
Value	853,808	853,808	—
Shirts, dozens	\$5,864,671	\$5,864,671	—
Value	\$1,948	\$1,948	—
Shirt waists, dozens	\$650,228	\$650,228	—
Value	\$170,533	\$168,080	\$2,453
All other products, value	—	—	—
Comparison of products:			
Number of establishments reporting for both years	44	42	2
Value for census year	\$13,185,880	\$13,120,459	\$64,941
Value for preceding business year	\$11,994,237	\$11,965,637	\$28,600
Power:			
Number of establishments reporting	46	48	3
Total horsepower	2,304	2,269	35
Owned—			
Engines—			
Steam, number	29	27	2
Horsepower	1,782	1,749	33
Water wheels, number	3	3	—
Horsepower	140	140	—
Electric motors, number	1	1	—
Horsepower	2	2	—
Rented—			
Electric horsepower	141	141	—
All other, horsepower	239	237	2
Furnished to other establishments, horsepower	45	45	—
Establishments classified by number of persons employed, not including proprietors and firm members:			
Total number of establishments	57	54	3
Under 5	5	5	—
5 to 20	8	6	2
21 to 50	11	11	—
51 to 100	7	7	—
101 to 250	8	7	1
251 to 500	7	7	—
501 to 1,000	6	6	—
Over 1,000	5	5	—

<sup>1</sup>Includes establishments distributed as follows: Pennsylvania, 2; Vermont, 1.

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BUTTONS.

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# BUTTONS.

By AXEL JOSEPHSSON.

Table 1 is a comparative summary of the statistics for the manufacture of buttons as returned at the censuses of 1850 to 1900, inclusive, with the percentages of increase for each decade.

TABLE 1.—COMPARATIVE SUMMARY, 1850 TO 1900, WITH PER CENT OF INCREASE FOR EACH DECADE.

	DATE OF CENSUS.						PER CENT OF INCREASE.				
	1900	1890	1880	1870	1860	1850	1900 to 1890	1890 to 1880	1870 to 1880	1860 to 1870	1850 to 1860
Number of establishments.....	238	106	124	64	43	59	124.5	114.5	93.8	48.8	127.1
Capital.....	\$4,212,568	\$3,089,265	\$2,013,350	\$1,013,700	\$553,550	\$393,000	36.4	53.4	98.6	81.5	42.1
Salaried officials, clerks, etc., number.....	330	205	(3)	(3)	(3)	(3)	65.4	(3)	(3)	(3)	(3)
Salaries.....	\$296,358	\$262,787	(3)	(3)	(3)	(3)	12.8	(3)	(3)	(3)	(3)
Wage-earners, average number.....	8,685	3,881	5,825	1,912	1,161	1,088	126.7	134.2	204.7	64.7	6.7
Total wages.....	\$2,826,238	\$1,411,089	\$1,645,180	\$680,380	\$260,206	\$225,120	100.3	114.2	188.5	123.0	16.6
Men, 16 years and over.....	4,086	1,544	2,128	617	487	467	164.6	127.4	244.9	26.7	4.3
Wages.....	\$1,758,133	\$805,782	(3)	(3)	(3)	(3)	117.6	(3)	(3)	(3)	(3)
Women, 16 years and over.....	4,131	2,176	3,052	949	674	621	89.8	128.7	221.6	40.8	8.5
Wages.....	\$907,857	\$588,901	(3)	(3)	(3)	(3)	69.4	(3)	(3)	(3)	(3)
Children, under 16 years.....	468	111	645	346	(3)	(3)	321.6	182.3	86.4	(3)	(3)
Wages.....	\$75,248	\$16,406	(3)	(3)	(3)	(3)	558.7	(3)	(3)	(3)	(3)
Miscellaneous expenses.....	\$393,862	\$256,846	(4)	(4)	(4)	(4)	53.3	(4)	(4)	(4)	(4)
Cost of materials used.....	\$2,803,246	\$1,551,603	\$1,792,391	\$751,183	\$358,385	\$324,337	80.7	113.5	138.7	109.6	10.3
Value of products.....	\$7,695,910	\$4,216,795	\$4,449,542	\$1,778,398	\$949,408	\$964,359	82.5	15.2	150.1	87.4	11.6

<sup>1</sup> Decrease.

<sup>2</sup> Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this table. (See Table 11.)

<sup>3</sup> Not reported separately.

<sup>4</sup> Not reported.

The figures for 1900 in the above table do not include 20 establishments having a product of less than \$500 each. The combined capital of these establishments was \$10,405, and the total value of their products was \$3,798. They were not included in this table in order to preserve the basis of comparison with previous censuses, at which such establishments were not reported.

Although the manufacture of buttons in the United States began prior to 1810 and statistics for the industry appeared for the first time in the census reports of that year, the census of 1850 was the first at which statistics of a sufficiently uniform character to be compared were presented. The general progress of the industry during the past half century is shown by Table 1. The number of establishments increased from 59 to 238; the capital, from \$393,000 to \$4,212,568; the average number of wage-earners, from 1,088 to 8,685; the amount of wages paid, from \$225,120 to \$2,826,238; the cost of materials used, from \$324,337 to \$2,803,246; and the value of products, from \$964,359 to \$7,695,910. The greatest growth was that during the decade ending in 1880, when the increase in value of products was

150.1 per cent. From 1880 to 1890 there was a decrease in every particular except that of capital, the value of products, however, showing the least diminution, 5.2 per cent. The last decade showed an increase of 82.5 per cent in value of products. These statistics, while reflecting the increase in the value of products, do not indicate the real growth in the quantity of products manufactured, which has increased in far greater proportions on account of the introduction of new methods of manufacture, whereby prices have been considerably reduced.

A comparison of the statistics for 1900 and 1890 shows the growth of the industry during the decade and its present condition. The number of establishments increased from 106 in 1890 to 238 in 1900, or 124.5 per cent, while the capital increased only from \$3,089,265 to \$4,212,568, or 36.4 per cent. The button industry, in contrast with most of the larger industries, shows a considerable decrease in the average capital per establishment, the average being \$29,144 for 1890 and only \$17,700 for 1900. This decrease is due in part to the number of establishments engaged in the manufacture

of fresh-water pearl button blanks, a branch of the industry which has sprung into existence since 1890 and requires a comparatively small capital. Statistics for the establishments engaged exclusively in this manufacture are separately shown in Table 4, and if the capital for these establishments were deducted from the total capital as presented in Table 1, the average capital for establishments engaged principally in the manufacture of buttons would be \$21,797. The largest increase during the decade appears in the average number of wage-earners, which increased from 3,831 to 8,685, or 126.7 per cent. The amount of wages paid more than doubled. The cost of materials used increased from \$1,551,603 to \$2,803,246, or 80.7 per cent, and the value of products from \$4,216,795 to \$7,695,910, or 82.5 per cent.

Table 2 presents, by states, the number of active establishments in 1900 and 1890, with the increase.

TABLE 2.—COMPARATIVE SUMMARY: NUMBER OF ACTIVE ESTABLISHMENTS, 1900 AND 1890, AND INCREASE DURING DECADE, BY STATES, ARRANGED GEOGRAPHICALLY.

STATES.	1900	1890	Increase.
United States.....	238	106	132
New England states.....	28	34	16
New Hampshire.....	1		1
Massachusetts.....	13	16	13
Rhode Island.....	3	4	11
Connecticut.....	11	14	13
Middle states.....	106	67	39
New York.....	49	34	15
New Jersey.....	34	17	17
Pennsylvania.....	21	14	7
Maryland.....		1	1
District of Columbia.....	2	1	11

<sup>1</sup>Decrease.

TABLE 2.—COMPARATIVE SUMMARY: NUMBER OF ACTIVE ESTABLISHMENTS, 1900 AND 1890, ETC.—Continued.

STATES.	1900	1890	Increase.
Southern states.....	2	1	1
Kentucky.....	1	1	
Arkansas.....	1		1
Central states.....	95	4	91
Ohio.....	4		4
Michigan.....	2		2
Illinois.....	14	4	10
Wisconsin.....	9		9
Minnesota.....	2		2
Iowa.....	53		53
Missouri.....	11		11
Western states.....	2		2
Nebraska.....	2		2
Pacific states.....	5		5
California.....	5		5

Table 2 shows that while in 1890 establishments were found in only 9 states and 1 territory, in 1900 they were distributed over 19 states. Iowa led in number, New York was second, and New Jersey third. Of the new plants, 53 were located in Iowa, where none were reported ten years before. Besides Iowa, 9 of the states reporting button factories in 1900 had none in 1890. In New Jersey 17 establishments began operations during the decade. New York came next with 15, followed by Illinois with 10 establishments.

Table 3 is a summary of the industry, by states, for 1900. In 1890 only 7 states could be shown separately, because in these only was the number of establishments 3 or more; in 1900 there were 12 states having 3 or more. In 1900, 7 states reported fewer than 3 establishments each, and in order that the operations of individual establishments may not be disclosed, they are included under "all other states."

TABLE 3.—SUMMARY BY STATES: 1900.

	United States.	California.	Connecticut.	Illinois.	Iowa.	Massachusetts.	Missouri.	New Jersey.	New York.	Ohio.	Pennsylvania.	Rhode Island.	Wisconsin.	All other states. <sup>1</sup>
Number of establishments.	238	5	11	14	53	13	11	34	49	4	21	3	9	11
Capital:														
Total.....	\$4,212,568	\$6,487	\$532,178	\$53,498	\$324,315	\$626,439	\$39,495	\$509,681	\$1,195,343	\$49,645	\$557,488	\$29,116	\$34,499	\$254,389
Land.....	\$145,260		\$46,400	\$525	\$15,685	\$33,300	\$000	\$8,250	\$13,100		\$24,500		\$1,300	\$3,100
Buildings.....	\$433,268		\$96,000	\$1,450	\$24,991	\$105,300	\$8,150	\$34,672	\$46,900		\$47,580		\$4,595	\$68,630
Machinery, tools, and implements.....	\$1,310,442	\$725	\$164,728	\$14,271	\$111,727	\$122,669	\$12,188	\$154,086	\$395,107	\$15,500	\$200,052	\$20,500	\$12,539	\$86,400
Cash and sundries.....	\$2,323,598	\$5,762	\$225,050	\$37,247	\$171,912	\$364,070	\$23,557	\$314,723	\$740,236	\$34,145	\$285,356	\$3,616	\$16,065	\$96,259
Salaried officials, clerks, etc., number.....	330	1	24	14	42	19	4	53	105	7	42	4	4	20
Salaries.....	\$296,358	\$1,200	\$30,812	\$7,629	\$26,306	\$31,164	\$1,236	\$50,299	\$88,195	\$4,786	\$39,152	\$2,464	\$1,426	\$16,690
Wage-earners, average number.....	8,685	6	800	272	1,402	772	83	1,169	2,647	72	1,140	28	106	188
Total wages.....	\$2,826,238	\$988	\$305,687	\$101,039	\$458,086	\$276,202	\$23,881	\$410,056	\$812,978	\$18,268	\$321,478	\$8,501	\$32,108	\$56,971
Men, 16 years and over.....	4,086		305	210	887	302	58	551	1,167	29	847	19	74	147
Wages.....	\$1,753,133		\$169,763	\$86,174	\$361,062	\$141,049	\$19,133	\$258,119	\$404,518	\$10,504	\$166,892	\$5,730	\$26,088	\$44,101
Women, 16 years and over.....	4,131	2	460	48	441	443	21	544	1,349	40	711	9	26	37
Wages.....	\$997,857	\$336	\$132,018	\$11,302	\$86,550	\$131,929	\$4,220	\$185,610	\$326,130	\$7,140	\$141,601	\$2,771	\$5,880	\$12,370
Children, under 16 years.....	468	4	35	14	74	27	4	74	141	3	82		6	4
Wages.....	\$75,248	\$652	\$3,906	\$3,563	\$10,474	\$3,224	\$528	\$16,327	\$22,330	\$624	\$12,980		\$140	\$500
Miscellaneous expenses.....	\$393,862	\$1,277	\$117,643	\$11,329	\$37,252	\$27,505	\$10,738	\$37,879	\$110,717	\$5,701	\$17,683	\$4,893	\$1,830	\$9,865
Cost of materials used.....	\$2,803,246	\$2,795	\$430,187	\$66,213	\$196,842	\$237,335	\$26,679	\$398,616	\$948,432	\$20,946	\$403,106	\$9,040	\$18,751	\$48,304
Value of products.....	\$7,695,910	\$8,870	\$1,087,235	\$242,444	\$366,538	\$681,081	\$85,449	\$1,025,544	\$2,871,196	\$58,878	\$999,355	\$33,589	\$63,125	\$172,611

<sup>1</sup>Includes establishments distributed as follows: Arkansas, 1; Kentucky, 1; Maryland, 2; Michigan, 2; Minnesota, 2; Nebraska, 2; New Hampshire, 1.

Since the census of 1890 an entirely new branch of the industry has been introduced—the manufacture of fresh-water pearl button blanks. The statistics for the 52 establishments reporting these products exclusively in 1900 are included in Tables 1 and 3, but in view of the great interest taken in the development of this

branch, Table 4 is given, showing the statistics, by states, of establishments, number of salaried officials, clerks, etc., and their salaries, average number of wage-earners and their wages, miscellaneous expenses, cost of materials used, and value of products.

TABLE 4.—SUMMARY: ESTABLISHMENTS MANUFACTURING FRESH-WATER PEARL BUTTON BLANKS, BY STATES: 1900.

STATES.	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 .....	52	\$158,373	36	\$16,124	771	\$304,984	\$12,044	\$161,038	\$656,036
Illinois.....	7	16,893	9	4,924	138	53,052	1,009	25,824	134,104
Iowa.....	35	102,135	20	9,365	561	227,937	9,521	114,478	467,351
Missouri.....	5	14,390	1	300	35	11,340	1,016	8,529	23,090
All other states <sup>1</sup> .....	5	24,955	6	1,535	37	12,655	498	12,207	31,491

<sup>1</sup> Includes establishments distributed as follows: Arkansas, 1; Minnesota, 1; Wisconsin, 3.

Table 4 shows a total of 52 establishments, with a capital of \$158,373, 771 wage-earners, and products valued at \$656,036. Iowa led with 35 establishments, and products valued at \$467,351, or 71.2 per cent of the total. Illinois ranked next with 7 establishments, and products valued at \$134,104, or 20.4 per cent of the total.

Table 5 is a comparative summary of capital for 1900 and 1890, with the percentage each item was of the total, and the per cent of increase for the decade.

TABLE 5.—COMPARATIVE SUMMARY: CAPITAL, 1890 AND 1900, WITH PER CENT OF INCREASE.

	1900		1890		Per cent of increase.
	Amount.	Per cent of total.	Amount.	Per cent of total.	
Total.....	\$4,212,568	100.0	\$3,089,265	100.0	36.4
Land.....	145,200	3.4	98,664	3.2	47.2
Buildings.....	433,268	10.3	208,185	6.7	108.1
Machinery, tools, and implements.....	1,310,442	31.1	956,094	31.0	37.1
Cash and sundries.....	2,323,598	55.2	1,826,322	59.1	27.2

Table 5 shows that the percentages of land, buildings, machinery, and live capital in 1900 did not differ materially from the corresponding percentages in 1890, although the rates of increase in the different items varied considerably, being largest for buildings. The total capital increased from \$3,089,265 to \$4,212,568, or 36.4 per cent. The value of land increased from \$98,664 to \$145,260, or 47.2 per cent; of buildings from \$208,185 to \$433,268, or 108.1 per cent; of machinery, tools, and implements from \$956,094 to \$1,310,442, or 37.1 per cent; and the live capital from \$1,826,322 to \$2,323,598, or 27.2 per cent.

The miscellaneous expenses increased from \$256,846 in 1890 to \$393,862 in 1900, or 53.3 per cent. Of this, \$207,107, paid for rent of offices, insurance, repairs of buildings and machinery, advertising, and all other sun-

dries not reported under the head of materials, constituted the principal item, or 52.6 per cent. This amount did not include expense of new equipment, machinery, and other apparatus, but only the amount expended for repair of buildings, machinery, and other incidental expenses. The amount of interest in this item did not include the interest paid on bonds by incorporated companies, but only the comparatively insignificant sums necessary for money or credit incidental to the conduct of the business. The amount expended for contract work, \$88,040, formed 22.4 per cent and the \$84,279 expended for rent of works 21.4 per cent of the total. The amount paid for taxes, \$14,436, was a relatively small per cent.

Table 6 gives the cost of the different materials used in 1900, with the per cent each item was of the total.

TABLE 6.—COST OF MATERIALS: 1900.

	1900	
	Amount.	Per cent of total.
Total.....	\$2,803,246	100.0
Purchased in raw state.....	1,232,938	44.0
Purchased in partially manufactured form.....	1,437,982	51.3
Fuel.....	46,665	1.6
Rent of power and heat.....	33,375	1.2
Freight.....	52,286	1.9

The total cost of materials used in 1890 was \$1,551,603, and in 1900, \$2,803,246, an increase of 80.7 per cent, of which \$1,232,938, or 44 per cent, was expended for raw materials. The three principal items that went to make up this total were mother-of-pearl shells, fresh-water mussel shells, and vegetable ivory. The quantity of mother-of-pearl (ocean pearl) shells used was 1,748,856 pounds, costing \$620,584; of fresh-water mussel shells, 4,830,112 pounds, costing \$238,046; and of vegetable ivory, 12,382,720 pounds, costing \$275,226. The average cost per pound of mother-of-pearl shells was 35.5 cents; of fresh-water shells, 4.9

cents; and of vegetable ivory, 2.2 cents. Vegetable ivory and mother-of-pearl shells are imported, and statistics for the year ending June 30, 1900, show importations of 16,036,389 pounds of vegetable ivory, valued at \$243,548, and shells to the value of \$1,016,728.

The value of materials purchased in partially manufactured form was \$1,437,982, or 51.3 per cent of the total reported. Among the partly manufactured materials are brass, tin, iron, horn, bone, cloth, and linen hanks and tufts. The fuel, rent of power and heat, and freight constituted 4.7 per cent of the total cost of materials.

In connection with Table 6 attention is directed to a duplication which occurs in the two principal items of materials. The establishments employed in cutting button blanks from mussel shells used a large proportion of the fresh-water shells included under raw material, while of their products, amounting to \$656,036, not less than \$561,985 reappeared as purchased in partially manufactured form by other factories. The remaining \$94,051 of blanks were not made into buttons during the census year.

Table 7 gives the quantity and value of the different varieties of buttons manufactured, with the percentage that each variety is of the total, and the average prices.

TABLE 7.—NUMBER OF GROSS, VALUE, PER CENT OF VALUE OF DIFFERENT KINDS OF TOTAL VALUE, AND AVERAGE PRICE PER GROSS: 1900.

KINDS.	QUANTITY.		VALUE.		Average price per gross.
	Gross.	Per cent of total.	Amount.	Per cent of total.	
Total.....	21,254,018	100.0	\$6,467,378	100.0	\$0.30
Bone.....	297,180	1.4	137,401	2.1	0.46
Cloth.....	1,672,870	6.5	408,121	7.2	0.34
Composition.....	2,407,819	11.3	246,410	3.8	0.10
Horn.....	717,047	3.4	237,874	3.7	0.33
Metal:					
Total.....	4,759,871	22.4	887,521	13.7	0.19
Brass.....	3,718,144	17.5	739,922	11.4	0.20
All other metals.....	1,041,727	4.9	147,599	2.3	0.14
Pearl, fresh-water.....	4,308,584	20.3	1,176,285	18.2	0.27
Pearl, ocean.....	4,049,452	19.0	1,951,558	30.2	0.48
Vegetable ivory.....	2,661,823	12.5	1,144,677	17.7	0.43
Wood.....	78,200	0.4	9,600	0.2	0.12
Celluloid and photo.....	105,088	0.5	77,570	1.2	0.74
Paper and all other.....	496,736	2.3	130,356	2.0	0.26

To obtain the aggregate value of all products for the button industry, there should be added to the value of buttons given in Table 7 the value of button blanks and of all other products. During the census year 5,432,246 gross of fresh-water pearl button blanks were manufactured, valued at \$656,036, making the value of buttons and button blanks \$7,123,409, or 92.6 per cent of the aggregate; the value of all other products amounted to \$572,501, or 7.4 per cent. The fresh-water blanks constituted 8.5 per cent of the aggregate. A total of 21,254,018 gross of buttons was manufactured, giving an average value of 30.4 cents per gross.

Ocean pearl buttons outclassed all others, constituting 30.2 per cent of the total value. Fresh-water pearl buttons stood next with 18.2 per cent, while the vegetable ivory buttons ranked third with a percentage of 17.7. Metal buttons of all kinds formed 13.7 per cent of the total, brass buttons alone constituting 11.4 per cent. Covered or cloth buttons comprised 7.2 per cent of the total value. Composition and horn buttons were nearly equal in importance, forming, respectively, 3.8 and 3.7 per cent of the total value. Last on the list came buttons made from wood, constituting only two-tenths of 1 per cent of the total value. While the price for each kind of buttons varies considerably according to quality and size, it is interesting to note the average price for the different kinds.

To the totals in Table 7 should be added 105,500 gross of buttons, valued at \$42,790, obtained from two establishments reporting buttons as a by-product. Of these 72,500 gross were horn, 3,000 metal, and 30,000 rubber buttons. There are, no doubt, a number of manufactories producing buttons as a by-product, but as they have not specified buttons separately, but have included them in "all other products," it is impossible to give any figures for them.

The growth of the button industry, by geographical divisions, is shown in Tables 8 and 9.

Table 8 shows, by states, the number of establishments and value of products in 1850, 1860, 1870, and 1880. Five states practically monopolized the industry in those years, only an insignificant percentage of product being reported from "all other states."

TABLE 8.—COMPARATIVE SUMMARY: NUMBER OF ESTABLISHMENTS AND VALUE OF PRODUCTS, BY STATES, 1850 TO 1880, INCLUSIVE.

STATES.	1880		1870		1860		1850	
	Number of establishments.	Value of products.						
United States.....	124	\$4,449,542	64	\$1,778,898	43	\$949,408	59	\$964,859
Connecticut.....	26	1,110,653	21	563,433	28	547,482	29	562,274
Massachusetts.....	28	1,085,864	9	511,175	9	275,700	14	234,925
New Jersey.....	25	797,205	8	190,885	.....	.....	8	22,892
New York.....	18	916,262	7	141,500	5	120,666	7	64,600
Pennsylvania.....	18	387,554	18	369,200	1	5,560	3	23,128
All other states.....	19	152,004	21	2,700	.....	.....	3	6,640

<sup>1</sup> Includes establishments distributed as follows: Illinois, 3; Kentucky, 1; Minnesota, 1; Rhode Island, 1; Tennessee, 1; Vermont, 2.

<sup>2</sup> Missouri.

<sup>3</sup> Includes establishments distributed as follows: Maryland, 1; Ohio, 1; Vermont, 1.

Table 9 presents a comparison between the number of establishments, capital, and value of products for 1890 and 1900, by states, arranged geographically; also the percentage of total and of increase of each item.

TABLE 9.—COMPARATIVE SUMMARY: NUMBER OF ESTABLISHMENTS, CAPITAL, AND VALUE OF PRODUCTS, BY STATES, ARRANGED GEOGRAPHICALLY, WITH PERCENTAGES, 1890 AND 1900.

STATES.	1900							1890							PER CENT OF INCREASE IN—		
	Establishments.		Capital.		Products.			Establishments.		Capital.		Products.			Number of establishments.	Capital.	Value of products.
	Number.	Per cent of total.	Amount.	Per cent of total.	Number of gross. <sup>1</sup>	Value.	Per cent of total value.	Number.	Per cent of total.	Amount.	Per cent of total.	Value.	Per cent of total value.				
United States .....	238	100.0	\$4,212,568	100.0	26,686,264	\$7,695,910	100.0	106	100.0	\$3,089,265	100.0	\$4,216,795	100.0	124.5	36.4	82.5	
New England states.....	28	11.8	1,377,222	32.7	7,273,370	1,902,527	24.7	34	32.1	1,761,254	57.0	2,181,572	50.6	217.6	221.8	210.7	
Massachusetts.....	13	5.5	626,439	14.9	2,127,345	681,081	8.9	16	15.1	779,135	25.2	1,071,687	25.4	218.8	219.6	266.4	
Connecticut.....	11	4.6	532,178	12.6	4,668,359	1,087,235	14.1	14	13.2	914,796	29.6	928,028	22.0	221.4	241.8	17.2	
All others <sup>2</sup> .....	4	1.7	218,605	5.2	477,666	134,211	1.7	44	3.8	67,823	2.2	131,857	3.2	.....	224.7	1.8	
Middle states .....	104	43.7	2,262,512	53.7	11,898,171	4,396,095	57.1	65	61.3	1,244,126	40.3	1,996,013	47.3	60.0	81.9	120.2	
New York.....	49	20.6	1,195,343	28.4	6,779,472	2,371,196	30.8	34	32.1	653,215	21.1	1,012,694	24.0	44.1	83.0	134.2	
New Jersey.....	34	14.3	509,681	12.1	2,155,025	1,025,544	13.3	17	16.0	295,555	9.6	596,600	14.1	100.0	72.4	71.9	
Pennsylvania.....	21	8.8	557,488	13.2	2,963,664	999,355	13.0	14	13.2	295,358	9.6	336,719	9.2	50.0	88.8	138.4	
Central states.....	95	39.9	511,397	12.1	7,233,893	1,326,388	17.3	4	3.8	42,725	1.4	46,860	1.1	2,275.0	1,097.0	2,731.6	
Ohio.....	4	1.7	49,645	1.2	128,372	58,373	0.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Illinois.....	14	5.9	53,493	1.3	851,098	242,444	3.2	4	3.8	42,725	1.4	46,860	1.1	250.0	25.2	417.4	
Wisconsin.....	9	3.8	34,499	0.8	366,556	63,125	0.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Iowa.....	53	22.2	324,315	7.7	5,413,130	866,538	11.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Missouri.....	11	4.6	39,495	0.9	440,360	85,449	1.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	
All others <sup>3</sup> .....	4	1.7	9,950	0.2	34,377	10,459	0.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	
All other states <sup>4</sup> .....	11	4.6	61,437	1.5	280,830	70,400	0.9	73	2.8	41,160	1.3	42,350	1.0	266.7	49.3	66.2	

<sup>1</sup> Includes 5,432,246 gross of fresh-water pearl button blanks.  
<sup>2</sup> Decrease.

<sup>3</sup> Includes establishments distributed as follows: New Hampshire, 1; Rhode Island, 3.

<sup>4</sup> Includes establishments distributed as follows: Rhode Island, 4.

<sup>5</sup> Includes establishments distributed as follows: Michigan, 2; Minnesota, 2.

<sup>6</sup> Includes establishments distributed as follows: Arkansas, 1; California, 5; Kentucky, 1; Maryland, 2; Nebraska, 2.

<sup>7</sup> Includes establishments distributed as follows: District of Columbia, 1; Kentucky, 1; Maryland, 1.

From the beginning of button manufacture in this country down to 1890, almost the entire industry was carried on in the New England and Middle states. The census of 1810 was the first at which the manufacture was shown, and then only 3 states reported products: Connecticut, 155,000 gross, value \$102,125; Pennsylvania, 11,608 gross, value \$3,494; and Virginia, \$300; the total value of products for the industry being \$105,919. At the census of 1890 the New England and Middle states reported 93.4 per cent of the establishments, 97.3 per cent of the capital, and 97.9 per cent of the products.

The statistics for 1900 show a great change. The Central states, which in 1890 were credited with 4 establishments, or 3.8 per cent of the aggregate, reported 95, or 39.9 per cent. The capital invested in this group increased from \$42,725, or 1.4 per cent of the aggregate, to \$511,397, or 12.1 per cent, and the value of products increased from \$46,860, or 1.1 per cent of the aggregate, to \$1,326,388, or 17.3 per cent. In 1890 Illinois was the only state in this group reporting the manufacture of buttons; 4 establishments there having products valued at \$46,860. In 1900 the state had 14 establishments and products valued at \$242,444. Iowa contributed 53 new plants, with products valued at \$866,538, or 65.3 per cent of the total for the division. Thus, as to number of establishments, Iowa has taken the first place among all the states. The states of Ohio, Wisconsin, Michigan, Minnesota, Missouri, and Nebraska also engaged in the manufacture for the first time.

The number of establishments in the New England and Middle states increased from 99 in 1890 to 132 in 1900, or 33.3 per cent, but the percentage which they formed of the total number of establishments in the United States decreased from 93.4 in 1890 to 55.5 in 1900. The decrease in the proportion of the capital was not so marked. In 1890 the total capital for these two groups was \$3,005,380, or 97.3 per cent of the aggregate; in 1900 it was \$3,639,734, or 86.4 per cent of the aggregate, an increase of 21.1 per cent. In 1890 the value of products was \$4,127,585, or 97.9 per cent of the aggregate; in 1900 it was \$6,293,622, showing an increase of 52.6 per cent, although forming only 81.8 per cent of the aggregate value.

The growth of the industry outside of the New England and Middle states was chiefly in the manufacture of fresh-water pearl buttons and blanks—a branch of the industry, which, as already pointed out, requires a relatively small amount of capital per establishment. This explains why there was a greater reduction in the percentage of establishments reported for the New England and Middle states than in that of capital and products.

In 1900 New York held the first place in value of products, having displaced Massachusetts, which was first in 1890; Connecticut held the second place, New Jersey the third, Pennsylvania the fourth, Iowa the fifth, and Massachusetts the sixth. The number of establishments in New York increased from 7 in 1850 to 49 in 1900; and the value of products from \$64,600 to \$2,371,196.

## MANUFACTURES.

The number of establishments in "all other states" was 3 in 1890, or 2.8 per cent of the aggregate; their capital was \$41,160, or 1.3 per cent of the aggregate; and the value of their products amounted to \$42,350, or 1 per cent of the aggregate. While the number of establishments reported at the census of 1900 was 11, an increase of 266.7 per cent, the capital had increased only 49.3 per cent, being 1.5 per cent of the aggregate, and the value of products increased only 66.2 per cent, forming nine-tenths of 1 per cent of the aggregate.

The New England states produced in 1900, 7,273,370 gross, or 27.3 per cent of the aggregate; the Middle states 11,898,171 gross, or 44.6 per cent; the Central states 7,233,893 gross, or 27.1 per cent; while all other divisions produced only 280,830 gross, or 1 per cent.

The centers of the different branches of the industry are located as follows:

- Bone buttons, Pennsylvania.
- Brass buttons, Connecticut, New York.
- Cloth buttons, Massachusetts.
- Composition buttons, Pennsylvania, New York.
- Fresh-water pearl button blanks, Iowa, Illinois.
- Fresh-water pearl buttons, New York, Iowa, Pennsylvania.
- Horn buttons, Connecticut.
- Ocean-pearl buttons, New York, New Jersey, Pennsylvania.
- Paper buttons, New Hampshire.
- Tin buttons, New Jersey.
- Vegetable ivory buttons, New York, Massachusetts, New Jersey.

Table 10 presents the kinds and value of buttons and button forms imported, 1891 to 1900, inclusive.

TABLE 10.—BUTTONS AND BUTTON FORMS, VALUE OF IMPORTS FOR CONSUMPTION, 1891 TO 1900, INCLUSIVE.<sup>1</sup>

KINDS.	1900	1899	1898	1897	1896	1895	1894	1893	1892	1891
Total.....	\$600,982	\$450,953	\$426,125	\$953,235	\$1,393,224	\$1,084,836	\$480,905	\$1,393,046	\$1,346,247	\$2,176,046
Agate buttons.....	103,745	81,162	53,736	229,083	240,410	195,737	130,133	191,538	161,848	322,003
Bone buttons.....	12,460	4,256	2,001	( <sup>2</sup> )						
Collar and cuff buttons and studs.....	156,576	131,031	113,896	( <sup>2</sup> )						
Glass buttons.....	27,937	39,701	6,725	31,221	132,553	66,463	8,843	51,022	104,676	( <sup>2</sup> )
Horn and vegetable ivory buttons.....	71,462	30,158	103,153	\$259,599	\$293,041	\$267,456	\$156,311	\$471,075	\$407,472	\$175,343
Metal buttons, not specially provided for.....	58,189	64,548	29,738	110,428	295,293	79,749	41,998	195,696	133,728	( <sup>2</sup> )
Nickel bar buttons.....	1,044	821	400	( <sup>2</sup> )						
Pearl or shell buttons.....	36,262	24,239	36,557	259,278	332,210	375,886	38,284	275,216	292,332	100,001
Shoe buttons of paper, board, etc.....	425	549	2,004	3,333	12,285	12,914	2,552	7,703	12,100	6,811
Silk buttons.....	805	1,140	1,371	( <sup>2</sup> )	1,820	1,097	480	1,762	8,731	17,539
Trousers buttons:										
Steel.....	182	329	1,477	( <sup>2</sup> )						
Other metal.....	530	925	1,903	( <sup>2</sup> )						
Other buttons, not specially provided for.....	18,426	7,913	6,677	( <sup>2</sup> )						
Button forms, lastings, mohair cloth, silk, or other manufactures of cloth, made or cut in such manner as to be fit for buttons exclusively.....	112,959	64,181	67,487	55,293	85,612	85,534	52,299	199,034	225,360	599,848
Not specially provided for, not including brass, gilt, or silk buttons.....	( <sup>2</sup> )	954,181								

<sup>1</sup>Commerce and Navigation of the United States, United States Treasury Department.

<sup>2</sup>Not reported separately.

<sup>3</sup>Includes values of bone buttons.

These imports were not classified until 1891. While the imports fell from \$3,899,132 in 1886 to \$3,155,500 in 1890, or only 19.1 per cent, the decrease from 1890 to 1900 was from \$3,155,500 to \$600,982, or 81 per cent. In 1886 and 1890 brass and gilt buttons were included under the manufactures of brass, and could not be separated. As they were included in the total for 1900, the decrease was in reality still larger than the above figures indicate.

The classification of button imports for 1891 was incomplete. The very large amount of "all other kinds" included metal, glass, and probably some pearl buttons, the value given under the separate heading "pearl buttons" being abnormally low. The importations of pearl buttons, which previous to 1891 constituted the largest part of the imports, had almost ceased in 1900. In this connection extracts from three reports of the United States consuls-general at Vienna, Austria, are interesting.

On December 30, 1887, Consul-General Jussen reported as follows: "The manufacture of pearl buttons is not an industry of the United States, and probably never will be. The reason why this industry can not thrive in the United States is quite obvious. Pearl

buttons can not be manufactured by machinery, but, owing to the brittle nature of the raw material, they must of necessity be made by hand. As this hand labor is performed at the low rate of from \$2 to \$2.80 per week, the competition of the American laborer is out of the question. The declared value of pearl buttons exported from Austria to the United States during the year 1886 amounted to \$1,681,747." On December 31, 1889, Consul-General Goldschmidt reported the exports of pearl buttons from Austria to the United States as follows: 1884, \$1,496,000; 1887, \$1,612,000; 1888, \$1,558,000; and 1889, \$1,352,000. Two years later, in 1891, the total importation of pearl buttons into the United States had fallen to \$100,001. In 1895 it was \$375,886, but in 1900 it amounted to only \$36,262. On April 29, 1898, Consul-General Hurst reported as follows: "The pearl button industry of Austria-Hungary, which in former years occupied a prominent place among the flourishing industries of the monarchy, has dwindled of late to such an insignificant figure that pearl buttons can no longer be regarded as one of the principal articles of export to the United States. This may be attributed to the development of the industry in the United States."

The principal kinds of buttons imported are agate

buttons, which are not manufactured in the United States: the higher grades of collar and cuff buttons; ivory buttons; and button coverings, including linen hanks and tufts. The importation of this last class decreased from \$599,848 in 1891 to \$112,959 in 1900, or 81.2 per cent. The importation of silk buttons had practically ceased. In 1886 it amounted to \$55,583, and in 1900 to \$805, or a decrease of 98.6 per cent.

Previous to 1890 there were no exports of buttons from the United States, but during the last few years considerable quantities have been sent abroad. The value of these exports can not be given, as they are not classified as buttons in the Treasury Department's schedule, but according to the material, or, in many instances, as "notions."

#### HISTORICAL AND DESCRIPTIVE.

The button, which to-day is one of the indispensable parts of civilized wearing apparel, is an article of comparatively modern invention. Its earliest appearance, in its modern application, is found in the time of Edward I. As a trade of any importance the making of buttons dates back no further than the reign of Elizabeth, when, in connection with the newly invented buttonhole, buttons were often used as a means of holding garments together. These buttons were wholly a product of needlework, with the exception of the wooden mold. A manufactory for the making of brass buttons was established at Birmingham, England, in 1689, and that city soon became the center of the industry, remaining so to this day. From that time buttons have been divided into three general classes: shank buttons, hole buttons, and covered buttons. As late as the beginning of the Nineteenth century covered buttons were made by hand by covering a wooden mold or form with the desired materials. This mode of manufacture was revolutionized by B. Sanders, a Dane, who emigrated to Birmingham after having lost all his property by the bombardment of Copenhagen in 1807. Mr. Sanders conceived the idea of making the button in two parts. Two disks or molds were made of sheet brass or tin. The upper disk, after having its edge turned up, was covered with cloth. The under disk, which was smaller than the upper and convex in shape, had a wire shank put inside. The material which was to keep this shank in place was inserted, and the two disks were pressed together, the turned edges interlocking, making a perfect button. A son of Mr. Sanders made the seemingly trivial, but, for practical purposes, very important improvement of substituting a canvas or cloth tuft for the metal shank. Though many improvements have been made in the process of manufacturing covered buttons, the principle of Mr. Sanders' invention has not been superseded.

It is stated that Casper Wistar manufactured brass buttons in Philadelphia prior to 1750.<sup>1</sup> This is the earliest mention of button manufacture in the United

States. Soon after that Henry Witeman set up the manufacture of metal buttons near the Fly Market in New York.<sup>1</sup> Another pioneer was Benjamin Randolph, at the Golden Eagle, on Chestnut street, Philadelphia, who, toward the end of the Eighteenth century, manufactured wooden buttons "of apple, holly, and laurel wood, hard and clear," but as late as 1797 there were only two button factories in Philadelphia.<sup>2</sup> The soldiers of the Revolution wore metal buttons of prescribed patterns, but these were imported from France.

The first button factory in Waterbury, Conn.,—now the center of the metal-button industry—of which there is any record, was established just before 1800 by Henry, Samuel, and Silas Grilley.<sup>3</sup> Their buttons were made of block tin or pewter and cast iron molds. About 1800 great improvements were made in Europe in the making and attaching of shanks or eyes to metal buttons, and in 1802 the firm of Abel Porter & Co. was organized for the manufacture of metal buttons in Waterbury. It took this concern eighteen months to get started, and when ready for business it employed 13 men, of whom 4 were members of the firm. The copper was obtained by the purchase of old stills, teakettles, etc., which were cast into ingots and taken to an iron mill in Bradleyville to be rolled into sheets. These were afterwards finished at the button factory on a pair of rolls 2 inches wide, driven by horsepower. The capital of this concern had been exhausted during the long period of experiments, and the establishment soon changed hands. Little progress was made until 1820, when an Englishman, James Croft, who had a thorough knowledge of the business, was employed, and thereafter the development of the metal-button industry was comparatively rapid.

Metal buttons, whether oval or flat, are made from rolled brass plate. Originally the flat buttons were solid and struck out as blanks from a thick plate; the shank was soldered on afterwards, and the whole was then finished by gilding or silvering. Later, when Mr. Sanders' principle was applied in making metal buttons, the upper blank was driven by a heavy pressure into a die of hardened steel, which gave it the desired shape and pattern. The under blank was similarly pressed in another die, which also riveted the shank into the plate. The two dies were then pressed together and the button was complete except the finishing, which process was accomplished by electroplating.

The manufacture of covered buttons by machinery had not been attempted in the United States until about 1827. Samuel Williston was the founder of the industry. In his home at Easthampton, Mass., he and his wife commenced covering buttons by hand. By the gradual introduction of machinery the business grew, until about 1834 he associated with himself Joel and Josiah Hayden, of Haydenville, with the object of improving the machines. At first they met with failure, but later on, with the

<sup>1</sup>History of American Manufactures, by J. L. Bishop, Part I, page 574.

<sup>2</sup>History of American Manufactures, by J. L. Bishop, Part I, page 575.

<sup>3</sup>Ibid., Part III, page 360.

assistance of Francis Sidney, who had worked in button factories in England, they succeeded in producing fairly good machinery. Inventors have been constantly introducing labor- and time-saving machinery, and to-day the greater part of the work is done automatically. At the present time nearly all the lastings and other parts used to cover the buttons are manufactured in the United States, but before 1892 they were imported from Europe.

Aaron Benedict started to manufacture ivory and horn buttons in Waterbury, Conn., about 1812. The raw material of the horn button is generally the hoofs of cattle. The hoofs are boiled in large kettles, which process softens them; then they are cut by machines into pieces, which other machines form into buttons. These go under a hydraulic press, which stamps the desired patterns upon them. Still different machines are used for boring holes and for polishing.

The vegetable ivory button industry was introduced into the United States in 1859, when A. W. Critchlow, an Englishman, started a factory at Leeds, Mass. The raw material is the seed of the fruit of *Phytelephas Macrocarpa*, a low-growing palm of South America; the principal shipping point for which is Colon, Colombia. The seed is commonly known as the ivory nut, and is about the size of a hen's egg. The albumen is close-grained and very hard, resembling the finest ivory in texture and color. These nuts are either cut in halves, from which the buttons are sawed out, or sawed in small blocks, from which the larger buttons are formed. The vegetable ivory is especially adapted to the application of colors. The methods of manufacture of the vegetable ivory buttons have changed very little since the time of its introduction here, but great progress has been made in the dyeing of the buttons in various colors and patterns, and also in the finish, and to-day the products of the home factories rival the European product. This branch of the industry ranks third.

In 1862 attempts were made in Newark, N. J., to manufacture composition buttons, but owing to mechanical difficulties which seemed insurmountable, the enterprise was soon abandoned. Twelve years later an attempt was made in New York City to start this industry, but, though more successful than the preceding ones, it had to be abandoned after one year. In 1875, however, Isaac Smith, of New York, associated himself with the Dickinson Hard Rubber Company, of Springfield, Mass., and this concern solved the mechanical difficulties and made the manufacture of composition buttons a success. These buttons, which closely resemble those manufactured from vegetable ivory, are made of plastic material, i. e., a mass which softens under the influence of heat and becomes hard when cold. The ingredients used are certain fossil and vegetable gums, combined with finely comminuted carbonate of lime, feldspar, mica, or kindred minerals. These ingredients are thoroughly mixed in steam-heated grinders. When the minerals are properly amalgamated with the gums, the mass is run off in sheets and allowed to cool. Later

these sheets are placed on hot platens, contact with which softens them, and facilitates cutting into strips of convenient form for placing in the dies.

Soon after 1875 a tremendous impetus was given to this branch of the button industry by the fashion, then coming into vogue, of trimming ladies' garments lavishly with buttons, not merely for fastening purposes but also for ornamentation. Such was the demand of the trade that the manufacturers were unable to supply it. This demand stimulated inventive genius, and several epoch-making inventions followed. Among these were the use of templates in making dies, invented by Charles R. Wickes and patented by him in 1877, and the pin plate to mold buttons with holes, invented by Mr. Wickes and Philip L. Sylvester and patented by them in 1878. Previous to this time all holes had to be bored by hand after the button had been molded. In 1880 hydraulic presses were introduced, and in 1882 one of the most progressive steps in the making of composition buttons was taken when the automatic button machine was invented by Mr. Sylvester. By the use of this machine the possible production of buttons was largely increased. The method of mixing and preparing the plastic material was greatly improved by another invention of Mr. Sylvester, as described in letters patent issued March, 1900. There are only 5 factories in the United States producing composition buttons, but 2 of them, located in Pennsylvania and New York, are among the largest in the world.

A peculiar branch of the button industry in the United States is the manufacture of campaign and society buttons, mostly from celluloid. Another kind which has been manufactured in large quantities during the last few years is the photo button. Buttons are also made from potatoes, and can not be distinguished from horn, ivory, and bone buttons save by a careful examination.<sup>1</sup> It is not commonly known that if the common Irish potato be treated with certain acids it becomes almost as hard as stone. A few years ago there was a factory in Brooklyn, N. Y., at which buttons, etc., were made from potatoes, but there is no record of its present existence. Buttons made from skim milk—casein—were introduced in London some years ago, and small quantities have been made in the United States. Buttons made from blood have also been on the market, and during the last decade buttons were made in Massachusetts from *Lamaniaria*, a brown seaweed. From the establishment of the United States Patent Office until the year 1900, 348 patents were granted for button machines and 1,355 for the making of buttons.

The most important branch of the button industry of to-day in the United States is the manufacture of pearl buttons. It embraces buttons made from mother-of-pearl and from the shells of the Unios, which are so abundant in the Mississippi River. In value the production of these varieties of buttons in 1900 formed 48.4 per cent of the product reported for the entire button industry (Table 7.) The making of buttons from

<sup>1</sup> Cole's Dictionary of Dry Goods.

mother-of-pearl was introduced into the United States on a small scale about 1855. At that time, and for many years thereafter, the shells were brought from China, but now the markets of the world are supplied principally from South Australia and from the South Sea Islands. The technical name for buttons made of mother-of-pearl is "ocean pearl," while those made from the shell of the *Unio* are called "fresh-water pearl" buttons. The higher grades of pearl buttons are still manufactured from the ocean shell, and the production of these far outranked that of all other kinds, constituting 30.2 per cent of the total value of buttons manufactured in the United States.

In 1890 there was not a single fresh-water pearl button made in the United States. In 1900 the making of these buttons constituted the second most important branch of the button industry. In Europe shells of the mussels found in rivers have been utilized for button making for the last fifty years. To Mr. J. F. Boepple, of Muscatine, Iowa, belongs the credit of having started the industry in the United States, and now it is the source of income for thousands of persons. In 1891 Mr. Boepple, who is a native of Hamburg, Germany, where he learned the trade of making pearl buttons, formed a partnership for the manufacture of buttons from the "*Unio*," or "niggerhead" shells, as they are called locally, which were banked up for miles along the river in front of Muscatine. After experimenting for some time this concern found the business unprofitable and it was dissolved. Nothing daunted, Mr. Boepple continued making the buttons, on a small scale, at his home. He finally organized a company which, by the process of manufacture and machinery utilized in Austria and Germany, succeeded in making the enterprise a success. The tools needed in the manufacture of shell buttons were of the simplest character, consisting, for the most part, of turning lathes worked by steam or foot power; consequently it was not long before the Mississippi River was lined with button factories all the way from Red Wing, Minn., to Louisiana, Mo. Muscatine, Iowa, became the center of this new industry. A few years ago there were more than 40 factories in that city for the cutting of blanks and for the making of buttons, but the tendency toward concentration has made itself felt, as has also the need of improved machinery and large capital to withstand the tremendous competition, and all along the river the smaller concerns are being eliminated. The difference in price between the ocean shells and the *Unios* has been an important factor in the development of the fresh-water button industry. A few years ago the mussel shells were delivered at the factories at about 50 to 60 cents per 100 pounds, while at the same time ocean shells were worth from \$30 to \$60 for the same quantity. In February, 1898, prices went up to \$18 to \$20 per ton for "niggerheads," but in July of the same year they were cheaper than ever before or since, selling at 30 cents per 100 pounds. The cheapest grade of ocean

shells are the Panama, which sell at 10½ cents per pound.

The improvements in machinery in recent years have been so rapid that some manufacturers have exchanged their machines three times in three years, each time practically reequipping the entire plants.

The following is a short résumé of the mode of making pearl buttons: After the mussels have been cooked and the meat removed, the shells are taken to the factories and stored in sheds. They are then sorted into three different sizes and soaked in barrels of water from three to six days to render them less brittle. They must be used while wet, otherwise they crumble under the saw. The next step is the cutting or sawing of the rough blanks. The shells are usually held with pliers while being cut, but some sawers hold them in their hands. The saws are hollow, cylindrical pieces of steel, 2 inches wide, and with a diameter corresponding to the size of the button. At one end these cylinders are provided with fine teeth; they are adjusted to lathes in which they revolve. As the sawer holds the shell against the saw, the blanks are cut out and passed back into the saw and saw holder and drop into a receiver. The next step is the dressing or grinding of the back of the blank to remove the skin and make an even surface. To accomplish this, each blank has to be held with the finger against a revolving emery wheel. Then comes the turning, by which the front of the button is given its form, including the central depression. When the holes are drilled the button is complete, with the exception of the polishing process, which brings out the natural luster which was lost in the grinding. It is this luster which gives the buttons their chief value. The polishing is effected by placing the buttons in bulk in large wooden tumblers or kegs, in which they are subjected to the action of a chemical fluid as the tumblers revolve. By mutual contact, combined with the effect of the fluid, the buttons become highly lustrous. Then they are washed, dried, and sorted into sizes and grades of quality. After being sewed on cards and packed in pasteboard boxes, the buttons are ready for the market.

The majority of the factories in the West do not finish the buttons, but merely cut the blanks. These are then sent to the factories in the East, which are supplied with improved machinery for the finishing of the buttons. Some of these Eastern factories formerly made buttons out of imported mother-of-pearl shells, but now their principal work is the finishing of the home product.

Notwithstanding the enormous progress this branch of the industry has made during the last five years, it is yet in its infancy. The only disquieting circumstance is the injudicious and wanton depredation of the shell deposits. The beds in front of Muscatine, Iowa, are already exhausted, and unless something is done to protect the mussels, it will not be long before the raw material for this industry will be exhausted.

Table 11 shows in detail the statistics relating to the manufacture of buttons as returned in 1900.

TABLE 11.—BUTTONS,

	United States.	California.	Connecticut.	Illinois.
1 Number of establishments .....	238	5	11	14
2 Character of organization:				
3 Individual .....	116	5	6	10
4 Firm and limited partnership .....	70		1	2
4 Incorporated company .....	52		4	2
5 Capital:				
6 Total .....	\$4,212,568	\$6,487	\$592,178	\$58,498
7 Land .....	\$145,260		\$46,400	\$525
8 Buildings .....	\$493,268		\$96,000	\$1,460
9 Machinery, tools, and implements .....	\$1,810,442	\$725	\$164,728	\$14,271
10 Cash and sundries .....	\$2,828,598	\$5,762	\$225,050	\$87,247
11 Proprietors and firm members .....	267	6	10	15
12 Salaried officials, clerks, etc.:				
12 Total number .....	339	1	24	14
12 Total salaries .....	\$296,358	\$1,200	\$90,812	\$7,629
13 Officers of corporations—				
14 Number .....	51		4	
14 Salaries .....	\$76,966		\$9,000	
15 General superintendents, managers, clerks, etc.—				
16 Total number .....	288	1	20	14
16 Total salaries .....	\$219,392	\$1,200	\$21,812	\$7,629
17 Men—				
18 Number .....	235		16	13
18 Salaries .....	\$196,625		\$20,248	\$7,213
19 Women—				
20 Number .....	53	1	4	1
20 Salaries .....	\$22,767	\$1,200	\$1,564	\$416
21 Wage-earners, including pieceworkers, and total wages:				
22 Greatest number employed at any one time during the year .....	10,490	6	876	314
23 Least number employed at any one time during the year .....	7,708	6	665	264
24 Average number .....	8,685	6	800	272
24 Wages:				
25 Men, 16 years and over—				
26 Average number .....	4,086		305	210
26 Wages .....	\$1,753,133		\$169,763	\$86,174
27 Women, 16 years and over—				
28 Average number .....	4,131	2	460	48
28 Wages .....	\$997,857	\$836	\$132,018	\$11,302
29 Children, under 16 years—				
30 Average number .....	468	4	85	14
30 Wages .....	\$75,248	\$652	\$3,906	\$3,663
31 Average number of wage-earners, including pieceworkers, employed during each month:				
31 Men, 16 years and over—				
32 January .....	4,216		270	229
32 February .....	4,271		306	219
33 March .....	4,363		291	226
34 April .....	4,401		304	242
35 May .....	4,271		311	219
36 June .....	3,766		311	191
37 July .....	3,707		296	189
38 August .....	3,837		307	192
39 September .....	3,908		317	197
40 October .....	4,042		314	201
41 November .....	4,121		312	221
42 December .....	4,129		312	
43 Women, 16 years and over—				
44 January .....	4,071	2	388	51
44 February .....	4,136	2	408	51
45 March .....	4,299	2	448	51
46 April .....	4,330	2	469	51
47 May .....	4,196	2	457	47
48 June .....	4,068	2	475	47
49 July .....	3,880	2	426	47
50 August .....	3,950	2	448	47
51 September .....	4,068	2	455	47
52 October .....	4,207	2	487	47
53 November .....	4,259	2	432	47
54 December .....	4,108	2	472	47
55 Children, under 16 years—				
56 January .....	459	4	31	14
57 February .....	449	4	35	14
58 March .....	450	4	36	14
59 April .....	478	4	37	14
60 May .....	462	4	30	14
61 June .....	475	4	34	14
62 July .....	455	4	34	14
63 August .....	458	4	36	14
64 September .....	477	4	36	14
65 October .....	492	4	36	14
66 November .....	493	4	34	14
66 December .....	468	4	37	14
67 Miscellaneous expenses:				
68 Total .....	\$393,862	\$1,277	\$117,643	\$11,329
69 Rent of works .....	\$84,279	\$635	\$3,979	\$3,487
70 Taxes, not including internal revenue .....	\$14,436	\$50	\$3,681	\$95
71 Rent of office, interest, insurance, and all sundry expenses not hitherto included .....	\$207,107	\$592	\$37,751	\$7,747
72 Contract work .....	\$88,040		\$72,232	
73 Materials used:				
74 Total cost .....	\$2,808,246	\$2,795	\$430,187	\$66,213
75 Principal materials .....	\$2,386,696	\$2,567	\$287,404	\$80,824
76 Fuel .....	\$46,665	\$2	\$9,462	\$2,023
77 Rent of power and heat .....	\$3,375	\$48	\$1,898	\$530
78 Mill supplies .....	\$31,728	\$10	\$2,034	\$714
79 All other materials .....	\$252,496	\$138	\$120,709	\$1,350
80 Freight .....	\$52,286	\$30	\$8,630	\$772
81 Products:				
82 Aggregate value .....	\$7,695,910	\$8,870	\$1,087,235	\$242,444
83 Buttons—				
84 Total number of gross .....	21,254,018	23,570	4,668,359	220,165
84 Total value .....	\$6,467,373	\$7,250	\$860,808	\$101,640
85 Bone—				
86 Gross .....	297,130	2,500		
86 Value .....	\$137,401	\$500		
87 Cloth—				
88 Gross .....	1,372,870	20,000	232,141	57,700
88 Value .....	\$468,121	\$5,750	\$55,980	\$10,740

<sup>1</sup> Includes establishments distributed as follows: Arkansas, 1; Kentucky, 1; Maryland, 2; Michigan, 2; Minnesota, 2; Nebraska, 2; New Hampshire, 1.

BUTTONS.

BY STATES: 1900.

Iowa.	Massachusetts.	Missouri.	New Jersey.	New York.	Ohio.	Pennsylvania.	Rhode Island.	Wisconsin.	All other states. <sup>1</sup>	
58	13	11	34	49	4	21	3	9	11	1
21	6	5	20	24	1	8	2	4	4	2
21	3	4	11	12	2	9	3	3	2	3
11	4	2	8	18	1	4	1	2	5	4
\$324,815	\$626,439	\$39,495	\$509,681	\$1,195,343	\$49,645	\$557,488	\$29,116	\$34,499	\$254,389	5
\$15,685	\$33,800	\$600	\$6,250	\$13,100		\$24,500		\$1,300	\$3,100	6
\$24,991	\$105,300	\$3,150	\$34,672	\$46,900		\$47,580		\$4,595	\$68,630	7
\$111,727	\$122,669	\$12,188	\$154,086	\$395,107	\$15,500	\$200,062	\$20,500	\$12,539	\$86,400	8
\$171,912	\$364,670	\$23,557	\$314,723	\$740,236	\$34,145	\$285,356	\$8,616	\$16,065	\$96,250	9
61	12	15	48	48	6	30	2	9	11	10
42	19	4	53	105	7	42	4	4	20	11
\$26,306	\$31,164	\$1,236	\$50,299	\$33,195	\$4,786	\$39,152	\$2,464	\$1,425	\$16,690	12
5	4		8	13	1	7		3	6	13
\$5,120	\$13,900		\$13,025	\$14,216	\$2,500	\$11,760		\$1,325	\$6,120	14
87	15	4	45	92	6	35	4	1	14	15
\$21,186	\$17,264	\$1,236	\$37,274	\$68,979	\$2,286	\$27,392	\$2,464	\$100	\$10,570	16
33	9	1	42	77	5	25	2	1	11	17
\$20,288	\$15,200	\$300	\$36,213	\$62,547	\$1,870	\$22,332	\$1,564	\$100	\$8,750	18
4	6	3	3	15	1	10			3	19
\$898	\$2,064	\$936	\$1,061	\$6,432	\$416	\$5,060	\$900		\$1,820	20
1,392	871	148	1,363	3,184	109	1,278	62	150	242	21
1,308	679	118	956	2,292	68	1,074	19	106	157	22
1,402	772	83	1,169	2,647	72	1,140	28	106	188	23
\$458,086	\$276,202	\$23,881	\$410,056	\$312,978	\$18,268	\$321,473	\$3,501	\$32,108	\$56,971	24
387	302	58	551	1,157	29	347	19	74	147	25
\$361,062	\$141,049	\$19,133	\$258,119	\$464,512	\$10,504	\$166,892	\$5,780	\$26,058	\$44,101	26
441	443	21	544	1,349	40	711	9	26	37	27
\$36,550	\$131,929	\$4,220	\$135,610	\$325,130	\$7,140	\$141,601	\$2,771	\$5,880	\$12,370	28
74	27	4	74	141	3	82		6	4	29
\$10,474	\$3,224	\$528	\$16,327	\$22,830	\$624	\$12,980		\$140	\$500	30
1,016	296	76	507	1,185	31	355	16	89	146	31
988	292	80	535	1,214	31	357	25	90	184	32
1,005	295	96	550	1,224	31	371	34	85	155	33
969	300	97	555	1,281	31	356	22	85	159	34
890	293	87	550	1,248	34	355	17	90	172	35
749	291	40	549	1,052	27	336	11	67	142	36
797	303	21	531	1,024	27	325	11	44	134	37
801	296	21	523	1,118	27	334	21	50	135	38
800	304	36	530	1,105	27	338	16	61	131	39
841	313	46	531	1,146	28	338	16	71	143	40
898	313	51	575	1,159	28	348	13	74	147	41
919	319	51	556	1,129	28	348	20	76	150	42
442	456	24	518	1,402	35	693	6	24	35	43
342	457	27	562	1,384	38	744	10	25	31	44
420	446	27	564	1,401	47	812	18	26	37	45
427	463	23	573	1,419	53	763	21	27	39	46
463	446	21	498	1,414	65	684	8	26	35	47
432	443	24	537	1,314	35	688	3	27	36	48
450	457	9	504	1,206	35	681	4	24	35	49
458	434	9	518	1,232	35	704	11	23	34	50
454	443	13	540	1,298	36	633	7	27	33	51
471	423	18	571	1,387	34	694	8	28	37	52
479	426	27	582	1,399	34	703	9	27	42	53
452	413	31	556	1,335	34	633	7	28	48	54
73	24	4	76	139	2	82		6	4	55
67	25	4	77	127	2	84		6	4	56
72	26	4	73	126	2	83		6	4	57
71	23	4	76	154	2	80		6	3	58
71	26	4	66	139	6	83		6	4	59
76	23	3	68	150	4	84		6	4	60
76	30	3	73	125	4	82		6	4	61
76	26	3	74	131	2	83		6	3	62
76	29	3	80	143	2	80		6	4	63
82	23	3	84	150	2	79		6	4	64
77	23	4	79	159	2	82		6	4	65
73	30	4	67	148	2	79		6	4	66
\$37,252	\$27,505	\$10,788	\$37,379	\$110,717	\$5,701	\$17,633	\$4,393	\$1,330	\$9,865	67
\$4,024	\$4,176	\$2,640	\$16,521	\$35,932	\$1,470	\$7,715	\$1,400	\$480	\$1,220	68
\$1,255	\$5,392	\$74	\$1,458	\$363	\$68	\$1,233		\$58	\$209	69
\$26,753	\$17,777	\$7,374	\$19,900	\$63,322	\$4,163	\$3,555	\$2,993	\$1,292	\$3,338	70
\$4,620	\$160	\$200		\$10,600		\$180			\$48	71
\$196,842	\$237,335	\$26,679	\$398,616	\$943,432	\$20,946	\$403,106	\$9,040	\$13,751	\$48,804	72
\$162,545	\$193,273	\$22,233	\$353,452	\$859,698	\$13,204	\$372,631	\$3,170	\$13,788	\$31,852	73
\$7,598	\$7,180	\$1,273	\$4,920	\$7,665	\$25	\$1,861	\$60	\$1,344	\$3,252	74
\$5,434	\$1,539	\$1,777	\$5,342	\$11,733	\$770	\$4,770	\$300	\$386	\$438	75
\$6,931	\$4,705	\$257	\$2,237	\$7,673	\$390	\$1,733	\$200	\$303	\$4,691	76
\$8,850	\$27,403	\$2,194	\$29,593	\$41,746	\$1,515	\$11,542	\$310	\$2,162	\$4,934	77
\$5,434	\$3,730	\$495	\$3,022	\$14,917	\$342	\$10,519		\$758	\$3,537	78
\$366,538	\$681,081	\$35,449	\$1,025,544	\$2,371,196	\$53,373	\$309,355	\$33,539	\$63,125	\$172,611	79
1,268,338	2,127,345	97,060	2,155,025	6,779,432	123,372	2,963,664	114,200	69,450	633,953	80
\$395,815	\$674,656	\$43,896	\$979,328	\$2,298,796	\$37,503	\$349,973	\$29,029	\$33,434	\$134,741	81
		1,520		32,230		260,880				82
		\$547		\$19,365		\$116,938				83
	534,310	6,125	170,000	150,000	12,000	172,344	2,000		15,150	84
	\$231,562	\$2,205	\$43,000	\$34,000	\$1,500	\$49,344	\$1,000		\$3,030	85

TABLE 11.—BUTTONS,

	United States.	California.	Connecticut.	Illinois.
Products—Continued:				
Aggregate value—Continued—				
Buttons—Continued—				
Total value—Continued—				
Composition—				
86				
87	Gross Value .....	2,407,819		
88	Horn—	\$246,410		
89	Gross Value .....	717,047	306,867	
	Metal—	\$237,874	\$173,405	
90	Brass—			
91	Gross Value .....	3,713,144	2,995,784	
92	All other metal—	\$739,922	\$449,373	
93	Gross Value .....	1,046,527	377,100	15,000
94	Pearl, fresh-water—	\$147,599	\$17,913	\$22,000
95	Gross Value .....	4,308,584		137,000
96	Pearl, ocean—	\$1,176,285		\$37,500
97	Gross Value .....	4,049,452		4,900
98	Vegetable ivory—	\$1,951,558		\$7,400
99	Gross Value .....	2,661,823	470	
100	All other kinds—	\$1,144,677	\$1,000	744,467
101	Gross Value .....	680,072		12,000
	Blanks, fresh-water pearl—	\$217,523		\$4,000
102	Gross Value .....	5,432,246		630,943
103	Value of all other products	\$656,036		\$134,101
104	Comparison of products:	\$572,501	\$1,620	\$226,427
105	Number of establishments reporting for both years	154	4	10
106	Value for census year	\$6,671,943	\$6,870	\$1,060,159
107	Value for preceding business year	\$5,492,921	\$5,215	\$1,020,879
108	Power:			
109	Number of establishments reporting	201	1	11
	Total horsepower	4,235	1	546
	Owned—			
	Engines—			
	Steam—			
110	Number .....	70		3
111	Horsepower .....	2,305		91
112	Gas or gasoline—		310	
113	Number .....	28		3
	Horsepower .....	263		20
114	Water wheels—			
115	Number .....	8		3
	Horsepower .....	144		45
116	Electric motors—			
117	Number .....	6		3
	Horsepower .....	70		55
118	Other power—			
119	Number .....	1		
	Horsepower .....	25		
120	Rented—			
	Electric horsepower .....	117	1	20
121	All other horsepower .....	1,311		116
122	Furnished to other establishments, horsepower .....	99		10
Establishments classified by number of persons employed, not including proprietors and firm members:				
123	Total number of establishments			
124	No employees	233	5	11
125	Under 5	1	1	14
126	5 to 20	35	4	1
127	21 to 50	78		7
128	51 to 100	59		4
129	101 to 250	37		2
130	251 to 500	22		
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# COTTON GINNING.

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# COTTON GINNING.

[Crops of 1899, 1900, and 1901.]

By DANIEL C. ROPER, *Expert Special Agent.*

Table 1 presents a summarized statement of the cotton crops of 1899, 1900, and 1901, as ascertained from the reports of ginner. In this table are shown, by states and territories, the amount of cotton ginned, the per cent which the state crop forms of the total crop, and the increase or decrease in the crops of 1900 and 1901 as compared with that of 1899.

TABLE 1.—QUANTITY OF COTTON GINNED FROM THE CROPS OF 1899, 1900, AND 1901: COMPARATIVE SUMMARY, BY STATES AND TERRITORIES, WITH PER CENT, WHICH QUANTITY GINNED BY EACH STATE AND TERRITORY, FORMS OF THE TOTAL CROP AND PER CENT OF INCREASE SINCE 1899.

STATES AND TERRITORIES.	CROP OF 1899.					CROP OF 1900.				
	Commercial bales.				Equivalent 500-pound bales.	Commercial bales.				Equivalent 500-pound bales. <sup>1</sup>
	Total.	Square.	Round.	Sea-island.		Total.	Square.	Round.	Sea-island.	
United States.....	9,646,974	9,048,231	505,464	97,279	9,345,391	10,486,148	9,629,762	768,092	88,294	10,128,027
Alabama.....	1,108,690	1,069,644	34,046	.....	1,078,519	1,061,678	995,602	66,076	.....	1,028,802
Arkansas.....	719,453	685,570	33,888	.....	705,583	828,820	778,247	55,578	.....	812,984
Florida.....	56,821	25,583	.....	31,238	49,359	55,696	27,690	.....	28,066	48,616
Georgia.....	1,296,844	1,220,117	18,915	57,812	1,281,060	1,270,597	1,191,125	27,898	52,079	1,208,868
Indian Territory.....	160,324	121,785	38,539	.....	148,608	288,114	197,704	90,410	.....	249,985
Kansas.....	121	121	.....	.....	121	151	151	.....	.....	151
Kentucky.....	84	84	.....	.....	79	133	.....	.....	.....	188
Louisiana.....	708,508	694,816	13,692	.....	700,352	714,073	696,049	18,024	.....	705,767
Mississippi.....	1,264,048	1,214,699	49,349	.....	1,237,666	1,056,968	1,018,090	87,878	.....	1,046,700
Missouri.....	19,377	19,377	.....	.....	20,275	27,980	25,712	2,268	.....	27,871
North Carolina.....	478,155	472,385	770	.....	440,400	509,841	507,263	2,078	.....	477,269
Oklahoma.....	84,085	58,077	30,958	.....	71,938	116,875	89,782	27,093	.....	106,707
South Carolina.....	876,545	864,714	3,602	8,229	887,105	780,782	770,767	1,866	8,149	748,726
Tennessee.....	215,175	199,926	15,249	.....	211,641	227,601	208,149	24,462	.....	221,619
Texas.....	2,688,555	2,892,094	266,461	.....	2,609,018	8,586,506	3,121,525	414,981	.....	8,438,886
Utah <sup>5</sup> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	31
Virginia.....	9,289	9,289	.....	.....	8,622	11,838	11,838	.....	.....	11,022

STATES AND TERRITORIES.	CROP OF 1901.					INCREASE OVER 1899 CROP.				PER CENT OF TOTAL GINNED. <sup>3</sup>		
	Commercial bales.				Equivalent 500-pound bales. <sup>2</sup>	1900.		1901.		1899	1900	1901
	Total.	Square.	Round.	Sea-island.		Equivalent 500-pound bales.	Per cent.	Equivalent 500-pound bales.	Per cent.			
United States.....	9,954,945	9,182,215	744,851	77,879	9,509,745	777,636	8.3	164,354	1.8	100.0	100.0	100.0
Alabama.....	1,156,812	1,068,972	87,840	.....	1,101,227	454,717	45.1	22,708	2.1	11.5	10.1	11.6
Arkansas.....	788,080	686,908	51,177	.....	718,818	107,401	15.2	12,785	1.8	7.6	8.0	7.6
Florida.....	57,144	29,879	.....	27,765	49,991	4743	11.5	692	1.3	0.5	0.5	0.5
Georgia.....	1,405,092	1,300,125	62,470	42,497	1,314,881	427,752	42.8	83,821	6.8	13.2	11.9	13.8
Indian Territory.....	284,170	199,049	85,121	.....	247,073	106,327	74.0	108,465	72.0	1.5	2.5	2.6
Kansas.....	170	170	.....	.....	157	30	24.8	36	29.8	.....	.....	.....
Kentucky.....	140	140	.....	.....	172	54	68.4	93	117.7	.....	.....	.....
Louisiana.....	860,848	807,248	58,600	.....	840,476	5,415	0.8	140,124	20.0	7.5	7.0	8.8
Mississippi.....	1,275,489	1,230,016	45,423	.....	1,254,863	4190,966	415.4	17,197	1.4	13.2	10.3	13.2
Missouri.....	30,837	28,445	2,392	.....	30,890	7,596	87.5	10,615	52.4	0.2	0.8	0.3
North Carolina.....	451,441	448,814	2,627	.....	415,808	86,869	8.4	424,592	45.6	4.7	4.7	4.4
Oklahoma.....	149,064	109,776	39,288	.....	131,413	34,724	48.2	59,480	82.6	0.8	1.0	1.4
South Carolina.....	782,719	722,786	2,816	7,617	692,261	488,379	410.6	4144,844	417.8	9.0	7.4	7.3
Tennessee.....	204,588	185,167	19,381	.....	197,183	9,978	4.7	414,508	46.9	2.3	2.2	2.1
Texas.....	2,594,442	2,801,226	298,216	.....	2,502,166	829,368	31.8	4106,852	44.1	27.9	84.0	26.8
Utah <sup>5</sup> .....	.....	.....	.....	.....	.....	81	.....	.....	.....	.....	.....	.....
Virginia.....	14,009	14,009	.....	.....	12,916	2,400	27.8	4,294	49.8	0.1	0.1	0.1

<sup>1</sup> Includes 10,000 pounds in Tennessee and 15,560 pounds in Utah not baled.

<sup>2</sup> Includes 16,000 pounds in Kentucky, 5,000 pounds in North Carolina, 11,050 pounds in Tennessee, and 5,000 pounds in Virginia not baled.

<sup>3</sup> Percentages calculated on basis of 500-pound bales.

<sup>4</sup> Decrease.

<sup>5</sup> No report of cotton ginned in 1899 and 1901.

As shown by this table, the crop of 1901 exceeded that of 1899 by 308,971 commercial bales, while the crop of 1900 exceeded that of the preceding year by 840,174. Compared with 1899 the crop of 1900 increased by 8.3 per cent, and that of 1901 by 1.8 per cent. East of the Mississippi River production decreased from 5,094,451 bales in 1899 to 4,781,195 in 1900, or 313,256 commercial bales. This was more than offset by the increased production west of the Mississippi, where the yield in commercial bales was 5,341,832 in 1900, against 4,250,940 in 1899, an increase of 1,090,892, or 25.7 per cent.

Texas is the great marvel of the cotton belt. It has shown an ability to increase or decrease its crop by practically a million bales without any grave disturbance of its equilibrium in the commercial community. In 1899 the crop of this state was 2,609,018 bales (500-pound standard); that of 1900 was 3,438,386 bales, an increase of 829,368 bales. This increase is the more noteworthy when the great disaster resulting from the storm of September, 1900, is taken into consideration.

In the 31 counties lying in the wake of this storm, the production fell off from 491,236 bales in 1899 to 273,866 bales in 1900, a loss of 217,370 bales as compared with the crop of 1899. It thus appears that in the remaining counties of Texas, the actual increase was 1,046,738 bales. In 1900 Texas produced 34 per cent, or more than one-third of the entire American cotton crop, and about one-fourth of all the cotton grown in the world. The conditions which affected the crop east and west of the Mississippi River in 1901 were quite the reverse of those in 1900. In 1901 there was excessive rainfall in the territory east of the Mississippi, and insufficient rainfall west of the Mississippi, and to this, for Texas, must be added the destructive effects of the boll weevil in 1901. Texas in 1901 lost 942,064 commercial bales, as compared with its production in 1900.

Table 2 presents, by states and territories, the quantity in pounds of cotton ginned from the crops grown in 1899, 1900, and 1901, and the average weight of square, round, and sea-island bales.

TABLE 2.—TOTAL WEIGHT OF COTTON GINNED FROM CROPS OF 1899, 1900, AND 1901, WITH AVERAGE WEIGHT OF BALES, BY STATES AND TERRITORIES.

STATES AND TERRITORIES.	CROP OF 1899.			CROP OF 1900.			CROP OF 1901.					
	Aggregate gross weight (pounds).	Average gross weight of bale (pounds).			Aggregate gross weight (pounds).	Average gross weight of bale (pounds).			Aggregate gross weight (pounds).	Average gross weight of bale (pounds).		
		Square.	Round.	Sea-island.		Square.	Round.	Sea-island.		Square.	Round.	Sea-island.
United States.....	4,672,695,500	498	259	388	5,061,518,294	501	263	385	4,754,872,521	496	258	384
Alabama.....	589,259,644	485	276	.....	511,900,714	496	278	.....	550,618,616	494	261	.....
Arkansas.....	352,791,736	502	263	.....	406,491,983	506	268	.....	359,158,831	503	264	.....
Florida.....	24,679,337	492	.....	387	24,808,127	491	.....	383	24,995,285	487	.....	385
Georgia.....	615,529,844	482	256	394	601,654,189	482	261	392	657,440,656	481	250	389
Indian Territory.....	71,808,832	508	259	.....	124,967,426	515	287	.....	123,536,505	510	258	.....
Kansas.....	60,500	500	.....	.....	75,500	500	.....	.....	78,500	462	.....	.....
Kentucky.....	39,600	471	.....	.....	66,500	500	.....	.....	86,000	500	.....	.....
Louisiana.....	350,176,196	499	263	.....	852,883,228	500	261	.....	420,238,220	504	255	.....
Mississippi.....	618,833,461	499	258	.....	523,350,037	503	289	.....	627,431,459	500	269	.....
Missouri.....	10,137,502	523	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
North Carolina.....	220,199,727	466	253	.....	13,985,257	518	270	.....	15,445,118	522	250	.....
Oklahoma.....	95,931,448	513	274	.....	238,634,615	469	270	.....	207,903,958	462	255	.....
South Carolina.....	418,552,594	491	257	347	53,353,661	513	269	.....	65,706,521	506	258	.....
Tennessee.....	105,820,457	510	254	.....	374,362,722	481	250	354	346,180,637	474	249	352
Texas.....	1,304,508,732	517	256	.....	110,809,694	514	264	.....	98,566,265	506	255	.....
Utah.....	.....	.....	.....	.....	1,719,193,091	516	259	.....	1,251,033,134	511	256	.....
Virginia.....	4,310,840	467	.....	.....	15,560	.....	.....	.....	.....	.....	.....	.....
					5,511,040	466	.....	.....	6,457,766	461	.....	.....

In the preparation of the tables of this report, the following method has been employed: The number of pounds of cotton ginned by an establishment is obtained by multiplying the number of bales by the average bale weight reported by that establishment. The average bale weight for the United States, and the state, is then obtained by dividing the total number of pounds by the total number of bales. The average weight of the square bale for the United States, as found by this method, was 498 pounds in 1899, 501 pounds in 1900, and 496 pounds in 1901; that of the sea-island bale for 1899, 1900, and 1901 was, respectively, 388, 385, and 384 pounds; while the average weight of the round bale for the same years was respectively 259, 263, and 258 pounds. The average weight for the entire

country was 485 pounds in 1899, 483 in 1900, and 478 in 1901.

The number of round bales ginned from the crop of 1899 was 505,469, exclusive of sea-island cotton; in 1900 the number was 768,092, and in 1901 it was 744,851. Because of the introduction of round-bale systems in some states and the retention of light square bales in others, the number of commercial bales (bales as reported by ginners) does not credit the several states with their proper quota of the cotton crop. In view of this condition, while the number of commercial bales is given in each instance, the crop of each county, state, and for the United States, is given also in equivalent bales of a 500-pound standard. Where bales are mentioned in the comparative statements of this report,

without giving the standard it will be understood that this standard is employed. However, in stating the average number of bales handled per establishment, given in Table 3, the commercial bale is employed as the unit.

Table 3 presents a summarized statement, by states, of the number of ginneries reported for the three crops mentioned and the average number of bales handled per establishment.

TABLE 3.—ACTIVE GINNERIES, AND AVERAGE NUMBER OF BALES GINNED PER ESTABLISHMENT, 1899, 1900, AND 1901, WITH AVERAGE NUMBER OF MONTHS IN OPERATION AND AVERAGE COST PER BALE FOR GINNING AND BALING IN 1899: BY STATES AND TERRITORIES.

STATES AND TERRITORIES.	CROP OF 1899.						CROP OF 1900.		CROP OF 1901.	
	Total number.	Average number of months in operation.	Average cost per bale for ginning and baling.			Average number of bales ginned per establishment.	Total number.	Average number of bales ginned per establishment.	Total number.	Average number of bales ginned per establishment.
			Square.	Round.	Sea-island.					
United States.....	29,620	3	\$2.03	\$1.15	\$4.90	326	29,214	359	29,254	340
Alabama.....	4,084	3	1.47	0.90	.....	274	4,044	263	4,161	278
Arkansas.....	2,630	3	1.98	1.24	.....	274	2,578	321	2,393	308
Florida.....	236	3	1.62	.....	3.78	241	246	326	272	210
Georgia.....	4,729	4	1.26	0.90	3.59	274	4,670	272	4,793	293
Indian Territory.....	297	4	2.61	1.15	.....	540	301	957	323	380
Kansas.....	2	2	3.00	.....	.....	61	1	151	2	85
Kentucky.....	2	1	2.25	.....	.....	42	2	67	1	140
Louisiana.....	2,148	3	1.75	1.32	.....	330	2,089	342	2,207	330
Mississippi.....	3,970	4	1.78	1.14	.....	318	3,934	268	4,146	308
Missouri.....	56	3	2.66	.....	.....	346	66	424	63	453
North Carolina.....	2,573	3	1.53	0.83	.....	184	2,659	192	2,578	175
Oklahoma.....	133	3	2.09	1.52	.....	632	137	853	155	962
South Carolina.....	3,368	3	1.29	1.00	7.34	260	3,193	245	3,013	243
Tennessee.....	834	3	2.63	1.41	.....	258	826	276	810	253
Texas.....	4,514	4	2.19	1.19	.....	589	4,370	309	4,232	613
Utah.....	.....	.....	.....	.....	.....	.....	1	( <sup>1</sup> )	.....	.....
Virginia.....	88	3	2.30	.....	.....	105	97	122	96	146

<sup>1</sup> Cotton not baled.

Table 3 shows the active ginneries in the United States to have been 29,620 in 1899, 29,214 in 1900, and 29,254 in 1901. In excess of the number annually reported as active, there are about 1,000 private plantation establishments which fluctuate between active and idle, as light or heavy production influences their operations. From 5 to 10 per cent of the active number must be revised annually as to ownership or operation. The loss from season to season, by establishments going out of business, is considerable, but is offset by those reported as new or revived for the current crop.

The average number of bales ginned per establishment from the crop of 1899 was 326, in 1900 the average was 359, and in 1901 it was 340. The size of the ginning establishments in Texas and the territories as compared with those of other states is noteworthy. For example, the average capacity of establishments in Texas for the crop of 1899 was 589 bales; in the Indian Territory, 540 bales; and in Oklahoma, 632 bales; while

in North Carolina and Georgia it was 184 and 274 bales, respectively. The scarcity of labor in Texas and the territories has had an important bearing on the introduction into those sections of modern systems of handling seed cotton. With 4,514 active ginneries in 1899, or 15.2 per cent of the number reported for the United States, Texas handled 27.6 per cent of the entire American crop, expressed in commercial bales, while Georgia, with 4,729, or 16 per cent of the entire number of the United States, handled only 13.4 per cent of the crop. The ginneries east of the Mississippi River handled 54.9 per cent from the crop of 1899, 47.4 per cent from the crop of 1900, and 53.2 per cent from the crop of 1901.

Table 4 presents a comparative summary, by states, of the quantity of sea-island cotton ginned in the United States from the crops grown in 1899, 1900, and 1901, the average gross weight of bale, and the per cent each state ginned of the total.

TABLE 4.—QUANTITY OF SEA-ISLAND COTTON GINNED FROM CROPS OF 1899, 1900, AND 1901, AVERAGE GROSS WEIGHT OF BALES, BY STATES, AND PER CENT OF THE TOTAL WHICH EACH STATE GINNED.

STATES.	CROP OF 1899.			CROP OF 1900.			CROP OF 1901.			PER CENT OF TOTAL.		
	Total gross weight in pounds.	Number of bales.	Average gross weight of bale (pounds).	Total gross weight (pounds).	Number of bales.	Average gross weight of bale (pounds).	Total gross weight in pounds.	Number of bales.	Average gross weight of bale (pounds).	1899	1900	1901
United States.....	37,723,303	97,279	388	34,037,152	85,294	385	29,901,303	77,879	384	100.0	100.0	100.0
Florida.....	12,083,847	31,238	387	10,740,340	28,066	383	10,676,521	27,765	385	32.1	31.8	35.6
Georgia.....	22,776,352	57,312	394	20,411,288	52,079	392	16,541,649	42,497	389	59.4	59.0	54.6
South Carolina.....	2,863,609	8,229	347	2,885,524	8,149	354	2,633,638	7,617	352	8.5	9.2	9.8

The sea-island cotton crop of 1900 is shown to have been 8,985 bales less than that of 1899. This loss was practically confined to Florida and Georgia, where losses of 3,172 and 5,733 bales, respectively, were reported. In 1901 the sea-island cotton crop is shown to have been 19,400 less than that of 1899, the loss for this year being again confined to Florida and Georgia, where losses of 3,473 and 15,315 bales, respectively, were reported.

The question is often asked why more long cotton is not produced in the United States. The answer that the territory adapted to its culture is very limited, and that its yield per acre is less than that of short cotton, is not entirely satisfactory when it is known that the producing capacity of the sea-island belt is not at present greatly taxed, and when the difference in price of long and short cotton is taken into consideration. Probably the most satisfactory explanation of this condition is found in the fact that cotton growers have been reluctant to grow this cotton, for the reason that no gin of the desired capacity has ever been invented which would separate the lint from the seed without injuring the fiber.

The ancient roller gin, which is now employed only for

the treatment of sea-island cotton, has the disadvantage of lack of capacity. The best of these gins yield less than one-tenth of the quantity of cotton turned out by the saw gin. On the other hand, the application of the saw gin to the treatment of sea-island cotton is not satisfactory, as it tends to break and otherwise injure the fiber, a matter of especial importance in the preparation of this staple for market. Much effort has recently been made to invent a gin which will overcome the objections mentioned and combine the advantages of both machines. There exists at this time some promise of thus revolutionizing the roller gin by greatly increasing its capacity without detriment to the product, and at the same time making it equally applicable to the treatment of all cottons. It is conceded that such an improvement would have important economic results in enhancing the value of all cotton treated by such a machine, and in inducing growers to plant sea-island and other superior varieties.

Table 5 shows, by states, the value and quantity of upland and sea-island cottons and of the cottonseed of the crops of 1899 and 1900. The value of the cotton and seed combined gives the total value of the cotton crop, which appears in the first column of the table.

TABLE 5.—QUANTITY AND VALUE OF UPLAND AND SEA-ISLAND COTTON AND SEED, AND TOTAL VALUE OF CROPS GROWN IN 1899 AND IN 1900: BY STATES AND TERRITORIES.

STATES AND TERRITORIES.	Year.	Total value of cotton crop.	COTTON.				COTTONSEED.		
			Total value.	Upland.		Sea-island.		Quantity (tons).	Value.
				Quantity (pounds). <sup>1</sup>	Value.	Quantity (pounds). <sup>1</sup>	Value.		
United States.....	1899	\$376,766,152.37	\$324,602,952.37	4,484,504,718	\$319,284,339.70	36,750,518	\$5,318,612.07	4,471,255	\$52,161,200
	1900	515,828,559.33	488,285,023.33	4,813,317,102	481,694,377.59	33,154,212	6,590,645.74	4,846,471	77,543,536
Alabama.....	1899	43,173,305.34	37,125,024.34	515,625,338	37,125,024.34	.....	.....	515,625	6,018,281
	1900	51,765,653.52	43,928,869.52	43,928,869.52	43,928,869.52	.....	.....	439,289	7,836,784
Arkansas.....	1899	28,298,270.38	24,307,743.38	337,607,547	24,307,743.38	.....	.....	337,608	3,993,527
	1900	41,145,603.64	34,916,579.64	339,313,780	34,916,579.64	.....	.....	339,314	6,229,024
Florida.....	1899	2,910,578.86	2,632,071.86	12,032,664	866,351.81	11,771,467	1,765,720.05	23,804	278,567
	1900	3,628,999.45	3,254,279.45	12,959,927	1,162,343.45	10,459,680	2,091,936.00	28,420	374,729
Georgia.....	1899	50,759,634.28	43,738,293.28	565,858,673	40,741,464.46	22,198,732	2,906,828.82	588,052	7,021,341
	1900	62,749,344.36	53,551,803.36	554,955,972	49,772,613.74	19,890,498	3,779,194.62	574,846	9,197,536
Indian Territory.....	1899	5,747,066.94	4,968,644.04	69,008,945	4,968,644.04	.....	.....	69,009	778,422
	1900	12,719,147.37	10,793,595.37	120,346,708	10,793,595.37	.....	.....	120,947	1,925,552
Kansas.....	1899	4,843.34	4,164.34	57,838	4,164.34	.....	.....	58	679
	1900	7,025.47	6,473.47	72,178	6,473.47	.....	.....	72	1,152
Kentucky.....	1899	3,163.14	2,718.14	37,752	2,718.14	.....	.....	38	415
	1900	6,709.79	5,701.79	63,574	5,701.79	.....	.....	63	1,008
Louisiana.....	1899	27,889,585.10	24,109,140.10	334,849,168	24,109,140.10	.....	.....	334,849	3,780,445
	1900	35,671,229.25	30,270,973.25	337,516,078	30,270,973.25	.....	.....	337,516	5,400,250
Mississippi.....	1899	49,483,025.59	42,621,266.59	591,962,036	42,621,266.59	.....	.....	591,962	6,866,759
	1900	52,932,354.06	44,918,946.06	500,838,423	44,918,946.06	.....	.....	500,838	8,013,408
Missouri.....	1899	812,825.98	699,206.98	9,711,208	699,206.98	.....	.....	9,711	113,619
	1900	1,412,283.14	1,198,475.14	13,362,789	1,198,475.14	.....	.....	13,368	213,898
North Carolina.....	1899	17,665,577.18	15,105,956.18	209,804,947	15,105,956.18	.....	.....	209,805	2,550,621
	1900	24,040,593.62	20,401,089.62	227,468,595	20,401,089.62	.....	.....	227,469	3,639,591
Oklahoma.....	1899	2,826,052.36	2,500,623.36	34,730,880	2,500,623.36	.....	.....	34,731	325,429
	1900	5,421,467.65	4,600,715.65	51,297,178	4,600,715.65	.....	.....	51,297	820,752
South Carolina.....	1899	34,691,384.71	29,115,257.71	396,655,471	28,569,193.91	2,780,319	556,068.80	399,436	5,576,127
	1900	38,232,158.61	32,515,054.61	354,514,726	31,795,539.49	2,804,034	719,515.12	357,319	5,717,104
Tennessee.....	1899	8,412,204.34	7,299,096.34	101,376,338	7,299,096.34	.....	.....	101,376	1,113,108
	1900	11,231,038.94	9,530,826.94	108,267,060	9,530,826.94	.....	.....	106,267	1,700,272
Texas.....	1899	103,739,825.83	90,077,999.83	1,251,033,331	90,077,999.83	.....	.....	1,251,033	13,661,826
	1900	174,307,715.51	147,919,315.51	1,649,274,598	147,919,315.51	.....	.....	1,649,275	26,388,400
Utah.....	1899	.....	.....	15,560	.....	.....	.....	.....	.....
	1900	1,635.54	1,995.54	.....	1,395.54	.....	.....	.....	.....
Virginia.....	1899	343,809.90	295,745.90	4,107,582	295,745.90	.....	.....	4,108	48,064
	1900	554,939.41	470,923.41	5,250,714	470,923.41	.....	.....	5,251	84,016

<sup>1</sup>Exclusive of weight of bagging and ties.

In ascertaining the value of the cotton crops, the quantities of cotton produced, as reported by the ginners, have been multiplied by the average prices per pound, 7.2 cents for upland and 15, 13.5, and 20 cents for sea-island in Florida, Georgia, and South Carolina, respectively, for the crop of 1899,<sup>1</sup> and \$0.0896875<sup>2</sup> for middling upland and \$0.20, \$0.19, and \$0.2566 for sea island in Florida, Georgia, and South Carolina,<sup>3</sup> respectively, for the crop of 1900. It is impossible to show the value of the crop of 1901, as the commercial year for that crop does not end until August 31, 1902.

The quantity of seed produced has been determined by multiplying the number of pounds of lint cotton by 2, it being an authenticated fact that seed cotton on an average "thirds itself" at the gin; that is, one-third of

the cotton's weight before it is ginned is lint cotton and the remaining two-thirds seed. The value of the seed has been determined by multiplying the total quantities produced by the average prices at which the portions marketed in the respective states were purchased by the cotton-seed oil mills, as shown in the report on Cottonseed Products, page 585. The average price of cottonseed in 1900 was \$16 per ton of 2,000 pounds delivered at the mills.<sup>4</sup> In the reports of ginners the gross weight of the bale was given, and in ascertaining the net quantity of cotton produced, as shown in Table 5, 22 pounds per bale for square bales have been deducted to cover the weight of bagging and ties; and for sea-island and round bales 10 and 3 pounds per bale, respectively, have been deducted to cover the weight of wrapping, as reported by the ginners themselves.

Table 6 shows the number of counties forming the cotton-producing states, number of cotton-producing counties, and production and per cent of total crop ginned by counties of 5,000 and 10,000 bales, respectively.

<sup>4</sup>The price of cottonseed for the crop of 1900 has been determined from information furnished by the Oil, Paint and Drug Reporter, and the American Cotton Oil Company, as well as by various cotton-seed oil mills located in the several cotton states.

<sup>1</sup>"The Cotton Crop of 1899-1900," issued by the United States Department of Agriculture, page 30.

<sup>2</sup>The Census Office is indebted to Messrs. Latham, Alexander & Co., of New York city, for the average price of middling upland cotton in the New York market for the year ending August 31, 1901, and to the following sea-island cotton factors for valuable information as to the prices of this cotton in the three states producing it: Mr. R. M. Butler, of Savannah, Ga.; Mr. L. Gourdin Young, of Savannah, Ga.; and Messrs. Henry W. Frost & Co., of Charleston, S. C.

<sup>3</sup>"The Cotton Crop of 1899-1900," issued by the United States Department of Agriculture, page 30.

TABLE 6.—COTTON-PRODUCING STATES, TOTAL NUMBER OF COUNTIES, AND NUMBER REPORTING COTTON GINNING, WITH QUANTITY AND PERCENTAGE OF TOTAL CROP GINNED BY COUNTIES REPORTING 5,000 BALES AND OVER AND 10,000 BALES AND OVER, RESPECTIVELY, 1901.

STATES AND TERRITORIES.	Total number counties.	COUNTIES REPORTING COTTON GINNING.		COUNTIES REPORTING 5,000 BALES AND OVER.			COUNTIES REPORTING 10,000 BALES AND OVER.		
		Number.	Quantity ginned (bales).	Number.	Quantity ginned (bales).	Per cent of total ginned.	Number.	Quantity ginned (bales).	Per cent of total ginned.
United States .....	1,408	767	9,954,945	532	9,515,168	95.6	364	8,316,292	83.5
Alabama .....	66	66	1,156,812	62	1,149,336	99.4	51	1,070,881	92.6
Arkansas .....	75	71	738,080	48	676,034	91.6	33	576,435	78.1
Florida .....	45	24	67,144	5	40,816	71.4	1	12,575	22.0
Georgia .....	137	126	1,405,092	102	1,361,524	96.9	59	1,034,694	73.6
Indian Territory .....	9	5	284,170	4	282,570	99.4	4	282,570	99.4
Kansas .....	100	1	170						
Kentucky .....	119	2	140						
Louisiana .....	59	48	860,848	44	854,516	99.3	30	751,784	87.3
Mississippi .....	75	73	1,275,480	68	1,268,635	99.5	48	1,116,215	87.5
Missouri .....	115	9	30,837	1	19,760	64.1	1	19,760	64.1
North Carolina .....	97	70	2,451,441	33	371,523	82.3	17	260,738	57.8
Oklahoma .....	23	15	149,064	8	137,249	92.1	7	130,700	87.7
South Carolina .....	40	40	732,719	38	696,892	95.1	30	663,576	90.6
Tennessee .....	96	41	3,204,538	16	131,313	88.6	8	124,285	60.8
Texas .....	246	166	2,594,442	103	2,475,000	95.4	76	2,272,129	87.6
Virginia .....	100	10	14,009						

<sup>1</sup> Does not include 16,000 pounds ginned in Graves county but not baled.  
<sup>2</sup> Does not include 5,000 pounds ginned in Caldwell county but not baled.  
<sup>3</sup> Does not include cotton ginned, but not baled, as follows: Bledsoe county, 1,500 pounds; Dickson county, 2,500 pounds; Monroe county, 1,150 pounds; and White county, 6,000 pounds.  
<sup>4</sup> Does not include 5,000 pounds ginned in Pittsylvania county but not baled.

From Table 6 it is seen that of the 1,408 counties forming the 16 cotton-producing states for the crop of 1901, 767, or 54.5 per cent, are cotton-producing counties. Five hundred and thirty-two counties, or 69.4 per cent of the total number producing cotton, reported 5,000 commercial bales and over, and a total crop of 9,515,168 bales, or 95.6 per cent of the entire

crop; and 364 counties, or 47.5 per cent of the cotton-producing counties, reported a production of 10,000 bales and over, and a total production of 8,316,292 bales, or 83.5 per cent of the total crop.

Table 8 shows the distribution of the cotton crops of 1899, 1900, and 1901, by counties, expressed both in commercial and equivalent 500-pound bales.

## HISTORICAL AND DESCRIPTIVE.

Since the introduction of cotton into the commercial world as a product of importance the crop as marketed has been accepted as identical with that grown, except for census years when an enumeration was made through a personal canvass of the farms. An adequate conception of the commercial method of making the count is obtained from the plan of the "Commercial and Financial Chronicle," an accepted authority, which computes the crop from three sources: First, receipts at United States ports; second, shipments from the interior direct to the United States consumers and to Canada; and third, cotton consumed by mills located in the Southern states. The Chronicle counts the port receipts only, taking it for granted that the amount of cotton in the interior at the end of each season, whether in the towns or in the hands of the farmers, is a fixed and unvarying quantity. It is obvious, however, that unless the amount of cotton remaining in the interior towns, and in the hands of the farmers at the end of the season, is the same each year, this method of counting the crop is likely to be erroneous, and the error is necessarily measured by the variation in the quantity of cotton left at the end of the season in the hands of the planters, and in the interior towns.

The first item which enters this count is what is known as net port receipts. With a view of avoiding liability of duplication, the various cotton exchanges try to keep an accurate record of the shipments from one port to another, and thus differentiate port receipts as "net" and "gross." The gross port receipts include all cotton received at the ports, whether shipped from the interior or coastwise from other ports, and the net receipts are those shipped directly from the interior to the ports. The cotton exchanges and the various bureaus that keep count of the cotton movement are dependent upon the fidelity and accuracy of transportation companies to discriminate between gross and net shipments. It is readily seen that in making this discrimination considerable liability to error must arise.

The next factor in this count is "shipments from the interior direct to northern consumers and to Canada." The portion of the crop so counted is technically known as the "overland movement," and is arrived at by taking the shipments passing out of the cotton belt across a theoretical cordon drawn about it, the points of railroad intersection selected for the count being St. Louis, Cairo, Paducah, Rock Island, Louisville, Cincinnati, and minor towns. It is obvious that the cotton shipped via St. Louis to New York will, upon its arrival at New York, be counted as part of the port receipts, and if it is again counted as part of the overland movement there will be duplication. To avoid this there is deducted from the gross overland movement "shipments to ports and from ports to inland mills," and the remainder which is called the "net overland movement" is

reckoned as an integral part of the crop. It is needless to point out the difficulties involved in keeping accurately such a complicated record. It becomes necessary to devise machinery that will accurately count all the cotton moved by rail out of the cotton belt, and to differentiate between the cotton so shipped which is designated for interior or seaboard points. It is further necessary to keep an accurate record of all cotton which is shipped from seaboard points by rail to the interior, and which, in so being shipped, may again pass the arbitrary and theoretical cordon drawn around the cotton belt. While credit is given to the authorities for their conscientiousness of purpose in attempting to keep this record, it is impracticable for them to get the facts accurately.

The third item in this count is southern consumption, which, of necessity, is estimated. There are many reasons why it is impossible to secure from each southern mill its actual cotton consumption during a given season.

In addition to the factors already enumerated, there should be taken into consideration the quantity of linters obtained from re-ginning the cottonseed by the oil mills and reported to the various exchanges in the commercial movement by the transportation companies. Again, there is a clear case of duplication in the rebaling of cotton samples, known as "city crop." A bale of cotton is sampled several times in its progress from the producer to the consumer. These samples, with the cotton torn from the bales, either at the compresses or in handling, are gathered up and rebaled. From a careful inquiry into this subject, it would appear that as much as 150,000 bales are thus duplicated annually.

It is safe to assume that the disparagement between the quantity of cotton grown in 1901 and that commercially moved between September 1, 1901, and August 31, 1902, might equal 450,000 bales, distributed as follows: Reduction in the reserve of cotton produced in previous years, but marketed with this crop on account of scarcity of cotton and advance in prices, 150,000 bales; rebaled samples, 150,000; linters, 150,000, making a total of 450,000 bales.

Statistics collected through this commercial system, however accurately compiled, fall short of the demands of both the producer and manufacturer, first, in that they cover the quantity of cotton marketed between September 1 of one year and August 31 of the following year, and are not statistics of a crop grown in any one year; and, second, the liability to error involved in the count. It is evident that nothing short of an annual census of the crop grown, taken sufficiently early to form a basis of prices, will entirely satisfy the cotton grower or manufacturer. The manner of attaining this end received careful consideration in taking the Twelfth Census.)

(Believing that reports of cotton ginners, showing the number and average weight of the bales passing through their hands during a given year, would afford trustworthy statistics of the crop of that year, the Census Office had its special agents and enumerators visit every cotton-ginning establishment in the country and obtain a report from each of the cotton ginned from the crop of 1899. The report of the crop of 1899 satisfactorily determined the trustworthiness of ginners' returns as to the volume of the cotton crop. But as the data for this first report were gathered by the enumerators, it remained to be demonstrated whether it would be possible to obtain similar facts through the mails. The Census Office, in its reports of the crops of 1900 and 1901, has twice demonstrated that this is a possible method of canvass. Every ginning establishment in the United States, as shown by the mailing list made up from the enumerators' returns of the crop of 1899, has been heard from either directly or indirectly. Wherever there was failure on the part of the ginners to respond to the inquiries of the Census Office, the cooperation of the local postmasters was secured through the courtesy of the Postmaster-General, and in this way the product of every ginners was obtained or the fact ascertained that it had not been in operation. The Census Office, through the individual cooperation of the ginners, has been able to keep its mailing list in perfect condition, by the elimination of abandoned establishments and the addition of new ones.

Conformity between the statistics as reported by the ginners and those measuring the commercial movement of the crop is not possible. The ginners are requested to report only the quantity of cotton ginned from the growth of one year, while statistics of the commercial movement have to do with the cotton marketed between September 1 of one year and August 31 of the following year, thus touching portions of at least two actual crops.

The Agricultural Division of the Census Office, collecting data through a personal canvass of the farms by the enumerators, reported the cotton crop of 1899 at 9,434,345 bales of an equivalent standard of 500 pounds, which is a variance from the crop as reported by the ginners of only 88,939 bales, or nine-tenths of 1 per cent. This is a remarkable verification of the reliability of ginners' reports in ascertaining the volume of the cotton crop. The county distribution made by the two reports differs, because large and important gineries, located near county lines, attract cotton from adjoining counties, or because cotton is grown only to a limited extent in some counties and their entire production is ginned and reported in a neighboring county.

The recent development of cotton manufacture, by mills located near the cotton fields, becomes an important factor in the demand for a change in the methods heretofore employed in estimating the annual American

production of cotton. Thousands of bales which never touch a transportation line are consumed by these mills, and the annual consumption through this source is rapidly increasing. In this connection the following statistics are of value:

COTTON PRODUCTION AND CONSUMPTION OF THE UNITED STATES, 1870 TO 1899, BY DECADES, AND PER CENT CONSUMED IN SOUTHERN MILLS.

CROP OF—	TOTAL CROP.	MILL CONSUMPTION.			PER CENT CONSUMED IN SOUTHERN MILLS.	
		North.	South.	Total.	Of total crop.	Of total American consumption.
1869 .....	2,050,556	687,915	68,702	756,617	2.60	9.08
1879 .....	5,214,355	1,831,630	169,058	1,600,688	3.24	11.27
1889 .....	7,128,391	1,734,217	501,675	2,235,892	7.04	22.44
1899 .....	9,845,890	2,219,603	1,415,684	3,635,287	15.15	38.94

The statistics of the above table, covering both the crop and the mill consumption, have been obtained by reducing census figures to an equivalent standard of 500 pounds. The crop given is of the growth of the year indicated, while the consumption statistics are for the year ending May 31, following.

In the census classification, the following states constitute the division known as "Southern states:" Alabama, Arkansas, Florida, Georgia, Indian Territory, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia. All other cotton-consuming states, for the purpose of this comparison, are classed as "Northern."

In 1870 the consumption of cotton by southern mills was 68,702 bales, or 9.08 per cent of the American consumption, being only 2.6 per cent of the American production. The consumption of these mills in 1900, as shown by this table, was 1,415,684 bales, or 38.94 per cent of the total consumption and 15.15 per cent of the total American crop.

TABLE 7.—QUANTITY OF COTTON GROWN IN THE UNITED STATES IN THE YEARS GIVEN, BETWEEN 1790 AND 1900.

CROP OF—	Production (bales).	Average weight of bale (pounds).	Total gross weight (pounds).	Increase in gross weight over preceding year given (pounds).
1790 .....	8,889	225	2,000,025	.....
1800 .....	177,778	225	40,000,050	38,000,025
1810 .....	350,000	250	80,000,000	39,999,950
1820 .....	681,819	264	180,000,216	100,000,216
1830 .....	1,312,685	339	445,000,215	264,999,799
1839 .....	2,053,193	385	790,479,305	345,479,090
1849 .....	2,469,098	400	987,637,200	197,157,895
1859 .....	5,387,052	445	2,397,238,140	1,409,600,940
1869 .....	3,011,966	440	1,325,273,240	1,071,959,800
1879 .....	5,755,350	453	2,607,177,627	1,281,899,387
1889 .....	7,472,511	472	3,564,387,747	957,210,120
1899 .....	9,645,974	485	4,672,693,500	1,108,307,753

<sup>1</sup> Decrease.

The preceding table is interesting as showing the rapid increase in the cotton production of the United States during the past century and the gradual growth of the cotton bale.

The census of 1840, collecting statistics of the crop of 1839, marked the beginning of the inclusion of agricultural statistics in census inquiries. The statistics given in Table 7 for 1839, and for years subsequent thereto, are the results of special census investigations. The cotton production of the United States from 1790 to 1829, inclusive, as shown in this table, is based upon a report to the Speaker of the House of Representatives in 1836, by the Hon. Levi Woodbury, Secretary of the Treasury.

Early settlers north of the Ohio River planted cotton for domestic uses between 1849 and 1880. The census of 1860 found in Illinois 1,482 bales, or 659,490 pounds of cotton. Stimulated by the high prices following the civil war, the cultivation of cotton was conducted to a limited extent in California, Illinois, Indiana, Nevada, Utah, and West Virginia. With the coming of low prices cotton culture gradually disappeared from these sections not peculiarly adapted to it, and censuses after 1870 credited none to California, Illinois, Indiana, Nevada, Utah, or West Virginia. Natural selection continues to eliminate the industry from sections less favored by climatic conditions. To illustrate, Kentucky is credited by the censuses of 1880 and 1890 with 1,367 and 873 bales, respectively, but at the census of 1900 the ginnerers reported for this state only 84 bales.

The loss of these states lying along the northern border of the cotton belt is more than offset by the increase found in the territory west and southwest of the Mississippi River. According to the Eleventh Census, 2,872,524 bales, or 38 per cent of the entire American crop of 1889, was grown in that region, while in the census of 1900, in the same territory the production, according to the ginnerers, reached 4,250,940 bales, or 45 per cent of the whole crop. This increase was practically confined to Texas, Oklahoma, and Indian Territory, Texas alone producing 28 per cent of the entire cotton crop. The census of 1890 credited the Indian Territory with 34,115 bales and Oklahoma with 425 bales. The census of 1900 gave these territories respectively 143,608 and 71,983 bales (500-pound standard).

Prior to the invention of the cotton gin by Eli Whitney in 1794 the separation of the seed from the lint cotton was so difficult as to limit the cultivation of cotton. This separation of the seed from the lint had to be done by hand, a task being 4 pounds of lint cotton per week for each head of the family, working at night in addition to the usual field work. Thus it would take one person two years to turn out the quantity of cotton contained in one average standard bale. One machine will gin from three to fifteen 500-pound bales per day, dependent upon its power and saw capacity. While

several machines had been invented for the seeding of cotton, it was reserved for Eli Whitney to inaugurate, by his invention, the era which was to perfect the industry of "cotton ginning" and revolutionize the culture and commerce of the staple.

The primitive saw gin was operated by hand and of necessity exceedingly limited in capacity. The first very substantial advancement, resulting from years of research, was the horse-power attachment for ginning and baling, which brought the old fashioned cotton gin and screw. The motive power for this gin was consisted of 2, 4, or more horses or mules. The cotton was hauled in wagons to the gin house, unloaded by hand into bins, carried again by hand to a platform, and thence fed by hand into the gin. By the old fashioned gin and screw the lint cotton was blown by a brush from the saw gin into a lint room, where it was often allowed to accumulate, awaiting a rainy day or other opportune occasion for baling. It was then conveyed in baskets or sheets to the single press box of the old "wooden screw," which was located some 30 or 40 feet from the ginhouse. There it was dumped into the box and trampled by foot until a sufficient quantity was inclosed to make a bale. By means of a horse at the lever or wing of the press the follow block, upon which the screw was pivoted, was forced down or up, as the case might be, until the desired bale density was attained. Jute bagging was generally used as a wrapping, and the shape of the bale was preserved, at first by the use of rope, and later by means of iron bands, called "ties."

A few of these "landmarks" are yet found throughout the country, though they are now curiosities. It is scarcely necessary to say that this old method of handling cotton at the gin was exceedingly laborious, wasteful, and unhealthy, and that nothing but cheap labor and high prices for the staple allowed it to continue as long as it did.

Much time, labor, and money have been expended in efforts to combine ginning and baling plants, to the end that greater speed might be gained, labor economized, and other desired reforms attained in handling seed cotton. The outcome is automatic ginneries, practically doing away with labor, and yielding from five to ten times as much lint cotton per day as was possible by the earlier processes.

A modern gin containing 4 gins of 70 saws each with a double square-bale press and suction apparatus attached requires an 80-horsepower engine. Such a plant in constant operation will yield from 40 to 60 bales of cotton per day. The wagon, loaded with seed cotton, is driven under a flexible slip of a joint pipe, and the cotton is drawn up by the suction created by an exhaust fan which is connected with the rear of the vacuum separator and cleaner. By this separator and cleaner the dust, sand, and leaf trash are sifted and drawn through by suction, and thus freed from impurities the cotton is conveyed through a distributor

to the automatic gin feeders. After filling all of the feeders the surplus cotton falls out at the end of the automatic tube and drops upon the floor or into a bin. When the cotton is all out of the wagon or bin, as the case may be, the ginner, by means of a simple lever, cause the suction to change from the direction of the wagon to that of the overflow, and the overflow cotton is conveyed to the gin feeders. From all the gins the cotton is conducted by a flue system to a condenser, and fed into one box of the self-packing revolving double press. In this way lint is ginned into one box while the bale is being pressed out of the other. Thus, the cotton need not be touched by hand from the time it leaves the wagon or bin until it is delivered, a perfect bale, upon the platform where it is loaded ready for market.

Thus, from the "hand seeder," yielding about 4 pounds of lint cotton per week, advance has been made to the saw gin, which, with a 40-saw capacity and horsepower, yielded about 2,000 pounds per day, and finally to the complete battery ginnery, carrying in some instances as many as 15 70-saw gins, operated by steam and having a possible capacity of 150 bales, or 75,000 pounds, in twelve hours. The condenser and automatic press feed have superseded the old "wooden screw." The laborious handling of the seed is avoided, it being blown either into a distant seed room or into the waiting wagon of the owner. In this way the life and value of the seed are preserved in conformity with the requirements of the oil mill. Thus, the arduous labor heretofore attached to the cotton ginnery has been wonderfully reduced, and life, limb, and property marvelously protected.

Possibly no invention ever caused so rapid a development of the industry with which it was associated as that brought through the saw cotton gin. In 1793 the exportation of cotton from the United States was 487,500 pounds, or 975 bales of an average weight of 500 pounds. In 1794, the year in which the Whitney gin was patented, the number of pounds of cotton exported from the United States was 1,600,000, equivalent to 3,200 bales of a 500-pound standard. This large production so frightened the cotton farmers, in anticipation of an overproduction of the crop, as to cause them to pledge themselves to desist from its production. One of these farmers, looking upon his crop gathered for that year, exclaimed, "I have done with the cultivation of cotton; there is enough in that gin-house to make stockings for all the people in America." And yet within one hundred years, 1800 to 1900, the production of cotton in the United States has increased from, approximately, 80,000 to 9,345,391 bales, 500-pound standard.

The art of pressing cotton has presented to inventors unusual difficulties. Among the recent and more economic methods of baling cotton is the introduction of a bale of uniform size and weight, and possessing greater density. With many of those who advocate

the square bale there is a belief that the density of that package may be so increased as to avoid the present necessity of recompression. Already inventions have been made promising this result, but none have as yet come into general use. The present accepted square bale of commerce is 54 inches in length, varying in breadth from 24 to 27 inches, and pressed down to a thickness of 28 to 30 inches.

Out of the efforts to devise superior systems of preparing lint cotton for market have come a great number of inventions for producing packages of various shapes and weights. But of the scores of presses invented during the past five years for baling cotton in cylindrical form, there have been only two put into practical operation. One of these is called the Bessonette, or Round Lap system. By this system, the lint, as it comes from the gin, is blown into a storage reservoir and bat former, where it is converted into a continuous bat of even thickness, and wound around a cone under a pressure which, light at first, is gradually increased automatically by two rollers operating at opposite sides, until the bale attains its full density. By this steady exertion of an even pressure gradually applied to all the cotton in detail, bales are produced 22 inches in diameter, and 35 and 48 inches in length, weighing on an average 270 and 425 pounds, respectively. The bales require no further compression, as they possess a density of 35 pounds per cubic foot as compared with a density of 22.5 pounds in the old compressed square bale. This package is self-containing, holding its form and density by adhesion of fiber to fiber and layer to layer, thus avoiding the necessity of iron bands to preserve its shape. The first round lap bale press was set up in the United States in 1894. Its product was much heavier than the present bale, reaching as great a weight as 500 pounds.

The other round bale press which has come into practical use is known as the Lowry system, and consists in feeding the lint cotton loose from the gin into a tube surrounded by a cap plate with a number of slots therein radiating from the center to the circumference. The bale is first started in the tube by packing cotton therein by hand. When this is done, and a relative revolution of the cap plate and tube is established, the loose cotton thrown on top comes in contact with that inside the tube and is drawn in through the slots, and the bale is thus built up endwise. In the Bessonette system, pressure is applied from end to end of the bale at two points along the outside circumference, while in the Lowry system pressure is applied only to the end of the bale. The bale turned out by the Lowry press, in its earlier history, like that of the Bessonette press, reached a weight of 500 pounds, but with this press also there has been a gradual tendency toward the lighter-weight package, until at this time the average weight of the bale of its new pattern is but 250 pounds. The bale is of uniform size, 18 inches in

diameter and 36 inches in length, and possesses a density of about 45 pounds per cubic foot, against 22.5 pounds attained in the compressed square bale.

It is interesting to note that this press is being advantageously employed for baling hay and other fibrous

commodities. There have also been other more or less successful experiments in ginning cotton with the device, converting the press into a roller gin. Its successful cotton-packing history may be said to be confined to the past three seasons.

TABLE 8.—QUANTITY OF COTTON GINNED FROM CROPS GROWN IN 1899, 1900, AND 1901, BY STATES AND COUNTIES.

ALABAMA.

COUNTIES.	CROP OF 1899.					CROP OF 1900.					CROP OF 1901.				
	Commercial bales.				Equiva- lent 500- pound bales.	Commercial bales.				Equiva- lent 500- pound bales.	Commercial bales.				Equiva- lent 500- pound bales.
	Total.	Square.	Round.	Sea Island.		Total.	Square.	Round.	Sea Island.		Total.	Square.	Round.	Sea Island.	
The State.....	1,103,690	1,069,644	34,046	.....	1,078,519	1,061,678	995,602	66,076	.....	1,023,802	1,156,812	1,068,072	87,840	.....	1,101,227
Autauga.....	18,555	12,521	1,034	.....	13,210	12,185	11,981	154	.....	12,101	15,334	15,053	281	.....	14,773
Baldwin.....	509	509	.....	.....	511	301	301	.....	306	476	476	.....	.....	.....	482
Barbour.....	32,622	32,622	.....	.....	32,603	29,141	27,649	1,492	.....	28,115	28,678	27,678	1,000	.....	27,773
Bibb.....	5,418	5,418	.....	.....	5,515	5,340	5,340	.....	5,467	6,710	6,710	.....	.....	.....	6,616
Blount.....	11,443	11,443	.....	.....	11,295	12,155	12,155	.....	11,987	12,255	12,255	.....	.....	.....	11,936
Bullock.....	33,126	33,126	.....	.....	33,161	30,313	27,059	3,254	.....	28,898	27,555	25,293	2,262	.....	26,667
Butler.....	20,793	14,970	5,814	.....	18,273	19,518	13,644	5,974	.....	16,824	23,172	16,292	6,880	.....	20,102
Calhoun.....	13,870	13,870	.....	.....	13,585	12,995	12,995	.....	12,837	18,737	18,737	.....	.....	.....	18,374
Chambers.....	34,127	34,127	.....	.....	34,015	30,252	30,252	.....	28,092	33,326	33,326	.....	.....	.....	31,902
Cherokee.....	14,492	14,492	.....	.....	14,072	14,115	14,115	.....	13,460	13,351	13,351	.....	.....	.....	13,353
Chilton.....	10,036	10,036	.....	.....	10,085	12,008	12,008	.....	12,080	15,560	15,226	334	.....	.....	16,290
Choctaw.....	12,181	12,181	.....	.....	12,193	11,374	11,374	.....	11,374	13,193	13,193	.....	.....	.....	13,353
Clarke.....	13,112	13,112	.....	.....	13,123	16,085	16,085	.....	16,159	17,463	17,463	.....	.....	.....	17,421
Clay.....	10,819	10,819	.....	.....	10,901	11,874	11,874	.....	11,375	12,147	12,147	.....	.....	.....	11,422
Cleburne.....	5,513	5,513	.....	.....	4,948	6,161	6,161	.....	5,680	6,834	6,834	.....	.....	.....	6,099
Coffee.....	18,646	18,646	.....	.....	18,409	18,870	17,897	978	.....	17,951	18,901	18,898	3	.....	17,821
Colbert.....	10,272	7,782	2,540	.....	9,284	10,394	8,001	2,393	.....	9,447	10,309	9,158	1,151	.....	10,056
Conecuh.....	9,070	9,070	.....	.....	9,085	10,383	8,881	1,502	.....	9,741	13,622	10,598	3,024	.....	12,474
Coosa.....	12,855	12,855	.....	.....	11,868	12,762	12,762	.....	12,210	14,457	14,457	.....	.....	.....	13,713
Covington.....	6,310	6,310	.....	.....	6,119	4,949	4,244	705	.....	4,484	5,886	5,886	1,651	.....	6,719
Crenshaw.....	17,963	17,963	.....	.....	17,953	18,241	17,473	768	.....	17,811	20,578	19,078	1,500	.....	19,833
Cullman.....	9,248	7,247	2,001	.....	8,135	10,851	8,747	2,104	.....	9,768	13,881	10,093	3,788	.....	11,823
Dale.....	17,002	17,002	.....	.....	16,070	15,702	15,702	.....	15,042	18,439	18,439	.....	.....	.....	18,051
Dallas.....	43,850	43,850	.....	.....	43,503	42,208	42,208	.....	42,208	38,299	38,299	.....	.....	.....	33,969
Dekalb.....	10,358	10,358	.....	.....	9,915	12,133	12,133	.....	11,615	12,800	12,800	.....	.....	.....	12,078
Elmore.....	17,142	17,142	.....	.....	16,862	18,561	18,561	.....	18,272	22,916	22,916	.....	.....	.....	22,285
Escambia.....	540	540	.....	.....	547	930	930	.....	921	2,125	2,125	.....	.....	.....	2,102
Etowah.....	11,058	11,058	.....	.....	10,967	11,185	11,185	.....	10,789	12,928	12,928	.....	.....	.....	13,104
Fayette.....	7,883	7,883	.....	.....	7,684	5,859	5,859	.....	5,911	7,684	7,684	.....	.....	.....	7,589
Franklin.....	6,506	6,506	.....	.....	6,553	8,129	8,129	.....	8,173	7,797	7,797	.....	.....	.....	7,833
Geneva.....	9,587	9,587	.....	.....	9,287	8,520	8,520	.....	8,294	12,588	12,588	.....	.....	.....	12,210
Greene.....	21,661	20,161	1,500	.....	20,664	14,118	13,891	227	.....	13,620	21,475	21,475	.....	.....	20,163
Hale.....	27,601	27,601	.....	.....	27,430	27,424	27,424	.....	27,225	24,671	24,671	2,347	.....	.....	23,493
Henry.....	26,287	26,287	.....	.....	26,068	25,510	28,105	2,405	.....	24,060	29,754	27,393	2,371	.....	27,825
Jackson.....	5,202	5,202	.....	.....	5,166	7,009	7,009	.....	7,097	6,945	6,945	.....	.....	.....	7,017
Jefferson.....	7,303	7,303	.....	.....	7,324	6,965	6,965	.....	7,005	7,716	7,716	.....	.....	.....	7,627
Lamar.....	11,722	11,722	.....	.....	11,502	8,622	8,622	.....	8,622	10,530	10,530	.....	.....	.....	10,553
Lauderdale.....	9,567	9,567	.....	.....	9,432	10,959	9,141	1,818	.....	10,048	12,056	10,763	2,308	.....	10,742
Lawrence.....	14,358	11,903	2,455	.....	13,314	16,092	12,762	3,330	.....	14,872	18,594	9,959	3,635	.....	11,944
Lee.....	23,458	23,458	.....	.....	23,084	26,149	26,149	.....	25,957	30,610	30,610	.....	.....	.....	30,012
Limestone.....	13,799	12,798	1,001	.....	13,538	16,457	14,491	1,966	.....	16,088	16,360	15,185	1,175	.....	16,087
Lowndes.....	37,556	35,106	2,450	.....	36,478	36,023	30,534	5,489	.....	33,854	35,229	28,468	6,761	.....	31,624
Macon.....	21,565	21,185	380	.....	21,245	21,045	20,025	1,020	.....	20,362	23,595	21,143	2,452	.....	22,171
Madison.....	16,692	13,790	2,902	.....	15,824	20,285	15,923	4,362	.....	18,906	23,962	18,278	5,684	.....	21,657
Marengo.....	34,437	32,254	2,183	.....	32,911	32,460	28,170	4,290	.....	30,957	31,981	25,481	6,500	.....	29,495
Marion.....	5,805	5,805	.....	.....	5,832	5,378	5,378	.....	5,454	6,910	6,910	.....	.....	.....	7,005
Marshall.....	13,795	13,795	.....	.....	13,284	16,808	16,808	.....	16,090	18,293	14,475	3,818	.....	.....	15,236
Mobile.....	360	360	.....	.....	360	20	20	.....	20	2,924	60	2,864	.....	.....	1,572
Monroe.....	17,214	17,214	.....	.....	18,475	15,837	15,837	.....	16,206	19,354	19,354	.....	.....	.....	19,837
Montgomery.....	43,158	38,403	4,750	.....	41,183	47,002	32,760	14,262	.....	40,717	45,190	38,079	12,111	.....	40,259
Morgan.....	10,578	8,342	2,236	.....	10,370	12,822	9,200	3,622	.....	12,465	13,316	10,811	2,505	.....	12,211
Perry.....	30,990	30,990	.....	.....	31,566	27,321	27,321	.....	27,849	25,844	24,184	1,660	.....	.....	25,514
Pickens.....	19,230	19,230	.....	.....	19,227	17,443	17,443	.....	17,307	18,172	18,172	.....	.....	.....	17,546
Pike.....	34,768	34,768	.....	.....	34,927	27,388	25,673	1,710	.....	26,756	23,715	26,914	2,801	.....	23,270
Randolph.....	18,088	18,088	.....	.....	16,866	17,943	17,943	.....	16,909	18,326	18,326	.....	.....	.....	16,639
Russell.....	23,725	23,725	.....	.....	23,335	23,964	23,739	225	.....	23,291	24,495	24,495	.....	.....	23,852
St. Clair.....	9,605	9,605	.....	.....	9,408	10,128	10,128	.....	10,031	9,896	9,896	.....	.....	.....	9,744
Shelby.....	11,628	11,628	.....	.....	11,604	9,510	9,510	.....	9,535	11,542	10,484	1,058	.....	.....	11,015
Sumter.....	32,994	32,994	.....	.....	32,392	20,475	20,475	.....	20,726	23,123	23,123	.....	.....	.....	23,006
Talladega.....	26,746	26,746	.....	.....	24,478	22,501	22,501	.....	22,014	27,910	27,128	782	.....	.....	26,612
Tallapoosa.....	28,323	28,323	.....	.....	27,188	28,034	28,034	.....	26,951	31,001	31,001	.....	.....	.....	29,485
Tuscaloosa.....	19,573	16,773	2,800	.....	18,288	14,626	13,201	1,365	.....	14,149	21,599	18,560	3,039	.....	20,493
Walker.....	5,207	5,207	.....	.....	5,200	4,520	4,520	.....	4,592	5,051	5,051	.....	.....	.....	5,094
Washington.....	1,793	1,793	.....	.....	1,820	1,786	1,786	.....	1,793	1,951	1,951	.....	.....	.....	1,869
Wilcox.....	34,690	34,690	.....	.....	34,725	32,154	31,448	706	.....	31,946	23,700	26,600	2,100	.....	27,825
Winston.....	4,826	4,826	.....	.....	4,781	3,463	3,463	.....	3,086	5,375	5,375	.....	.....	.....	5,060

# COTTON GINNING.

TABLE 8.—QUANTITY OF COTTON GINNED FROM CROPS GROWN IN 1899, 1900, AND 1901, BY STATES AND COUNTIES—  
Continued.

## ARKANSAS.

COUNTIES.	CROP OF 1899.				CROP OF 1900.				CROP OF 1901.				Equiva- lent 500- pound bales.		
	Commercial bales.				Commercial bales.				Commercial bales.						
	Total.	Square.	Round.	Sea island.	Total.	Square.	Round.	Sea island.	Total.	Square.	Round.	Sea island.			
The State.....	719,453	685,570	33,883	.....	705,583	828,820	773,247	55,573	.....	812,984	738,080	686,903	51,177	.....	718,318
Arkansas .....	8,014	8,014	.....	.....	8,057	7,207	7,207	.....	.....	7,337	4,799	4,799	.....	.....	4,858
Ashley .....	26,790	23,207	3,583	.....	25,037	21,925	18,621	3,304	.....	20,787	23,126	20,065	3,061	.....	22,402
Baxter .....	1,891	1,891	.....	.....	1,922	2,393	2,393	.....	.....	2,443	1,560	1,560	.....	.....	1,563
Boone .....	585	585	.....	.....	587	629	629	.....	.....	649	846	846	.....	.....	845
Bradley .....	4,360	4,360	.....	.....	4,336	4,641	4,641	.....	.....	4,686	5,256	5,256	.....	.....	5,198
Calhoun .....	3,853	3,853	.....	.....	3,815	4,454	4,454	.....	.....	4,330	4,406	4,406	.....	.....	4,300
Chicot .....	25,832	25,832	.....	.....	23,859	24,368	24,294	69	.....	24,247	24,399	24,399	.....	.....	24,305
Clark .....	10,330	10,330	.....	.....	10,375	15,352	15,352	.....	.....	15,642	15,276	15,276	.....	.....	15,402
Clay .....	5,580	3,681	1,899	.....	4,739	6,988	4,826	2,162	.....	6,182	5,305	4,321	984	.....	4,869
Cleburne .....	3,846	3,846	.....	.....	3,830	4,608	4,608	.....	.....	4,696	2,919	2,919	.....	.....	2,949
Cleveland .....	4,754	4,754	.....	.....	4,637	6,978	6,978	.....	.....	6,840	4,716	4,716	.....	.....	4,595
Columbia .....	18,370	18,370	.....	.....	18,216	23,199	23,199	.....	.....	22,674	19,708	19,708	.....	.....	19,471
Conway .....	16,790	10,330	4,673	.....	14,671	23,080	17,218	10,812	.....	22,591	18,838	12,880	5,958	.....	16,352
Craighead .....	4,889	4,889	.....	.....	4,931	5,833	5,833	.....	.....	5,987	5,131	5,131	.....	.....	5,200
Crawford .....	9,326	9,326	.....	.....	9,439	16,484	16,484	.....	.....	16,992	19,091	19,091	.....	.....	19,350
Crittenden .....	22,943	22,943	.....	.....	22,773	20,333	20,333	.....	.....	20,561	17,609	17,609	.....	.....	17,447
Cross .....	4,407	4,407	.....	.....	4,430	4,687	4,687	.....	.....	4,738	4,030	4,030	.....	.....	4,065
Dallas .....	4,586	4,586	.....	.....	4,512	5,735	5,735	.....	.....	5,701	4,464	4,464	.....	.....	4,418
Desha .....	18,857	18,857	.....	.....	19,196	17,399	17,399	.....	.....	17,521	17,294	17,294	.....	.....	17,544
Drew .....	15,252	15,252	.....	.....	14,955	18,123	17,346	777	.....	17,810	13,798	13,798	.....	.....	13,606
Faulkner .....	16,220	15,024	1,196	.....	15,909	18,013	17,325	688	.....	18,109	13,716	13,716	620	.....	14,090
Franklin .....	8,009	8,009	.....	.....	8,097	11,352	11,352	.....	.....	11,606	13,235	13,235	.....	.....	13,424
Fulton .....	1,860	1,860	.....	.....	1,863	2,233	2,233	.....	.....	2,268	1,188	1,188	.....	.....	1,170
Garland .....	700	700	.....	.....	681	1,303	1,303	.....	.....	1,302	953	953	.....	.....	958
Grant .....	2,590	2,590	.....	.....	2,495	3,233	3,233	.....	.....	3,170	3,353	3,353	.....	.....	3,162
Greene .....	2,961	2,961	.....	.....	3,017	5,670	5,670	.....	.....	5,743	5,066	5,066	.....	.....	5,213
Hempstead .....	16,431	16,431	.....	.....	16,459	21,324	21,324	.....	.....	21,595	19,698	19,698	.....	.....	19,937
Hot Spring .....	3,678	3,678	.....	.....	3,615	4,177	4,177	.....	.....	4,193	4,888	4,888	.....	.....	4,903
Howard .....	8,659	8,659	.....	.....	8,696	10,346	10,346	.....	.....	10,404	10,304	10,304	.....	.....	10,463
Independence .....	13,873	13,883	190	.....	13,915	13,155	12,202	953	.....	12,947	8,181	7,794	387	.....	7,990
Izard .....	4,848	4,848	.....	.....	4,859	5,626	5,626	.....	.....	5,717	3,336	3,336	.....	.....	3,330
Jackson .....	18,301	18,051	250	.....	18,346	18,570	15,715	2,855	.....	17,541	16,250	13,454	2,796	.....	15,088
Jefferson .....	43,392	43,072	320	.....	43,320	45,225	45,225	.....	.....	45,743	42,462	39,062	3,400	.....	41,137
Johnson .....	7,021	7,021	.....	.....	7,001	10,700	10,700	.....	.....	10,910	10,502	10,502	.....	.....	10,543
Lafayette .....	8,153	8,153	.....	.....	8,185	9,521	9,521	.....	.....	9,637	8,991	8,991	.....	.....	8,913
Lawrence .....	7,576	5,574	2,002	.....	6,775	9,389	6,348	3,041	.....	8,243	11,580	6,989	4,591	.....	9,817
Lee .....	21,635	21,249	386	.....	22,017	20,911	20,057	854	.....	21,517	18,185	17,244	941	.....	18,091
Lincoln .....	16,076	16,076	.....	.....	16,029	16,975	16,975	.....	.....	17,120	13,255	13,255	.....	.....	13,246
Little River .....	10,627	10,627	.....	.....	10,804	14,997	14,997	.....	.....	14,989	14,270	14,270	.....	.....	14,326
Logan .....	9,168	9,168	.....	.....	9,272	13,696	13,696	.....	.....	13,994	14,392	14,392	.....	.....	14,532
Lonoke .....	25,830	19,303	6,527	.....	23,172	34,004	20,585	13,419	.....	28,348	30,041	18,810	11,231	.....	24,975
Marion .....	2,049	2,049	.....	.....	2,091	2,386	2,386	.....	.....	2,447	1,461	1,461	.....	.....	1,481
Miller .....	9,163	9,163	.....	.....	9,158	11,178	11,178	.....	.....	11,239	7,898	7,898	.....	.....	7,833
Mississippi .....	20,506	19,406	1,100	.....	20,566	19,865	19,721	144	.....	20,268	20,243	20,243	.....	.....	20,110
Monroe .....	16,244	13,823	2,421	.....	15,171	18,855	16,655	2,200	.....	16,905	13,589	8,336	4,703	.....	11,562
Montgomery .....	2,391	2,391	.....	.....	2,357	3,811	3,811	.....	.....	3,850	4,626	4,626	.....	.....	4,642
Nevada .....	10,232	10,232	.....	.....	10,102	14,504	14,435	69	.....	14,446	12,542	12,342	200	.....	12,282
Newton .....	577	577	.....	.....	578	1,294	1,294	.....	.....	1,340	568	568	.....	.....	523
Onachita .....	7,776	7,776	.....	.....	7,651	8,361	8,361	.....	.....	8,327	7,529	7,529	.....	.....	7,347
Perry .....	5,473	5,473	.....	.....	5,549	5,505	5,505	.....	.....	5,666	4,540	4,540	.....	.....	4,512
Phillips .....	33,554	33,502	52	.....	33,560	28,537	28,537	.....	.....	28,819	22,453	22,453	.....	.....	22,727
Pike .....	5,013	5,013	.....	.....	5,049	6,295	6,295	.....	.....	6,408	5,904	5,904	.....	.....	6,046
Poinsett .....	2,303	2,303	.....	.....	2,344	1,332	1,332	.....	.....	1,443	1,183	1,183	.....	.....	1,197
Polk .....	1,163	1,163	.....	.....	1,155	1,670	1,670	.....	.....	1,697	1,385	1,385	.....	.....	1,377
Pope .....	11,000	11,000	.....	.....	11,290	15,421	15,421	.....	.....	16,090	12,859	12,859	.....	.....	13,217
Prairie .....	6,791	6,791	.....	.....	6,962	7,201	7,201	.....	.....	7,394	5,588	5,588	.....	.....	5,609
Pulaski .....	20,684	20,684	.....	.....	20,737	24,109	24,109	.....	.....	23,990	22,754	22,754	.....	.....	22,735
Randolph .....	2,963	2,963	.....	.....	3,035	4,949	4,251	698	.....	4,820	5,026	4,368	668	.....	4,756
St. Francis .....	15,028	15,028	.....	.....	15,202	13,444	11,274	2,170	.....	12,789	10,771	8,184	2,587	.....	9,643
Saline .....	3,634	3,634	.....	.....	3,646	5,170	5,170	.....	.....	5,210	6,178	6,178	.....	.....	6,176
Scott .....	3,492	3,492	.....	.....	3,491	5,935	5,935	.....	.....	6,144	6,069	6,069	.....	.....	6,786
Searcy .....	1,519	1,519	.....	.....	1,517	2,515	2,515	.....	.....	2,547	1,191	1,191	.....	.....	1,192
Sebastian .....	6,828	6,828	.....	.....	6,936	9,329	9,329	.....	.....	9,673	12,611	12,611	.....	.....	12,851
Sevier .....	7,024	7,024	.....	.....	7,042	8,094	8,094	.....	.....	8,197	7,262	7,262	.....	.....	7,305
Sharp .....	3,579	3,579	.....	.....	3,573	3,117	3,117	.....	.....	3,161	2,461	2,461	.....	.....	2,456
Stone .....	2,034	2,029	5	.....	2,027	2,054	2,054	.....	.....	2,065	1,128	1,128	.....	.....	1,117
Union .....	14,420	14,420	.....	.....	12,300	15,712	15,712	.....	.....	15,634	14,382	14,382	.....	.....	14,246
Van Buren .....	3,122	3,122	.....	.....	3,201	3,478	3,478	.....	.....	3,603	2,605	2,605	.....	.....	2,664
White .....	11,714	11,869	845	.....	11,495	12,377	12,377	.....	.....	12,647	9,615	9,615	.....	.....	9,597
Woodruff .....	19,741	11,404	8,337	.....	16,155	21,980	12,216	9,764	.....	18,133	15,789	7,781	8,003	.....	11,722
Yell .....	12,573	11,976	597	.....	12,299	20,518	18,924	1,594	.....	20,472	20,701	19,301	900	.....	20,493

MANUFACTURES.

TABLE 8.—QUANTITY OF COTTON GINNED FROM CROPS GROWN IN 1899, 1900, AND 1901, BY STATES AND COUNTIES—  
Continued.

FLORIDA.

COUNTIES.	CROP OF 1899.				CROP OF 1900.					CROP OF 1901.				Equiva- lent 500- pound bales.	
	Commercial bales.				Equiva- lent 500- pound bales.	Commercial bales				Equiva- lent 500- pound bales.	Commercial bales.				
	Total.	Square.	Round.	Sea Island.		Total.	Square.	Round.	Sea Island.		Total.	Square.	Round.		Sea Island.
The State.....	56,821	25,583	.....	31,288	49,359	55,696	27,630	.....	28,066	48,616	57,144	29,379	.....	27,765	49,921
Alachua.....	5,643	775	.....	4,868	4,501	6,070	.....	6,070	4,671	6,920	.....	.....	.....	6,920	5,199
Baker.....	985	.....	.....	985	741	569	.....	569	425	891	.....	.....	.....	891	651
Bradford.....	3,793	.....	.....	3,793	2,733	3,773	.....	3,773	2,701	2,902	.....	.....	.....	2,902	2,245
Calhoun.....	199	159	.....	40	191	261	236	.....	25	375	.....	350	.....	25	368
Columbia.....	4,490	.....	.....	4,490	3,509	2,555	.....	2,555	2,218	2,486	.....	.....	.....	2,486	1,935
Escambia.....	125	125	.....	125	103	103	.....	103	103	123	.....	123	.....	123	121
Gadsden.....	636	404	.....	232	549	801	648	.....	156	723	1,243	1,120	.....	123	1,145
Hamilton.....	2,978	.....	.....	2,978	2,278	2,983	.....	2,983	2,265	2,265	.....	.....	.....	1,265	1,957
Holmes.....	411	373	.....	88	407	513	483	.....	30	505	.....	650	.....	25	659
Jackson.....	9,366	8,862	.....	504	9,387	9,491	9,188	.....	803	9,564	12,575	12,200	.....	375	12,399
Jefferson.....	5,844	5,424	.....	420	5,637	6,065	5,827	.....	238	5,837	5,771	5,870	.....	201	5,411
Lafayette.....	421	.....	.....	421	321	256	.....	256	205	150	.....	.....	.....	150	115
Leon.....	6,184	6,184	.....	.....	5,965	5,965	.....	.....	5,805	5,728	.....	5,728	.....	.....	5,510
Levy.....	112	.....	.....	112	78	825	.....	825	600	645	.....	.....	.....	645	397
Madison.....	11,077	2,094	.....	8,983	9,046	9,099	3,458	.....	5,641	7,687	9,322	1,360	.....	8,462	7,321
Marion.....	339	3	.....	336	251	581	20	.....	511	495	.....	25	.....	470	377
Nassau.....	10	.....	.....	10	8	16	.....	16	13	81	.....	.....	.....	81	24
Putnam.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	35	.....	.....	.....	35	22
Santa Rosa.....	24	24	.....	.....	22	95	95	.....	.....	165	.....	165	.....	85	161
Suwanee.....	2,860	.....	.....	2,860	2,294	3,145	.....	3,145	2,612	2,149	.....	.....	.....	2,149	1,711
Taylor.....	168	.....	.....	168	135	720	.....	720	576	460	.....	.....	.....	460	362
Wakulla.....	20	20	.....	.....	18	107	107	.....	96	292	.....	102	.....	100	249
Walton.....	497	497	.....	.....	496	659	659	.....	618	754	.....	754	.....	.....	748
Washington.....	689	689	.....	649	791	791	.....	791	791	1,225	.....	.....	.....	.....	1,288

GEORGIA.

The State.....	1,296,844	1,220,117	18,915	57,812	1,231,060	1,270,597	1,191,125	27,393	52,079	1,203,806	1,405,092	1,300,125	62,470	42,497	1,314,881
Appling.....	4,046	268	.....	3,778	3,160	2,800	572	.....	2,228	2,196	2,557	.....	.....	.....	2,034
Baker.....	4,039	4,039	.....	.....	3,938	3,419	.....	.....	.....	3,260	4,478	.....	.....	1,913	4,407
Baldwin.....	10,119	10,119	.....	.....	9,666	6,524	3,419	.....	.....	6,185	10,708	10,210	408	.....	10,116
Banks.....	8,791	8,791	.....	.....	7,915	9,704	406	.....	.....	8,839	9,382	.....	.....	.....	8,399
Bartow.....	12,802	12,802	.....	.....	12,540	12,930	.....	.....	.....	12,672	16,672	12,778	3,894	.....	14,288
Berrien.....	6,086	1,142	.....	4,944	4,985	6,961	1,318	.....	5,643	5,660	6,878	2,498	.....	4,380	5,519
Bibb.....	6,568	6,568	.....	.....	6,475	6,033	.....	.....	.....	5,914	8,095	8,095	.....	.....	8,271
Brooks.....	8,731	6,396	.....	2,335	8,241	7,675	.....	.....	2,803	7,064	8,743	6,461	.....	2,282	8,198
Bryan.....	479	227	.....	252	393	504	.....	.....	167	452	762	695	.....	67	633
Bulloch.....	9,792	1,924	.....	7,868	8,132	7,470	1,963	.....	5,607	6,267	6,999	2,471	.....	4,528	5,928
Burke.....	46,152	43,327	2,650	175	44,269	37,881	33,025	4,112	144	33,987	35,740	29,881	5,829	30	31,563
Butts.....	14,415	14,415	.....	.....	14,369	13,761	13,761	.....	.....	13,318	18,045	18,045	.....	.....	17,785
Calhoun.....	9,472	9,472	.....	.....	9,312	13,420	13,420	.....	.....	13,323	12,121	12,121	.....	.....	12,059
Campbell.....	9,614	9,614	.....	.....	9,192	9,556	.....	.....	.....	9,226	9,166	9,166	.....	.....	8,802
Carroll.....	28,504	26,715	1,789	.....	25,747	28,055	20,139	1,916	.....	25,117	30,638	29,278	1,405	.....	27,116
Catoosa.....	810	810	.....	.....	680	1,133	1,133	.....	.....	1,034	947	947	.....	.....	821
Charlton.....	302	.....	.....	302	242	305	.....	.....	.....	163	86	.....	.....	86	67
Chattahochee.....	5,039	5,039	.....	.....	4,970	5,317	.....	.....	205	5,185	4,846	4,846	.....	.....	4,739
Chattahoochee.....	7,079	7,079	.....	.....	6,451	6,772	.....	.....	.....	6,119	7,517	7,517	.....	.....	6,917
Chattoga.....	6,760	6,760	.....	.....	5,922	6,935	.....	.....	.....	6,133	8,208	8,208	.....	.....	7,157
Clarke.....	3,532	3,532	.....	.....	3,119	6,683	6,683	.....	.....	6,347	8,083	8,083	.....	.....	7,607
Clay.....	9,345	9,345	.....	.....	9,360	7,834	7,834	.....	.....	7,843	9,063	9,013	.....	50	9,024
Clayton.....	8,079	8,079	.....	.....	7,851	8,657	8,657	.....	.....	8,407	10,591	10,591	.....	.....	10,195
Clinch.....	592	.....	.....	592	462	950	.....	.....	.....	716	592	.....	.....	592	423
Cobb.....	14,979	14,979	.....	.....	13,379	14,047	14,047	.....	960	12,752	15,191	15,191	.....	.....	13,155
Coffee.....	3,369	19	.....	3,350	2,801	4,369	558	.....	.....	3,540	5,196	.....	.....	.....	4,137
Colquitt.....	4,347	1,785	.....	2,562	3,625	5,436	3,091	.....	3,811	4,578	5,365	3,618	.....	4,253	4,704
Columbia.....	9,354	9,354	.....	.....	9,134	7,612	.....	.....	2,345	7,323	8,363	8,363	.....	1,847	8,090
Coweta.....	24,680	23,480	1,200	.....	23,700	21,456	20,306	1,150	.....	20,211	27,818	26,332	1,486	.....	26,367
Crawford.....	7,158	7,158	.....	.....	7,177	7,319	7,319	.....	.....	7,289	7,423	7,423	.....	.....	7,290
Dawson.....	1,297	1,297	.....	.....	1,123	1,084	1,084	.....	.....	988	1,362	1,362	.....	.....	1,185
Decatur.....	4,891	4,551	.....	340	4,691	5,578	5,106	.....	.....	5,161	7,404	6,951	.....	453	6,834
DeKalb.....	6,981	6,981	.....	.....	6,370	6,716	6,716	.....	.....	6,197	9,493	9,493	.....	.....	8,662
Dodge.....	10,729	10,729	.....	.....	10,705	11,510	11,510	.....	.....	11,447	13,011	13,011	.....	.....	13,009
Dooley.....	18,573	18,573	.....	.....	18,465	23,122	21,424	1,698	.....	22,141	24,866	20,014	4,852	.....	22,126
Dougherty.....	12,835	12,493	.....	342	13,395	17,027	17,027	.....	.....	16,251	15,259	15,259	.....	.....	14,808
Douglas.....	8,091	8,091	.....	.....	7,216	7,216	7,216	.....	.....	6,478	6,436	6,436	.....	.....	5,732
Early.....	6,302	6,302	.....	.....	6,352	7,585	7,585	.....	.....	7,645	9,415	9,415	.....	.....	9,577
Echols.....	795	.....	.....	795	618	418	.....	.....	.....	319	407	.....	.....	407	320
Effingham.....	429	429	.....	.....	422	683	683	.....	418	669	857	.....	.....	.....	803
Elbert.....	14,945	14,580	365	.....	12,688	13,510	13,510	.....	.....	11,793	16,425	15,710	715	.....	14,210
Emanuel.....	13,587	9,525	.....	4,062	11,845	18,530	9,993	.....	.....	12,159	12,020	10,796	.....	.....	10,835
Fayette.....	9,449	9,449	.....	.....	9,476	9,502	9,502	.....	3,627	9,884	11,133	11,133	.....	1,224	10,769
Floyd.....	11,864	10,532	1,332	.....	10,787	12,721	11,321	1,400	.....	11,655	12,831	11,631	1,200	.....	11,678
Forsyth.....	7,449	7,449	.....	.....	6,389	7,656	7,656	.....	.....	6,782	7,601	7,601	.....	.....	6,561
Franklin.....	13,988	13,971	.....	.....	12,809	14,222	14,222	.....	.....	13,069	14,771	14,471	300	.....	12,175
Fulton.....	1,604	1,604	.....	.....	1,958	1,377	1,377	.....	.....	1,272	1,041	1,041	.....	.....	935
Glascock.....	3,902	3,902	.....	.....	3,879	2,272	2,272	.....	62	2,197	2,956	2,956	.....	.....	2,920
Gordon.....	6,609	6,609	.....	.....	6,292	6,179	6,179	.....	.....	5,877	7,587	7,587	.....	.....	7,303
Gre															

COTTON GINNING.

TABLE 8.—QUANTITY OF COTTON GINNED FROM CROPS GROWN IN 1899, 1900, AND 1901, BY STATES AND COUNTIES—Continued.

GEORGIA—Continued.

COUNTIES.	CROP OF 1899.				Equiva- lent 500- pound bales.	CROP OF 1900.				Equiva- lent 500- pound bales.	CROP OF 1901.				Equiva- lent 500- pound bales.
	Commercial bales.					Commercial bales.					Commercial bales.				
	Total.	Square.	Round.	Sea island.		Total.	Square.	Round.	Sea island.		Total.	Square.	Round.	Sea island.	
Gwinnett.....	17,667	17,559	108	.....	15,736	18,604	17,444	1,160	.....	16,634	22,127	20,127	2,000	.....	19,354
Habersham.....	1,485	1,485	.....	.....	1,278	1,834	1,834	.....	.....	1,660	1,603	1,603	.....	.....	1,409
Hall.....	9,586	9,586	.....	.....	8,378	11,469	11,469	.....	.....	10,243	11,632	11,632	.....	.....	9,846
Hancock.....	14,371	13,888	483	.....	13,719	16,001	15,112	889	.....	15,052	13,069	12,107	962	.....	12,162
Harrison.....	5,597	5,597	.....	.....	4,817	6,159	6,159	.....	.....	6,261	6,928	6,928	.....	.....	6,187
Harris.....	22,852	21,830	1,522	.....	22,008	22,484	19,315	3,169	.....	20,749	23,343	21,033	2,310	.....	21,864
Hart.....	12,519	12,421	98	.....	11,261	12,170	12,170	.....	.....	11,180	11,738	11,738	.....	.....	10,801
Heard.....	13,422	13,422	.....	.....	12,996	10,966	10,966	.....	.....	10,531	11,305	11,305	.....	.....	10,727
Henry.....	20,056	19,850	200	.....	19,408	19,975	19,975	.....	.....	19,421	22,392	22,392	.....	.....	21,462
Houston.....	20,782	20,782	.....	.....	20,727	21,537	21,345	192	.....	21,375	22,696	21,508	1,193	.....	21,961
Irwin.....	2,929	1,891	.....	1,038	2,665	3,450	2,276	.....	1,174	3,296	6,163	5,551	.....	612	5,907
Jackson.....	22,366	22,816	50	.....	20,379	25,003	25,003	.....	.....	22,904	25,006	25,006	.....	.....	22,909
Jasper.....	15,320	15,320	.....	.....	15,189	16,517	16,517	.....	.....	16,359	19,308	17,968	1,340	.....	18,243
Jefferson.....	21,182	21,182	.....	.....	19,887	15,622	15,423	199	.....	14,416	18,713	18,140	573	.....	17,390
Johnson.....	8,336	8,336	.....	.....	8,016	6,907	6,708	.....	.....	6,403	7,403	5,700	1,703	.....	6,361
Jones.....	11,130	11,130	.....	.....	11,165	10,358	10,358	.....	.....	11,340	11,995	11,995	.....	.....	11,855
Laurens.....	22,080	21,380	700	.....	21,238	18,526	18,167	304	55	18,058	23,308	21,917	1,291	190	23,814
Lee.....	8,654	8,654	.....	.....	8,195	7,968	7,968	.....	.....	7,486	8,480	8,370	110	.....	8,137
Liberty.....	450	80	.....	420	360	271	118	.....	158	209	630	337	.....	293	510
Lincoln.....	5,132	5,132	.....	.....	5,053	6,606	6,606	.....	.....	6,537	7,758	7,758	.....	.....	7,683
Lowndes.....	7,691	114	.....	7,577	6,162	5,853	404	.....	5,449	4,799	5,504	819	.....	4,685	4,507
Lumpkin.....	75	75	.....	.....	58	144	144	.....	.....	115	111	111	.....	.....	92
McDuffie.....	8,635	6,901	1,734	.....	7,678	6,821	6,480	341	.....	6,612	6,991	6,693	298	.....	6,812
Macon.....	16,713	16,713	.....	.....	16,761	14,977	14,977	.....	.....	14,995	16,660	16,660	.....	.....	17,085
Madison.....	11,443	11,443	.....	.....	10,259	12,034	12,034	.....	.....	10,990	13,556	13,556	.....	.....	12,340
Marion.....	9,681	9,681	.....	.....	9,336	6,886	6,886	.....	.....	6,692	8,257	8,257	.....	.....	7,996
Marietta.....	22,452	22,452	.....	.....	22,401	21,208	21,208	.....	.....	21,111	23,524	23,524	.....	.....	23,135
Miller.....	2,075	2,025	.....	50	2,083	1,881	1,850	.....	31	1,924	2,903	2,773	.....	80	2,821
Milton.....	6,407	6,407	.....	.....	5,447	4,759	4,759	.....	.....	4,258	6,219	6,219	.....	.....	5,484
Mitchell.....	10,409	7,868	.....	2,186	9,520	12,374	9,786	.....	2,638	11,332	11,314	10,097	.....	1,217	10,877
Monroe.....	18,724	18,724	.....	.....	18,348	17,513	17,047	466	.....	17,104	20,151	19,106	1,045	.....	19,453
Montgomery.....	5,392	4,858	.....	534	4,892	5,044	4,650	.....	394	4,626	6,710	6,342	.....	368	6,383
Morgan.....	10,453	15,220	1,233	.....	15,637	18,736	16,833	1,853	.....	17,762	24,481	21,330	3,011	.....	22,632
Murray.....	2,586	2,586	.....	.....	2,346	2,115	2,115	.....	.....	1,980	1,921	1,921	.....	.....	1,784
Muscogee.....	7,042	7,042	.....	.....	6,939	5,937	5,662	275	.....	5,676	8,439	7,326	1,118	.....	7,784
Newton.....	14,373	14,348	25	.....	14,037	15,926	15,926	.....	.....	15,872	17,689	17,577	112	.....	16,400
Oconee.....	7,349	7,349	.....	.....	6,992	8,530	8,530	.....	.....	8,343	10,331	10,331	.....	.....	10,168
Oglethorpe.....	19,276	19,256	20	.....	17,859	18,245	18,245	.....	.....	17,244	22,340	22,340	.....	.....	20,535
Paulding.....	9,154	9,154	.....	.....	8,181	7,587	7,587	.....	.....	6,844	8,559	8,559	.....	.....	7,568
Pickens.....	1,851	1,851	.....	.....	1,634	2,172	2,172	.....	.....	1,964	2,102	2,102	.....	.....	1,881
Pierce.....	3,657	.....	.....	3,657	2,598	4,381	27	.....	4,304	3,133	5,423	82	.....	5,341	4,015
Pike.....	14,281	14,281	13	.....	14,211	13,582	13,582	.....	.....	13,298	15,189	15,189	.....	.....	14,950
Polk.....	8,852	8,852	.....	.....	8,163	10,811	9,635	.....	1,276	9,609	9,247	8,745	.....	.....	10,633
Pulaski.....	16,431	15,134	1,297	.....	15,813	17,400	17,400	.....	.....	17,426	19,592	17,445	2,147	.....	18,497
Putnam.....	9,609	9,609	.....	.....	9,384	11,015	11,015	.....	.....	10,877	12,666	12,666	.....	.....	12,631
Quitman.....	6,243	6,243	.....	.....	6,184	5,600	5,600	.....	.....	5,494	6,636	6,636	.....	.....	6,387
Randolph.....	18,558	18,558	.....	.....	18,330	15,603	15,603	.....	.....	15,250	17,882	17,882	.....	.....	17,440
Richmond.....	3,784	3,784	.....	.....	3,734	4,717	4,717	.....	.....	5,421	5,421	5,421	.....	.....	5,364
Rockdale.....	7,863	7,863	.....	.....	7,239	12,499	12,499	.....	.....	12,475	6,943	6,943	.....	.....	6,776
Schley.....	5,780	5,780	.....	.....	5,683	5,680	4,747	.....	933	5,197	7,088	4,762	2,276	.....	5,832
Scriven.....	17,963	17,696	.....	297	16,884	14,213	14,136	.....	77	18,367	11,719	11,551	.....	163	11,049
Spalding.....	11,830	11,390	.....	.....	11,365	12,499	12,499	.....	.....	12,475	14,158	14,158	.....	.....	14,131
Stewart.....	17,875	17,875	.....	.....	17,637	16,200	15,803	.....	397	17,482	17,482	14,522	2,960	.....	15,946
Sumter.....	25,164	25,164	.....	.....	24,890	24,251	24,251	.....	.....	23,920	24,845	24,845	.....	.....	24,503
Talbot.....	8,893	8,893	.....	.....	8,467	12,785	12,785	.....	.....	12,696	11,541	11,541	.....	.....	11,245
Taliaferro.....	6,487	6,020	467	.....	6,176	6,009	5,559	450	.....	5,782	7,106	7,106	.....	.....	7,179
Tattnall.....	7,309	952	.....	6,357	5,960	6,478	1,323	.....	5,155	5,338	6,664	1,891	.....	4,673	5,335
Taylor.....	8,371	8,371	.....	.....	8,309	7,968	7,968	.....	.....	7,913	7,576	7,576	.....	.....	7,603
Telfair.....	2,541	2,324	.....	217	2,434	2,936	2,914	.....	22	2,819	4,254	4,254	.....	.....	4,045
Terrell.....	25,719	25,719	.....	.....	25,585	22,996	22,996	.....	.....	23,188	25,139	25,139	.....	.....	25,301
Thomas.....	12,473	10,923	.....	1,550	11,620	11,664	9,569	.....	2,095	10,457	11,056	9,493	.....	1,568	10,247
Troup.....	21,550	21,515	35	.....	21,433	18,494	18,494	.....	.....	18,469	19,646	19,646	.....	.....	19,614
Twigs.....	9,484	9,484	.....	.....	9,149	10,677	10,677	.....	.....	10,223	13,962	13,962	.....	.....	13,356
Upson.....	9,765	9,765	.....	.....	9,661	10,117	10,117	.....	.....	10,011	11,561	11,561	.....	.....	11,389
Walker.....	8,631	8,631	.....	.....	8,267	3,103	3,103	.....	.....	2,807	3,884	3,884	.....	.....	3,454
Walton.....	19,665	19,665	.....	.....	19,058	19,963	19,963	.....	.....	19,634	22,357	22,357	.....	.....	21,691
Ware.....	123	.....	.....	123	91	14	.....	.....	14	11	.....	.....	.....	.....	.....
Warren.....	9,659	9,007	652	.....	9,338	8,825	8,369	456	.....	8,532	9,675	9,430	245	.....	9,414
Washington.....	29,544	29,194	350	.....	28,644	24,171	24,009	162	.....	23,278	26,768	26,339	429	.....	27,030
Wayne.....	965	110	.....	855	793	1,333	121	.....	1,212	1,092	1,308	282	.....	1,026	997
Webster.....	4,116	4,116	.....	.....	4,001	5,313	5,313	.....	.....	5,191	5,037	5,037	.....	.....	4,953
White.....	150	150	.....	.....	120	240	240	.....	.....	210	335	335	.....	.....	294
Whitfield.....	1,947	1,947	.....	.....	1,717	2,164	2,164	.....	.....						

MANUFACTURES.

TABLE 8.—QUANTITY OF COTTON GINNED FROM CROPS GROWN IN 1899, 1900, AND 1901, BY STATES AND COUNTIES—Continued.

INDIAN TERRITORY.

COUNTIES.	CROP OF 1899.					CROP OF 1900.					CROP OF 1901.				
	Commercial bales.				Equiv- alent 500- pound bales.	Commercial bales.				Equiv- alent 500- pound bales.	Commercial bales.				Equiv- alent 500- pound bales.
	Total.	Square.	Round.	Sea island.		Total.	Square.	Round.	Sea island.		Total.	Square.	Round.	Sea island.	
The Territory.....	160,324	121,785	38,539	.....	143,607	288,114	197,704	90,410	.....	249,935	284,170	199,049	85,121	.....	247,073
Cherokee nation .....	24,219	16,284	7,935	.....	20,594	36,583	24,013	12,570	.....	31,203	33,680	22,644	11,036	.....	28,633
Chickasaw nation .....	79,696	64,099	15,597	.....	72,275	140,108	106,032	34,076	.....	124,935	127,789	104,981	22,808	.....	118,345
Choctaw nation .....	31,513	28,239	3,274	.....	30,796	57,767	50,130	11,627	.....	62,332	49,155	13,177	.....	56,593	
Creek nation .....	24,770	13,037	11,733	.....	19,792	44,688	17,404	27,284	.....	33,037	53,769	20,669	33,100	.....	41,799
Seminole nation .....	126	126	.....	.....	150	4,978	126	4,853	.....	2,761	1,600	1,600	.....	.....	1,701

KANSAS.

The State.....	121	121	.....	.....	121	151	151	.....	.....	151	170	170	.....	.....	157
Montgomery .....	121	121	.....	.....	121	151	151	.....	.....	151	170	170	.....	.....	157

KENTUCKY.

The State.....	84	84	.....	.....	79	133	133	.....	.....	133	140	140	.....	.....	172
Fulton .....	60	60	.....	.....	60	130	130	.....	.....	130	140	140	.....	.....	149
Graves .....	24	24	.....	.....	19	3	3	.....	.....	3	.....	.....	.....	.....	23

LOUISIANA.

The State.....	708,508	694,816	13,692	.....	700,852	714,073	696,049	18,024	.....	705,767	860,848	807,248	53,600	.....	840,476
Acadia .....	5,060	5,060	.....	.....	4,944	6,106	6,106	.....	.....	5,869	10,349	5,499	4,850	.....	7,892
Ascension .....	5,009	5,009	.....	.....	4,976	4,878	4,878	.....	.....	4,972	7,072	7,072	.....	.....	7,215
Avoyelles .....	38,586	38,570	16	.....	39,713	32,573	32,573	.....	.....	33,174	42,290	40,486	1,804	.....	42,352
Bienville .....	11,775	11,775	.....	.....	11,636	14,574	14,574	.....	.....	14,500	14,424	14,424	.....	.....	14,523
Bossier .....	27,639	25,655	1,984	.....	27,287	35,788	32,855	2,933	.....	35,641	39,349	36,586	2,763	.....	39,533
Caddo .....	30,213	20,620	593	.....	30,592	43,932	42,726	606	.....	43,907	40,287	40,287	.....	.....	41,413
Calcasieu .....	825	825	.....	.....	754	916	916	.....	.....	891	1,673	1,673	.....	.....	1,626
Caldwell .....	3,423	3,423	.....	.....	3,261	5,412	5,412	.....	.....	5,246	6,432	6,432	.....	.....	6,056
Cameron .....	621	621	.....	.....	646	440	440	.....	.....	412	602	602	.....	.....	638
Catahoula .....	12,979	12,979	.....	.....	12,005	13,092	13,092	.....	.....	12,175	16,650	16,650	.....	.....	15,992
Claiborne .....	20,270	20,270	.....	.....	19,718	24,667	24,667	.....	.....	24,359	23,830	23,830	.....	.....	23,391
Concordia .....	24,096	24,096	.....	.....	24,084	19,686	19,686	.....	.....	20,325	28,125	28,125	.....	.....	30,830
De Soto .....	13,990	13,990	.....	.....	13,910	26,183	26,183	.....	.....	26,755	21,116	21,002	114	.....	21,172
East Baton Rouge .....	22,476	22,030	396	.....	21,128	19,381	19,114	867	.....	18,753	30,819	28,851	1,968	.....	28,919
East Carroll .....	18,970	18,970	.....	.....	19,223	15,303	15,303	.....	.....	15,914	17,461	17,461	.....	.....	18,232
East Feliciana .....	24,615	22,042	2,573	.....	21,752	25,126	23,369	1,757	.....	23,078	29,660	26,779	2,881	.....	27,670
Franklin .....	6,990	6,858	132	.....	6,772	11,259	10,736	523	.....	10,795	11,923	11,718	.....	.....	11,469
Grant .....	8,651	8,651	.....	.....	8,639	7,671	7,671	.....	.....	7,730	8,912	8,912	.....	.....	8,969
Iberia .....	3,406	3,406	.....	.....	3,509	4,163	2,002	2,161	.....	3,251	7,427	3,302	4,125	.....	5,600
Iberville .....	4,149	4,149	.....	.....	4,204	3,584	3,584	.....	.....	3,591	7,865	6,155	1,710	.....	7,156
Jackson .....	6,679	6,679	.....	.....	6,350	7,922	7,922	.....	.....	7,643	8,174	8,174	.....	.....	7,892
Lafayette .....	14,935	13,744	1,191	.....	14,436	14,610	14,610	.....	.....	14,368	25,346	14,546	10,800	.....	20,064
Lincoln .....	11,137	11,137	.....	.....	11,027	14,426	14,426	.....	.....	14,217	15,501	15,501	.....	.....	15,213
Livingston .....	3,100	3,100	.....	.....	2,923	4,363	4,363	.....	.....	3,981	5,495	5,495	.....	.....	5,232
Madison .....	14,274	14,274	.....	.....	14,400	15,799	15,799	.....	.....	16,614	19,484	19,484	.....	.....	20,381
Morehouse .....	32,763	32,163	600	.....	32,165	25,557	25,385	172	.....	25,310	28,036	28,814	122	.....	28,714
Natchitoches .....	28,187	28,187	.....	.....	28,350	27,785	27,785	.....	.....	27,971	31,072	31,072	.....	.....	31,300
Ouachita .....	22,466	22,466	.....	.....	22,232	18,440	18,440	.....	.....	18,098	22,326	22,326	.....	.....	22,153
Poite Coupe .....	41,672	41,672	.....	.....	42,632	32,359	32,359	.....	.....	33,032	46,402	46,402	.....	.....	46,999
Rapides .....	33,015	36,729	1,286	.....	33,155	22,778	18,346	4,432	.....	20,681	43,984	32,808	11,176	.....	33,871
Red River .....	15,063	15,063	.....	.....	15,233	20,154	19,729	.....	.....	20,397	16,982	16,982	.....	.....	17,571
Richland .....	13,079	13,079	.....	.....	13,210	17,935	17,935	.....	.....	18,189	15,871	15,871	.....	.....	16,062
Sabine .....	10,426	10,426	.....	.....	10,453	12,313	12,313	.....	.....	12,371	9,829	9,829	.....	.....	9,882
St. Helena .....	6,325	6,325	.....	.....	6,063	7,213	7,213	.....	.....	6,981	8,858	8,858	.....	.....	8,542
St. Landry .....	44,729	44,726	3	.....	43,951	37,420	37,420	.....	.....	36,522	50,928	49,777	1,151	.....	49,852
St. Martin .....	11,612	7,102	4,510	.....	9,606	10,185	6,037	4,148	.....	8,337	15,679	6,343	9,331	.....	11,354
St. Tammany .....	1,137	1,137	.....	.....	1,048	1,439	1,439	.....	.....	1,306	1,748	1,748	.....	.....	1,613
Tangipahoa .....	4,111	4,111	.....	.....	4,071	3,702	3,702	.....	.....	3,577	5,302	5,302	.....	.....	5,450
Tensas .....	32,297	31,889	408	.....	34,041	26,345	26,345	.....	.....	27,869	34,273	34,273	.....	.....	36,013
Union .....	12,391	12,391	.....	.....	12,242	17,541	17,541	.....	.....	17,478	17,019	17,019	.....	.....	16,701
Vermilion .....	3,594	3,594	.....	.....	3,701	4,017	4,017	.....	.....	4,264	6,509	6,509	.....	.....	7,093
Vernon .....	1,493	1,493	.....	.....	1,473	1,606	1,606	.....	.....	1,538	2,249	2,249	.....	.....	2,159
Washington .....	9,309	9,309	.....	.....	8,967	8,482	8,482	.....	.....	8,048	11,150	11,150	.....	.....	10,557
Webster .....	8,911	8,911	.....	.....	8,813	12,793	12,793	.....	.....	12,776	12,536	12,536	.....	.....	12,446
West Baton Rouge .....	8,168	8,168	.....	.....	8,062	4,262	4,262	.....	.....	4,161	7,685	7,685	.....	.....	7,399
West Carroll .....	3,527	3,527	.....	.....	3,546	4,034	4,034	.....	.....	4,062	5,312	5,312	.....	.....	6,409
West Feliciana .....	19,618	19,618	.....	.....	18,776	17,035	17,035	.....	.....	16,599	17,957	17,957	.....	.....	17,952
Winn .....	5,747	5,747	.....	.....	5,518	8,304	8,304	.....	.....	7,999	7,910	7,910	.....	.....	7,602

<sup>1</sup>Includes 16,000 pounds in Graves county not baled.

COTTON GINNING.

TABLE 8.—QUANTITY OF COTTON GINNED FROM CROPS GROWN IN 1899, 1900, AND 1901, BY STATES AND COUNTIES—Continued.

MISSISSIPPI.

COUNTIES.	CROP OF 1899.					CROP OF 1900.					CROP OF 1901.				
	Commercial bales.				Equiva- lent 500- pound bales.	Commercial bales.				Equiva- lent 500- pound bales.	Commercial bales.				Equiva- lent 500- pound bales.
	Total.	Square.	Round.	Sea island.		Total.	Square.	Round.	Sea island.		Total.	Square.	Round.	Sea island.	
The State.....	1,264,048	1,214,699	49,349	.....	1,237,666	1,055,968	1,018,090	87,878	.....	1,046,700	1,275,480	1,280,016	45,423	.....	1,254,368
Adams.....	23,971	23,971	.....	.....	22,600	22,404	22,219	85	.....	21,415	26,696	26,196	500	.....	25,012
Alcorn.....	5,219	5,219	.....	.....	5,229	5,221	5,221	.....	.....	5,224	5,165	5,165	.....	.....	5,175
Amite.....	21,352	21,352	.....	.....	21,057	20,167	19,550	617	.....	19,812	25,769	25,769	.....	.....	25,203
Attala.....	18,906	18,906	.....	.....	18,591	14,130	14,130	.....	.....	18,050	17,242	17,242	.....	.....	17,200
Benton.....	7,391	7,391	.....	.....	7,388	6,807	6,307	.....	.....	6,846	6,437	6,437	.....	.....	6,393
Bolivar.....	53,976	53,976	.....	.....	55,463	67,307	67,307	.....	.....	71,188	63,492	63,492	.....	.....	67,021
Calhoun.....	9,447	9,447	.....	.....	9,444	6,671	6,671	.....	.....	7,025	7,833	7,833	.....	.....	7,816
Carroll.....	21,251	18,518	2,738	.....	19,600	19,078	16,619	2,459	.....	17,718	20,681	18,034	2,047	.....	19,462
Chickasaw.....	16,841	12,809	4,032	.....	15,194	13,653	13,017	636	.....	13,790	14,373	14,373	.....	.....	14,616
Choctaw.....	8,113	8,113	.....	.....	8,170	5,827	5,827	.....	.....	5,854	7,694	7,694	.....	.....	7,771
Claborne.....	13,232	13,232	.....	.....	12,156	12,979	12,979	.....	.....	12,204	13,255	13,255	.....	.....	12,297
Clarke.....	10,056	10,056	.....	.....	10,116	6,484	6,484	.....	.....	6,890	8,615	8,615	.....	.....	8,565
Clay.....	16,080	16,080	.....	.....	16,595	10,564	10,564	.....	.....	10,742	11,482	11,482	.....	.....	11,717
Coahoma.....	43,164	41,831	1,333	.....	43,167	44,213	43,939	274	.....	44,922	40,784	40,320	464	.....	41,424
Copiah.....	25,223	25,223	.....	.....	24,761	25,404	25,404	.....	.....	24,975	35,081	35,081	.....	.....	34,216
Covington.....	7,249	7,249	.....	.....	6,912	6,440	6,440	.....	.....	6,151	9,540	9,540	.....	.....	9,147
De Soto.....	25,935	22,289	3,646	.....	24,197	23,180	20,055	2,525	.....	22,361	21,966	20,835	1,081	.....	20,746
Franklin.....	13,335	13,335	.....	.....	12,830	12,269	12,269	.....	.....	11,888	14,131	14,131	.....	.....	13,781
Greene.....	175	175	.....	.....	175	255	255	.....	.....	255	484	484	.....	.....	433
Grenada.....	16,450	13,359	3,091	.....	14,890	11,745	8,122	3,623	.....	10,139	13,608	7,532	6,076	.....	10,376
Hancock.....	180	180	.....	.....	180	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hinds.....	46,022	36,615	9,407	.....	41,021	27,347	25,764	1,583	.....	25,739	41,034	40,206	1,728	.....	40,146
Holmes.....	38,914	35,009	3,905	.....	37,328	26,899	24,695	2,204	.....	26,146	42,959	37,548	5,111	.....	40,702
Issaquena.....	17,315	17,315	.....	.....	17,525	16,358	16,358	.....	.....	16,829	18,350	18,350	.....	.....	19,142
Itawamba.....	4,940	4,940	.....	.....	4,981	3,723	3,723	.....	.....	3,796	6,397	5,397	.....	.....	6,491
Jackson.....	3	3	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Jasper.....	11,188	11,188	.....	.....	11,187	8,276	8,276	.....	.....	8,225	10,541	10,541	.....	.....	10,400
Jefferson.....	23,195	23,195	.....	.....	26,817	25,139	23,976	1,163	.....	24,469	29,053	27,548	1,587	.....	28,270
Jones.....	7,222	7,222	.....	.....	6,995	6,209	6,209	.....	.....	6,036	9,143	9,143	.....	.....	8,865
Kemper.....	15,940	15,940	.....	.....	15,997	10,578	10,578	.....	.....	10,581	13,606	13,606	.....	.....	13,621
Lafayette.....	16,118	16,118	.....	.....	15,852	11,160	10,611	549	.....	11,014	12,891	12,891	.....	.....	12,684
Lauderdale.....	15,034	15,034	.....	.....	14,952	10,202	10,202	.....	.....	9,782	15,432	15,432	.....	.....	15,185
Lawrence.....	12,436	12,436	.....	.....	11,891	10,433	10,433	.....	.....	10,061	14,668	14,668	.....	.....	13,992
Leake.....	13,600	13,600	.....	.....	13,293	8,207	8,207	.....	.....	8,045	12,329	12,329	.....	.....	12,162
Lee.....	16,362	16,362	.....	.....	16,771	12,196	12,196	.....	.....	12,616	14,395	14,395	.....	.....	14,739
Leflore.....	39,387	39,387	30	.....	39,470	31,403	31,403	.....	.....	30,843	30,272	30,272	.....	.....	30,374
Lincoln.....	11,542	11,542	.....	.....	11,454	10,309	10,309	.....	.....	9,981	14,941	14,941	.....	.....	14,903
Lowndes.....	20,920	20,920	.....	.....	20,907	15,708	15,708	.....	.....	15,651	18,966	18,966	.....	.....	18,422
Madison.....	27,096	25,753	1,343	.....	26,682	20,308	18,729	1,579	.....	19,680	31,852	26,554	4,798	.....	29,408
Marion.....	5,052	5,052	.....	.....	4,823	5,179	5,179	.....	.....	5,068	6,482	6,482	.....	.....	6,423
Marshall.....	22,806	22,806	.....	.....	22,270	16,992	16,990	302	.....	16,906	16,469	15,878	596	.....	16,034
Monroe.....	26,184	24,221	1,963	.....	26,035	16,191	15,087	1,104	.....	16,133	19,969	19,736	233	.....	20,203
Montgomery.....	13,584	10,936	2,648	.....	11,911	9,648	8,003	1,640	.....	8,964	10,813	10,813	.....	.....	10,640
Neshoba.....	7,877	7,877	.....	.....	7,690	6,410	6,410	.....	.....	6,290	8,295	8,295	.....	.....	8,110
Newton.....	16,533	16,533	.....	.....	16,362	11,406	11,406	.....	.....	11,310	17,814	17,814	.....	.....	17,652
Noxubee.....	25,025	22,325	2,700	.....	23,843	21,764	20,629	1,135	.....	21,243	21,071	18,985	2,086	.....	20,178
Oktibbeha.....	12,322	12,322	.....	.....	12,442	7,468	7,140	328	.....	7,496	8,640	8,185	505	.....	8,564
Panola.....	28,230	28,230	.....	.....	27,198	23,082	20,980	2,052	.....	22,243	26,839	23,939	2,900	.....	25,410
Pearl River.....	170	170	.....	.....	165	162	162	.....	.....	162	362	362	.....	.....	333
Perry.....	1,287	1,287	.....	.....	1,252	1,122	1,122	.....	.....	1,109	1,441	1,441	.....	.....	1,429
Pike.....	9,849	9,849	.....	.....	9,590	12,875	12,875	.....	.....	12,521	18,689	18,689	.....	.....	17,901
Pontotoc.....	12,602	12,602	.....	.....	12,756	10,916	10,494	422	.....	10,916	9,572	9,130	442	.....	9,316
Prentiss.....	10,099	10,099	.....	.....	10,247	7,218	7,218	.....	.....	7,413	7,594	7,594	.....	.....	7,726
Quitman.....	6,310	6,310	.....	.....	6,384	6,768	6,768	.....	.....	6,724	8,912	8,912	.....	.....	8,685
Rankin.....	14,273	14,273	.....	.....	14,228	10,088	10,088	.....	.....	9,937	14,881	14,881	.....	.....	14,725
Scott.....	8,346	8,346	.....	.....	8,194	5,755	5,755	.....	.....	5,645	10,775	10,775	.....	.....	10,520
Sharkey.....	21,576	21,576	.....	.....	23,474	19,493	19,493	.....	.....	21,370	20,664	20,664	.....	.....	22,446
Simpson.....	9,187	9,187	.....	.....	8,742	7,869	7,369	.....	.....	7,133	9,442	9,442	.....	.....	9,179
Smith.....	9,056	9,056	.....	.....	8,643	6,956	6,956	.....	.....	6,806	9,426	9,426	.....	.....	9,202
Sunflower.....	17,636	17,437	199	.....	18,009	19,003	19,003	.....	.....	19,674	22,557	22,557	.....	.....	23,203
Tallahatchie.....	24,510	22,096	2,414	.....	23,615	27,672	25,927	1,745	.....	27,465	27,115	24,597	2,518	.....	25,273
Tate.....	17,197	17,197	.....	.....	17,184	13,482	13,436	46	.....	13,295	14,159	13,470	689	.....	13,720
Tippah.....	7,434	7,383	51	.....	7,485	5,996	5,996	.....	.....	5,281	5,281	5,281	.....	.....	5,245
Tishomingo.....	3,720	3,720	.....	.....	3,744	3,537	3,537	.....	.....	3,555	4,565	4,565	.....	.....	4,616
Tunica.....	24,959	23,844	1,115	.....	24,716	23,436	22,079	1,357	.....	22,655	24,361	24,361	.....	.....	24,000
Union.....	10,099	8,209	1,890	.....	9,204	7,375	5,949	1,426	.....	6,649	8,212	7,005	1,207	.....	7,745
Warren.....	23,856	23,816	40	.....	23,201	20,417	20,417	.....	.....	20,416	29,386	29,386	.....	.....	29,081
Washington.....	64,551	64,507	44	.....	69,132	50,733	50,733	.....	.....	55,739	68,515	68,515	.....	.....	74,748
Wayne.....	4,819	4,819	.....	.....	4,913	4,155	4,155	.....	.....	4,254	5,252	5,252	.....	.....	5,191
Webster.....	9,515	9,515	.....	.....	8,966	5,705	5,705	.....	.....	5,021	6,488	6,488	.....	.....	6,393
Wilkinson.....	17,610	17,610	.....	.....	16,508	19,532	17,522	2,010	.....	18,823	23,386	25,536	2,800		

MANUFACTURES.

TABLE 8.—QUANTITY OF COTTON GINNED FROM CROPS GROWN IN 1899, 1900, AND 1901, BY STATES AND COUNTIES—Continued.

MISSOURI.

COUNTIES.	CROP OF 1899.				CROP OF 1900.				CROP OF 1901.				Equiva- lent 500- pound bales.	
	Commercial bales.				Commercial bales.				Commercial bales.					
	Total.	Square.	Round.	Sea- island.	Total.	Square.	Round.	Sea- island.	Total.	Square.	Round.	Sea- island.		
The State.....	19,377	19,377			20,275	27,980	25,712	2,268	27,871	30,837	28,445	2,392		30,890
Butler.....	136	136			136	230	230		241					
Dunklin.....	12,985	12,985			13,660	19,256	16,988	2,268	18,563	19,760	17,868	2,392		19,320
Howell.....	192	192			197	220	220		226	234	234			242
Mississippi.....	12	12			12	13	13		13					
New Madrid.....	1,690	1,690			1,831	2,645	2,645		2,790	3,577	3,577			3,862
Oregon.....	75	75			78	137	137		137	165	165			170
Ozark.....	610	610			610	879	879		910	599	599			614
Pemiscot.....	1,394	1,394			1,442	1,805	1,805		1,942	3,265	3,265			3,376
Ripley.....	353	353			358	180	180		192	145	145			147
Stoddard.....	1,387	1,387			1,393	1,813	1,813		2,014	2,640	2,640			2,701
Taney.....	543	543			558	802	802		843	462	462			463

NORTH CAROLINA.

The State.....	473,155	472,385	770	440,400	509,341	507,263	2,078	477,269	451,441	448,814	2,627	1415,808
Alamance.....	736	736		590	1,156	1,156		970	1,031	1,031		869
Alexander.....	912	880	32	755	798	798		700	2,031	531	1,500	1,208
Anson.....	19,139	19,139		18,666	16,141	16,141		15,741	12,354	12,354		11,645
Beaufort.....	3,623	3,623		3,485	6,486	6,486		6,260	5,757	5,757		5,635
Bertie.....	6,563	6,563		6,506	9,227	9,227		9,488	10,477	10,477		10,411
Bladen.....	3,055	3,055		2,990	3,222	3,222		3,142	3,685	3,685		3,660
Brunswick.....	253	253		253	412	412		412	1,005	1,005		1,001
Burke.....	224	224		224								
Cabarrus.....	8,197	8,197		7,569	7,257	7,257		6,855	7,443	7,443		6,860
Caldwell.....	8	8		6	8	8		6				10
Camden.....	1,001	1,001		1,011	1,815	1,815		1,903	1,852	1,852		2,002
Carteret.....	600	600		595	902	902		872	753	753		745
Catawba.....	4,536	4,536		4,613	4,657	4,657		4,214	5,129	5,129		4,493
Chatham.....	6,734	6,734		5,724	7,205	7,205		7,873	6,381	6,381		5,618
Chowan.....	2,064	2,064		2,065	3,351	3,351		3,317	3,467	3,467		3,420
Cleveland.....	12,350	12,350		11,809	14,766	14,766		13,738	12,603	12,603		11,505
Columbus.....	2,483	2,483		2,505	2,969	2,969		2,975	2,086	2,086		2,045
Craven.....	4,244	4,244		4,076	5,312	5,312		5,175	4,991	4,991		4,813
Cumberland.....	8,601	8,601		7,970	8,080	8,080		7,525	6,888	6,888		6,208
Currituck.....	578	578		593	1,387	1,387		1,362	1,185	1,185		1,299
Davidson.....	1,366	1,366		1,295	1,489	1,489		1,415	1,486	1,486		1,328
Davie.....	840	840		758	1,192	1,192		1,053	712	712		647
Duplin.....	5,100	5,100		4,845	7,778	7,778		7,381	3,219	3,219		3,033
Durham.....	1,320	1,320		1,145	1,450	1,450		1,291	1,573	1,573		1,331
Edgecombe.....	15,626	15,626		13,699	19,078	19,078		17,145	23,125	23,125		20,686
Forsyth.....	11	11		9	60	60		50				
Franklin.....	10,865	10,865		9,831	13,951	13,951		12,464	12,627	12,627		10,979
Gaston.....	7,477	7,477		6,577	7,948	7,948		7,194	9,447	9,447		8,531
Gates.....	1,481	1,481		1,470	2,106	2,106		2,077	2,581	2,581		2,575
Granville.....	1,523	1,523		1,333	1,994	1,994		1,752	2,349	2,349		2,099
Greene.....	7,500	7,500		7,283	8,077	8,077		7,959	6,871	6,871		6,622
Guilford.....	549	549		276	408	408		387	1,171	1,171		1,110
Hallfax.....	15,888	15,460	428	14,587	16,414	15,646	768	14,587	16,889	16,330	559	15,290
Harnett.....	6,265	6,265		5,614	6,249	6,249		5,520	5,506	5,506		4,727
Hertford.....	3,993	3,993	10	3,973	4,789	4,789		4,819	5,097	5,097		4,599
Hyde.....	139	139		135	397	397		398	189	189		200
Iredell.....	11,180	11,180		10,127	8,941	8,941		8,080	9,506	9,506		3,536
Johnston.....	19,334	19,334		17,835	25,335	25,335		21,670	17,531	16,963	568	14,942
Jones.....	3,680	3,680		3,543	4,201	4,201	1,310	4,030	2,956	2,956		2,841
Lenoir.....	7,153	7,153		7,155	9,126	9,126		9,053	7,947	7,947		7,735
Lincoln.....	5,796	5,796		5,107	5,801	5,801		5,210	5,607	5,607		4,393
Martin.....	3,642	3,642		3,603	3,529	3,529		3,514	4,001	4,001		3,312
Mecklenburg.....	22,805	22,805		21,799	26,038	26,038		25,222	22,384	22,384		20,921
Montgomery.....	5,503	5,503		5,044	3,295	3,295		2,993	3,144	3,144		2,835
Moore.....	5,050	5,050		4,431	4,835	4,835		4,253	4,107	4,107		3,686
Nash.....	10,174	10,174		8,795	10,056	10,056		8,732	12,012	12,012		10,525
Northampton.....	11,570	11,570		11,350	9,649	9,649		9,442	11,326	11,326		11,135
Onslow.....	2,333	2,333		2,298	2,827	2,827		2,668	2,076	2,076		1,993
Orange.....	1,929	1,929		1,636	2,424	2,424		2,196	2,026	2,026		1,715
Pamlico.....	1,274	1,274		1,267	2,171	2,171		2,174	1,329	1,329		1,287
Pasquotank.....	1,088	1,088		1,094	1,620	1,620		1,729	2,503	2,503		2,651
Pender.....	827	827		776	967	967		924	636	636		602
Perquimans.....	3,223	3,223		3,251	5,084	5,084		5,160	3,713	3,713		3,788
Pitt.....	14,474	14,474		13,948	15,902	15,902		15,179	16,531	16,531		16,533
Polk.....	1,000	1,000		806	825	825		748	813	813		717
Randolph.....	560	560		448	762	762		662	785	785		675
Richmond.....	23,931	23,931		23,609	7,854	7,854		7,463	4,888	4,888		4,393
Robeson.....	23,847	23,847		23,269	27,349	27,349		26,006	19,201	19,201		17,936
Rowan.....	9,468	9,468		8,791	8,661	8,661		8,052	7,446	7,446		7,569
Rutherford.....	5,271	5,271		4,693	5,825	5,825		5,509	5,078	5,078		4,449

<sup>1</sup>Includes 5,000 pounds in Caldwell county not baled.

COTTON GINNING.

TABLE 8.—QUANTITY OF COTTON GINNED FROM CROPS GROWN IN 1899, 1900, AND 1901, BY STATES AND COUNTIES—Continued.

NORTH CAROLINA—Continued.

COUNTIES.	CROP OF 1899.				Equiv- alent 500- pound bales.	CROP OF 1900.				Equiv- alent 500- pound bales.	CROP OF 1901.				Equiv- alent 500- pound bales.
	Commercial bales.					Commercial bales.					Commercial bales.				
	Total.	Square.	Round.	Sea island.		Total.	Square.	Round.	Sea island.		Total.	Square.	Round.	Sea island.	
Sampson .....	9,521	9,521			8,881	10,689	10,689			9,798	7,519	7,519			6,622
Scotland .....						11,889	11,889			11,789	10,285	10,285			10,024
Stanly .....	6,105	5,805	300		5,368	4,280	4,280			3,928	4,319	4,319			3,929
Tyrrell .....	720	720			707	711	711			710	779	779			709
Union .....	25,316	25,316			22,950	22,263	22,263			21,117	17,388	17,388			15,682
Vance .....	2,542	2,542			2,325	4,387	4,387			4,086	3,969	3,969			3,494
Wake .....	22,616	22,616			19,581	25,534	25,534			22,145	18,106	18,106			16,607
Warren .....	6,653	6,653			6,058	9,150	9,150			8,523	9,168	9,168			8,170
Washington .....	1,861	1,861			1,837	3,025	3,025			3,043	2,473	2,473			2,465
Wayne .....	19,695	19,695			18,571	23,359	23,359			21,666	16,660	16,660			15,449
Wilson .....	11,660	11,660			10,606	12,451	12,451			11,227	11,239	11,239			10,275
Yadkin .....	20	20			16	36	36			18	39	30			18

OKLAHOMA.

The Territory.	84,035	53,077	30,958	.....	71,983	116,875	89,782	27,093	.....	106,707	149,064	109,776	89,288	.....	131,413
Blaine .....	1,118		1,118		559	1,180		1,180		585	876	172	704		494
Cleveland .....	8,958	6,462	2,496		7,826	15,093	11,085	3,918		13,207	11,817	10,637	780		10,943
Custer .....	1,898	765	1,133		1,377	2,744	500	2,244		1,712	3,150	650	2,600		1,980
Dewey .....	200	200			200	210	210			210	275	275			275
Greer .....	4,239	4,239			4,231	17,966	17,966			18,767	21,153	21,153			21,190
Kay .....											425	425			425
Kingfisher .....	1,368	1,368			1,359	2,132	2,132			2,102	2,510	2,510			2,496
Lincoln .....	15,688	10,028	5,660		13,326	22,768	16,787	5,976		20,433	23,379	17,772	11,107		23,725
Logan .....	6,132	4,132	1,940		5,236	6,025	3,881	2,644		4,846	11,743	4,569	7,174		8,307
Noble .....	1,000	1,000			1,000	840	840			840					
Oklahoma .....	4,166	4,166			4,213	7,112	7,112			7,447	6,549	5,739	810		6,233
Pawnee .....	1,971	1,971			2,131	1,734	1,734			1,830	4,277	4,277			4,473
Payne .....	5,855	3,555	2,300		4,810	9,923	3,474	6,449		6,916	14,452	6,915	7,537		10,865
Pottawatomie .....	28,662	12,351	16,311		23,839	20,515	15,333	4,682		18,711	23,055	19,479	8,576		24,199
Washita .....	2,698	2,698			2,722	8,728	8,728			9,101	15,101	15,101			15,506
Woods .....	82	82			104						302	302			302

SOUTH CAROLINA.

The State.....	876,545	864,714	3,602	8,229	837,105	780,782	770,767	1,866	8,149	748,726	732,719	722,786	2,316	7,617	692,261
Abbeville .....	28,047	28,047			26,490	21,176	21,176			20,325	26,938	26,938			25,908
Aiken .....	26,889	26,889			25,044	25,597	25,597			24,547	25,273	25,273			23,950
Anderson .....	39,615	39,615			38,456	35,566	35,566			34,329	40,683	40,683			38,523
Barnberg .....	17,704	17,614	90		17,817	14,171	14,171			14,267	12,500	12,500			12,694
Barnwell .....	38,100	36,962			38,048	32,427	32,427			33,869	26,414	26,414			26,643
Beaufort .....	3,903	2,260	1,643		3,304	3,422	1,955	1,467		2,871	4,315	2,761		1,554	3,721
Berkeley .....	13,188	11,991	1,197		11,888	10,647	10,636	11		9,952	10,556	10,546		10	9,453
Charleston .....	5,389		5,389		3,707	6,671		6,671		4,703	6,013			6,013	4,229
Cherokee .....	10,369	10,369			9,700	7,642	7,642			7,120	8,217	8,217			7,483
Chester .....	21,045	20,331	714		19,133	21,207	20,317	890		19,448	16,491	16,291	200		15,274
Chesterfield .....	14,193	14,193			13,919	11,790	11,790			11,417	8,827	8,827			8,238
Clarendon .....	21,865	21,865			22,612	21,003	21,003			20,991	20,009	20,009			20,236
Colleton .....	8,043	8,043			8,089	8,604	8,604			8,417	9,276	9,286		40	8,721
Darlington .....	29,552	29,552			29,462	27,615	27,615			27,669	25,772	25,772			25,540
Dorchester .....	6,569	6,569			6,234	6,377	6,377			6,997	6,018	6,018			5,726
Edgefield .....	20,125	20,125			19,304	19,513	19,513			18,815	20,870	20,870			19,977
Fairfield .....	22,212	22,212			21,613	22,274	22,274			21,491	18,918	18,918			17,785
Florence .....	19,137	19,137			18,901	16,742	16,742			16,652	14,568	14,568			14,224
Georgetown .....	1,305	1,305			1,296	1,323	1,323			1,303	1,212	1,212			1,156
Greenville .....	26,809	26,809			24,645	23,888	23,888			21,911	25,701	25,701			22,705
Greenwood .....	28,834	28,820	14		26,987	22,830	22,830			21,282	27,623	27,623			26,651
Hampton .....	14,756	14,750	6		15,023	12,159	12,159			12,033	11,638	11,638			11,336
Horry .....	5,231	5,231			5,194	5,647	5,647			5,530	6,145	6,145			6,007
Kershaw .....	17,727	17,727			17,458	17,253	17,253			16,949	14,453	14,453			13,842
Lancaster .....	20,499	20,499			18,576	18,880	18,880			17,713	14,410	14,410			12,923
Laurens .....	39,993	38,780	1,213		35,888	30,991	30,991			29,231	34,879	34,879			32,457
Lexington .....	14,352	14,352			13,024	13,994	13,994			12,781	12,814	12,814			11,557
Marion .....	23,939	23,939			27,685	30,720	30,720			29,051	21,559	21,559			20,319
Marlboro .....	39,194	39,194			38,407	36,089	36,089			35,168	23,900	23,900			23,114
Newberry .....	26,245	25,845	400		24,240	20,986	20,986		976	19,040	26,587	24,471	2,116		22,474
Oconee .....	10,695	10,695			9,972	10,254	10,254			9,585	11,149	11,149			10,181
Orangeburg .....	65,149	65,134	15		62,071	52,293	52,293			49,736	53,980	53,980			50,596
Pickens .....	11,323	11,323			10,320	9,199	9,199			8,433	8,982	8,982			7,933
Richland .....	12,573	12,573			12,605	11,554	11,554			11,553	9,838	9,838			9,551
Saluda .....	14,643	14,643			13,497	12,492	12,492			11,490	14,463	14,463			13,469
Spartanburg .....	36,739	36,739			33,747	31,322	31,322			29,077	29,302	29,302			26,298
Sumter .....	50,670	50,670			51,404	45,523	45,523			45,809	34,033	34,033			33,926
Union .....	18,258	18,258			17,052	15,003	15,003			13,985	12,273	12,273			11,517
Williamsburg .....	20,630	20,630			20,318	18,804	18,804			18,847	13,904	13,904			13,498
York .....	26,087	26,024	13		25,910	27,134	27,134			25,489	22,156	22,156			22,521

MANUFACTURES.

TABLE 8.—QUANTITY OF COTTON GINNED FROM CROPS GROWN IN 1899, 1900, AND 1901, BY STATES AND COUNTIES—Continued.

TENNESSEE.

COUNTIES.	CROP OF 1899.					CROP OF 1900.					CROP OF 1901.				
	Commercial bales.				EQUIVALENT 500-POUND BALES.	Commercial bales.				EQUIVALENT 500-POUND BALES.	Commercial bales.				EQUIVALENT 500-POUND BALES.
	Total.	Square.	Round.	Sea island.		Total.	Square.	Round.	Sea island.		Total.	Square.	Round.	Sea island.	
The State.....	215,175	199,926	15,249	.....	211,641	227,601	203,149	24,452	.....	1221,619	204,538	185,157	19,381	.....	2197,138
Bedford.....	49	49	.....	.....	46	74	74	.....	.....	71	139	139	.....	.....	185
Benton.....	938	938	.....	.....	936	378	378	.....	.....	394	412	412	.....	.....	425
Bledsoe.....	3	.....	8	.....	4	3	3	.....	.....	3	.....	.....	.....	.....	3
Bradley.....	284	284	.....	.....	251	378	378	.....	.....	348	320	320	.....	.....	307
Cannon.....	24	24	.....	.....	24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Carroll.....	6,881	5,281	1,650	.....	6,215	10,845	5,421	5,424	.....	8,394	7,609	4,092	3,517	.....	5,952
Chester.....	3,774	3,774	.....	.....	3,771	3,351	3,351	.....	.....	3,394	3,619	3,619	.....	.....	3,633
Crockett.....	5,779	5,779	.....	.....	5,949	5,861	5,861	.....	.....	6,189	6,311	6,311	.....	.....	6,534
Decatur.....	1,208	1,208	.....	.....	1,176	1,197	1,197	.....	.....	1,188	1,460	1,460	.....	.....	1,461
Dekalb.....	4	4	.....	.....	4	2	2	.....	.....	2	.....	.....	.....	.....	.....
Dickson.....	6	6	.....	.....	6	6	6	.....	.....	6	.....	.....	.....	.....	6
Dyer.....	11,055	5,539	5,516	.....	8,639	14,625	8,361	6,264	.....	12,058	10,399	7,415	2,984	.....	9,160
Fayette.....	21,602	21,002	.....	.....	21,864	18,617	17,596	1,020	.....	18,533	18,357	13,357	.....	.....	13,105
Gibson.....	7,252	7,252	.....	.....	7,546	7,970	7,970	.....	.....	8,468	7,089	7,089	.....	.....	7,435
Giles.....	5,779	5,779	.....	.....	5,785	8,839	8,839	.....	.....	9,081	11,761	11,761	.....	.....	11,627
Hamilton.....	17	17	.....	.....	17	22	22	.....	.....	24	67	67	.....	.....	62
Herdman.....	10,795	10,595	200	.....	10,700	10,881	10,881	.....	.....	10,922	8,739	8,739	.....	.....	8,598
Hardin.....	4,780	4,389	341	.....	4,648	5,885	3,786	.....	.....	4,946	6,110	3,904	2,206	.....	5,038
Haywood.....	18,844	18,944	3,500	.....	17,038	15,400	14,943	512	.....	15,298	11,101	11,027	74	.....	11,017
Henderson.....	4,706	4,706	.....	.....	4,723	4,525	4,525	.....	.....	4,666	4,370	4,370	.....	.....	4,424
Henry.....	658	658	.....	.....	668	1,040	1,040	.....	.....	1,105	603	603	.....	.....	646
Hickman.....	36	36	.....	.....	36	28	28	.....	.....	31	64	64	.....	.....	64
Jackson.....	2	2	.....	.....	2	4	4	.....	.....	4	.....	.....	.....	.....	.....
James.....	5	5	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lake.....	18,530	18,530	.....	.....	14,657	18,909	18,909	.....	.....	15,075	17,210	14,310	2,900	.....	16,501
Lauderdale.....	18,079	10,786	2,293	.....	12,004	17,038	12,274	4,764	.....	15,038	12,881	12,078	803	.....	12,559
Lawrence.....	371	371	.....	.....	371	350	350	.....	.....	350	400	400	.....	.....	400
Lincoln.....	2,196	2,196	.....	.....	2,199	4,017	4,017	.....	.....	4,091	5,730	5,730	.....	.....	5,887
Loudon.....	.....	.....	.....	.....	.....	3	3	.....	.....	3	745	745	.....	.....	710
McMinn.....	433	433	.....	.....	425	819	819	.....	.....	819	745	745	.....	.....	.....
McNairy.....	6,997	6,997	.....	.....	7,125	6,161	6,161	.....	.....	6,298	6,203	6,203	.....	.....	6,348
Madison.....	12,035	12,035	.....	.....	12,480	12,824	12,824	.....	.....	13,044	9,237	9,237	.....	.....	9,356
Marshall.....	295	295	.....	.....	295	213	213	.....	.....	213	271	271	.....	.....	279
Maury.....	233	233	.....	.....	233	363	363	.....	.....	360	557	557	.....	.....	546
Meigs.....	3	3	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Monroe.....	3	3	.....	.....	3	14	14	.....	.....	14	.....	.....	.....	.....	2
Obion.....	867	867	.....	.....	867	2,415	2,415	.....	.....	2,428	3,000	807	2,193	.....	1,917
Overton.....	2	2	.....	.....	2	10	10	.....	.....	10	1	1	.....	.....	1
Perry.....	215	215	.....	.....	198	996	996	.....	.....	893	705	705	.....	.....	682
Polk.....	778	778	.....	.....	710	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rutherford.....	3,158	3,158	.....	.....	3,198	4,364	4,364	.....	.....	4,426	3,958	3,958	.....	.....	3,884
Sevier.....	6	6	.....	.....	6	2	2	.....	.....	2	2	2	.....	.....	2
Shelby.....	34,693	34,693	.....	.....	35,454	28,198	27,806	392	.....	28,537	23,111	27,437	674	.....	27,889
Tipton.....	20,327	18,586	1,741	.....	19,782	24,248	20,271	3,977	.....	23,075	19,465	15,435	4,030	.....	17,768
Warren.....	100	100	.....	.....	100	.....	.....	.....	.....	100	.....	.....	.....	.....	.....
Wayne.....	350	350	.....	.....	350	215	215	.....	.....	217	492	492	.....	.....	506
Weakley.....	1,573	1,573	.....	.....	1,648	1,822	1,822	.....	.....	1,458	1,963	1,963	.....	.....	2,171
White.....	8	8	.....	.....	8	.....	.....	.....	.....	20	4	4	.....	.....	15
Williamson.....	32	32	.....	.....	55	30	30	.....	.....	33	73	73	.....	.....	69

TEXAS.

The State.....	2,658,555	2,392,094	266,461	.....	2,609,018	3,536,506	3,121,525	414,981	.....	3,438,336	2,594,442	2,301,226	293,216	.....	2,602,166
Anderson.....	16,370	16,370	.....	.....	16,326	19,553	19,553	.....	.....	19,784	16,065	16,065	.....	.....	16,165
Angelina.....	3,967	3,967	.....	.....	3,838	4,482	4,482	.....	.....	4,519	4,598	4,598	.....	.....	4,000
Aransas.....	.....	.....	.....	.....	.....	1,996	1,996	.....	.....	1,078	.....	.....	.....	.....	.....
Archer.....	135	135	.....	.....	141	95	95	.....	.....	160	21	21	.....	.....	22
Atascosa.....	3,376	3,376	.....	.....	3,999	8,337	8,337	.....	.....	9,251	4,569	4,569	.....	.....	4,744
Austin.....	29,932	28,547	1,385	.....	31,744	9,805	9,024	781	.....	10,073	18,358	15,225	3,133	.....	18,043
Banders.....	1,168	1,168	.....	.....	1,206	3,343	3,343	.....	.....	3,462	2,453	2,453	.....	.....	2,542
Bastrop.....	41,048	36,409	5,639	.....	40,261	37,226	25,960	11,266	.....	35,054	24,970	18,614	6,356	.....	22,671
Baylor.....	450	450	.....	.....	466	1,860	1,860	.....	.....	1,857	1,080	1,080	.....	.....	1,076
Bee.....	4,560	4,560	.....	.....	4,784	12,411	12,411	.....	.....	12,847	7,884	7,884	.....	.....	8,256
Bell.....	53,152	50,357	2,795	.....	55,754	66,086	56,053	10,033	.....	66,276	51,865	46,373	5,492	.....	51,842
Bexar.....	3,321	7,976	846	.....	3,886	28,313	23,869	4,444	.....	27,346	12,508	11,638	820	.....	12,573
Blanco.....	3,733	3,733	.....	.....	3,951	6,370	6,370	.....	.....	6,360	3,687	3,687	.....	.....	3,314
Bosque.....	11,536	11,536	.....	.....	11,736	23,220	23,220	.....	.....	23,992	15,518	14,005	1,513	.....	15,016
Bowie.....	16,665	16,665	.....	.....	16,826	20,557	20,557	.....	.....	21,347	16,240	16,240	.....	.....	16,756
Brazoria.....	6,720	6,720	.....	.....	6,888	1,264	1,264	.....	.....	1,314	1,493	1,493	.....	.....	1,535
Brazos.....	21,272	21,272	.....	.....	22,069	19,764	16,386	3,378	.....	18,473	21,349	17,954	3,395	.....	20,135
Brown.....	12,340	12,340	.....	.....	12,619	27,712	27,712	.....	.....	28,273	8,366	7,979	337	.....	8,258
Burleson.....	23,372	19,845	3,527	.....	25,194	13,341	13,318	4,523	.....	16,890	18,494	15,741	2,753	.....	17,634
Burnet.....	7,587	7,587	.....	.....	7,788	15,730	15,730	.....	.....	16,518	4,926	4,926	.....	.....	5,033

<sup>1</sup>Includes 1,000 pounds in White county not baled.  
<sup>2</sup>Includes cotton not baled, as follows: Bledsoe county, 1,500 pounds; Dickson county, 2,500 pounds; Monroe county, 1,050 pounds; and White county, 6,000 pounds.

COTTON GINNING.

TABLE 8.—QUANTITY OF COTTON GINNED FROM CROPS GROWN IN 1899, 1900, AND 1901. BY STATES AND COUNTIES—Continued.

TEXAS—Continued.

COUNTIES	CROP OF 1899.				Equivalent 500-pound bales.	CROP OF 1900.				Equivalent 500-pound bales.	CROP OF 1901.				Equivalent 500-pound bales.
	Commercial bales.					Commercial bales.					Commercial bales.				
	Total.	Square.	Round.	Sea island.		Total.	Square.	Round.	Sea island.		Total.	Square.	Round.	Sea island.	
Caldwell	50,807	39,779	11,028		47,473	45,282	39,295	5,987		44,306	25,764	23,496	2,268	25,818	
Callahan	1,402	1,402			1,477	469	469			493	1,805	1,805		1,401	
Callahan	7,583	7,583			7,716	11,707	11,707			11,980	6,057	6,057		6,158	
Camp	7,612	7,612			7,607	13,093	13,093			13,266	8,597	8,597		8,417	
Cass	15,376	15,376			15,343	21,353	21,353			21,409	20,110	20,110		10,744	
Cherokee	15,176	15,176			15,300	20,374	20,374			20,516	14,434	14,434		14,545	
Childress	255	255			255	1,380	1,380			1,330	1,150	1,150		1,150	
Clay	3,346	3,346			3,346	7,689	7,689			7,761	7,856	7,856		7,936	
Coke	1,318	1,318			1,345	4,696	4,696			4,820	1,761	1,761		1,794	
Coleman	7,773	7,773			8,089	18,224	18,224			19,371	7,616	7,374	242	7,684	
Collin	58,830	42,971	10,859		49,077	82,934	54,179	28,755		70,963	68,549	49,078	19,471	60,049	
Colorado	29,795	28,155	1,640		30,923	8,197	8,198	11		8,759	16,716	16,481	235	17,886	
Comal	11,304	11,304			11,997	19,475	19,475			20,854	8,468	8,468		8,911	
Comanche	23,196	23,196			23,797	46,366	46,366			47,777	23,409	23,409		23,907	
Concho	40	40			42	166	166			173					
Cooke	11,815	11,515	300		11,905	18,249	18,249			18,751	20,846	17,910	2,436	19,561	
Coryell	22,557	18,167	4,400		20,702	29,346	29,346			30,868	17,248	15,242	2,006	17,041	
Cottle	165	165			173	710	710			710	738	738		812	
Dallas	42,512	39,124	3,388		41,012	66,362	51,809	14,553		59,970	44,822	36,471	7,852	40,818	
Delta	23,940	23,766	184		24,705	34,905	34,905	215		36,358	30,435	30,435		31,474	
Denton	24,824	14,947	9,877		20,381	50,830	24,577	26,253		30,092	44,549	25,352	19,197	35,180	
Dewitt	23,906	17,307	11,599		23,440	32,447	23,826	8,621		29,058	26,462	19,150	6,312	22,730	
Duval	819	819			853	1,694	1,694			1,708	644	644		653	
Eastland	16,840	14,600	1,740		15,611	39,704	35,955	3,749		38,164	25,999	23,933	2,016	25,453	
Edwards	4	4			4	94	94			94	276	276		276	
Ellis	93,685	71,774	21,911		86,639	138,104	104,645	33,459		126,134	82,437	71,520	10,917	79,434	
Erath	20,520	20,620			21,211	43,415	41,326	2,089		44,097	27,880	24,882	2,998	26,977	
Falls	52,196	39,592	12,604		48,416	68,464	48,710	19,754		61,450	51,922	40,994	10,923	43,427	
Fannin	61,063	54,190	6,873		59,802	102,019	92,243	9,776		101,027	82,839	78,867	4,522	83,429	
Fayette	71,580	66,115	5,415		73,238	40,575	36,014	4,561		40,832	41,444	40,029	1,415	43,183	
Fisher	745	745			745	3,359	3,359			3,364	1,036	1,036		1,062	
Foard	400	400			408	1,510	1,510			1,542	721	721		750	
Fort Bend	9,057	7,227	1,830		8,256	3,458	2,047	811		3,099	9,650	9,650		9,357	
Franklin	8,527	8,527			8,659	10,533	10,533			10,820	7,003	7,003		7,052	
Freestone	19,705	19,705			20,138	28,603	28,603			29,180	20,390	20,390		20,763	
Frio	2,480	2,480			2,590	7,529	7,529			7,917	4,930	3,817	1,113	4,464	
Galveston	794	794			761	356	356			356	965	965		930	
Gillespie	6,076	6,076			6,333	12,360	12,360			12,956	7,335	7,335		8,216	
Goliad	7,192	7,192			7,435	11,192	11,192			11,513	9,204	4,836	4,368	6,951	
Gonzales	42,229	42,229			44,131	37,032	37,032			38,507	29,233	28,208	1,030	29,737	
Grayson	45,281	35,911	9,370		40,871	70,074	54,501	15,573		63,480	79,611	56,512	23,099	67,650	
Gregg	6,234	6,234			6,194	7,841	7,841			7,810	7,539	7,539		7,525	
Grimes	25,695	25,695			26,541	11,332	11,431	351		11,981	16,037	15,499	538	16,141	
Guadalupe	29,429	23,874	6,555		28,114	59,981	48,279	11,702		56,638	24,904	21,563	3,341	24,285	
Hall	113	113			113	717	717			717	752	752		752	
Hamilton	15,263	13,870	1,398		15,070	26,759	26,759			27,956	12,881	12,881		13,275	
Hardeman	1,335	1,335			1,335	3,700	3,700			3,843	2,133	2,133		2,133	
Hardin	89	89			83	151	151			149	101	101		101	
Harris	5,532	5,532			5,859	2,047	2,047			2,118	5,055	2,846	2,209	4,063	
Harrison	19,611	19,611			19,663	28,257	28,257			28,351	21,776	21,776		21,640	
Haskell	830	830			830	2,510	2,510			2,510	1,370	1,370		1,956	
Hays	24,161	20,974	3,187		23,737	34,299	26,191	8,108		31,652	19,136	13,954	5,232	17,197	
Hemphill	40	40			40	285	285			285	285	285		285	
Henderson	15,394	15,394			16,093	21,821	21,821			22,181	12,568	12,568		12,605	
Hidalgo					285	285	285			285	285	285		285	
Hill	62,493	49,753	12,740		59,070	97,209	67,354	29,855		85,060	55,751	47,837	7,864	53,798	
Hood	3,952	7,496	856		7,941	13,584	15,404	3,120		17,244	10,593	8,523	2,070	9,589	
Hopkins	24,567	24,567			24,710	49,011	49,011			49,248	30,653	30,653		30,693	
Houston	25,625	25,625			26,154	26,671	26,671			27,254	25,334	25,334		25,965	
Howard	5	5			5	300	300			300	450	450		450	
Hunt	52,937	46,754	6,233		50,317	97,574	66,495	31,079		83,752	79,823	47,608	32,220	64,595	
Jack	3,161	3,161			3,172	6,301	6,301			6,302	4,440	4,440		4,444	
Jackson	3,195	3,195			3,325	1,197	1,197			1,267	3,455	3,455		3,537	
Jasper	1,334	1,334			1,322	2,435	2,435			2,412	2,978	2,978		2,910	
Johnson	26,844	25,003	1,776		26,334	45,307	37,717	7,590		42,790	32,673	27,946	4,727	29,623	
Jones	4,401	4,401			4,401	7,345	7,345			7,495	10,120	10,120		10,411	
Karnes	12,314	12,314			12,515	22,797	22,797			22,926	12,296	12,296		12,491	
Kaufman	55,273	48,034	7,239		53,429	79,412	74,246	5,166		79,171	53,845	48,713	5,127	51,710	
Kendall	1,856	1,856			1,878	3,912	3,912			3,994	3,062	3,062		3,198	
Kent	189	189			189	104	104			105	198	198		203	
Kerr	778	778			789	1,250	1,250			1,270	1,182	1,182		1,204	
Kimble	634	634			634	1,062	1,062			1,067	834	834		834	
Knox	341	341			341	2,578	2,578			2,601	2,041	2,041		2,114	
Lamar	49,221	46,969	2,252		49,193	87,393	36,542	351		89,415	56,089	54,736	1,353	56,197	
Lampasas	4,484	4,484			4,562	7,794	7,794			8,166	4,151	4,151		4,356	
Lavaca	39,074	38,982	92		42,434	23,226	23,226	4,968		23,058	27,003	24,931	2,022	27,675	
Lee	22,304	17,399	5,405		21,486	12,133	8,970	3,163		10,963	13,232	9,166	4,116	11,565	
Leon	21,369	21,369			21,773	22,130	20,452	1,678		21,925	19,518	17,313	2,200	18,433	
Liberty	3,475	3,475			3,376	2,222	2,222			2,179	2,218	2,218		2,125	
Limestone	49,539	48,024	1,515		49,790	60,382	58,347	2,035		62,232	46,529	45,553	976	47,430	



TABLE 8.—QUANTITY OF COTTON GINNED FROM CROPS GROWN IN 1899, 1900, AND 1901, BY STATES AND COUNTIES—  
Continued.

VIRGINIA.

COUNTIES.	CROP OF 1899.				EQUIVA- LENT 500- POUND BALES.	CROP OF 1900.				EQUIVA- LENT 500- POUND BALES.	CROP OF 1901.				EQUIVA- LENT 500- POUND BALES.
	Commercial bales.					Commercial bales.					Commercial bales.				
	Total.	Square.	Round.	Sea island.		Total.	Square.	Round.	Sea island.		Total.	Square.	Round.	Sea island.	
The State.....	9,239	9,239	.....	.....	8,622	11,833	11,833	.....	.....	11,022	14,009	14,009	.....	.....	12,916
Brunswick .....	3,190	3,190	.....	.....	2,851	3,602	3,602	.....	.....	3,323	3,170	3,170	.....	.....	2,692
Greensville.....	1,902	1,902	.....	.....	1,831	2,771	2,771	.....	.....	2,663	2,360	2,360	.....	.....	2,179
Mecklenburg.....	250	250	.....	.....	230	995	995	.....	.....	912	1,145	1,145	.....	.....	1,067
Nansemond.....	230	230	.....	.....	220	197	197	.....	.....	185	333	333	.....	.....	310
Norfolk.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,294	1,294	.....	.....	1,277
Pittsylvania.....	.....	.....	.....	.....	.....	2	2	.....	.....	2	.....	.....	.....	.....	110
Prince George.....	78	78	.....	.....	67	60	60	.....	.....	54	71	71	.....	.....	60
Southampton.....	2,220	2,220	.....	.....	2,079	3,133	3,133	.....	.....	2,936	4,184	4,184	.....	.....	4,033
Sussex.....	1,369	1,369	.....	.....	1,244	1,073	1,073	.....	.....	947	1,452	1,452	.....	.....	1,288

<sup>1</sup> Includes 5,000 pounds in Pittsylvania county, not baled.

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FLOURING AND GRIST MILL PRODUCTS.

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# FLOURING AND GRIST MILL PRODUCTS.

By Dr. H. W. WILEY, *Expert Special Agent.*

In this report on flouring and grist mill products of the United States the data presented comprise the general statistics of the milling industry, with a comparison by decennial periods from 1850 to 1900. The statistics include the number of establishments engaged in milling cereal products, capital invested, number of

salariated officials and clerks, amount paid in salaries, number of wage-earners, and the amount of wages paid, miscellaneous expenses attending the manufacture, cost of materials used, and the value of the products, with percentages of increase for each decade. These are summarized in Table 1.

TABLE 1.—COMPARATIVE SUMMARY, 1850 TO 1900, WITH PER CENT OF INCREASE FOR EACH DECADE.

	DATE OF CENSUS.						PER CENT OF INCREASE.				
	1900	1890	1880	1870	1860	1850	1890 to 1900	1880 to 1890	1870 to 1880	1860 to 1870	1850 to 1860
Number of establishments .....	25,258	18,470	24,338	22,573	13,868	11,891	36.8	124.1	7.8	62.8	16.6
Capital.....	\$218,714,104	\$208,478,500	\$177,361,878	\$151,565,376	\$84,585,004	\$54,415,581	4.9	17.5	17.0	79.2	55.4
Salariated officials, clerks, etc., number.....	5,790	216,078	(3)	(3)	(3)	(3)	164.0	(3)	(3)	(3)	(3)
Salaries.....	\$5,404,750	\$8,897,340	(3)	(3)	(3)	(3)	189.3	(3)	(3)	(3)	(3)
Wage-earners, average number.....	37,073	47,403	58,407	58,448	27,682	23,310	121.8	118.8	10.1	111.1	18.8
Total wages.....	\$17,703,418	\$18,138,402	\$17,422,316	\$14,577,533	\$8,721,391	\$5,680,164	12.4	4.1	19.5	67.1	53.5
Men, 16 years and over.....	30,419	46,889	55,239	57,795	27,626	23,260	122.3	119.5	0.8	109.2	18.8
Wages.....	\$17,540,370	\$18,046,465	(3)	(3)	(3)	(3)	12.8	(3)	(3)	(3)	(3)
Women, 16 years and over.....	497	308	42	91	56	50	61.4	633.3	163.8	62.5	12.0
Wages.....	\$142,911	\$70,153	(3)	(3)	(3)	(3)	103.7	(3)	(3)	(3)	(3)
Children, under 16 years.....	157	206	126	562	(3)	(3)	23.8	63.5	177.6	(3)	(3)
Wages.....	\$20,137	\$21,784	(3)	(3)	(3)	(3)	17.6	(3)	(3)	(3)	(3)
Miscellaneous expenses.....	\$10,825,588	\$13,152,087	(4)	(4)	(4)	(4)	21.6	(3)	(3)	(3)	(3)
Cost of materials used.....	\$475,826,345	\$484,152,290	\$441,545,225	\$367,392,122	\$206,497,309	\$113,636,698	9.6	11.7	20.2	76.2	54.5
Value of products.....	\$560,719,068	\$513,971,474	\$505,185,712	\$444,985,143	\$248,530,365	\$136,056,736	9.1	1.7	13.5	79.0	82.7

<sup>1</sup>Decrease.

<sup>2</sup>Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this table. (See Table 7.)

<sup>3</sup>Not reported separately.

<sup>4</sup>Not reported.

The most rapid increase in the number of establishments was in the decennial period from 1860 to 1870. From 1880 to 1890 there was a very marked decrease. This decrease was due, not to any diminution in the importance of the industry, as will be seen by referring to the amount of capital invested, but rather to the tendency to combine into single establishments many of the smaller mills. The milling industry, like every other, illustrates the well-established fact that greater economy in manufacture can be secured in a small number of large mills than in a large number of small mills. Thus, while there was a decrease of 5,868 in the number of mills from 1880 to 1890, there was a large increase in the capital invested and a small increase in the value of products. It is true there was a decided fall in the prices of materials from 1880 to 1890, so that the actual cost of the materials, even if used in increased quantities, in 1890 was somewhat less than in 1880, but by improvement in the milling processes and the utilization of by-products the actual value of

products was considerably increased. In a comparison of the decennial periods from 1890 to 1900, a remarkable increase appears in the number of establishments. This was due, not only to the building of many larger mills, but also to a considerable increase in those of the smaller capacity. The capital invested in 1900 was only 4.9 per cent greater than in 1890. The number of wage-earners in 1900 diminished, owing, principally, to improved processes in handling the grain and products, which lessened the amount of manual labor required. Although the prices of cereals continued to fall from 1890 to 1900, the total amount paid for the raw materials increased 9.6 per cent, because of the increased quantity used. The value of products increased 9.1 per cent. The greatest percentage of increase, 82.7, was from 1850 to 1860, but the greatest absolute increase, \$196,404,778, was during the decade ending with 1870. The value of products includes the value of the grist of all kinds ground for customers as well as for the market. The value of materials also includes

the value of the custom grist brought to the mill. The amount received for the custom grinding in 1900 is given separately in Table 6.

Table 2 shows, by states, the number of mills, classified according to the annual production, in barrels of wheat flour,<sup>1</sup> 1900.

TABLE 2.—CLASSIFICATION OF MILLS ACCORDING TO ANNUAL PRODUCTION OF WHEAT FLOUR: 1900.

STATES AND TERRITORIES.	Less than 100 barrels.	100 to 499 barrels.	500 to 999 barrels.	1,000 to 4,999 barrels.	5,000 to 19,999 barrels.	20,000 to 99,999 barrels.	100,000 barrels or more.	Total.
United States ..	1,655	2,554	1,316	4,310	2,584	634	135	13,188
Alabama.....	35	75	34	17	3	1	.....	165
Arizona.....	1	.....	1	4	5	1	.....	12
Arkansas.....	16	32	18	71	34	2	.....	173
California.....	4	7	8	30	23	11	6	94
Colorado.....	.....	2	3	12	12	17	1	47
Connecticut.....	13	5	1	.....	.....	.....	.....	19
Delaware.....	9	13	5	27	7	1	.....	62
District of Columbia.....	.....	.....	.....	.....	.....	2	.....	2
Florida.....	1	.....	1	.....	.....	.....	.....	2
Georgia.....	57	194	91	76	9	5	1	433
Idaho.....	.....	1	1	11	17	4	.....	34
Illinois.....	49	50	22	129	131	50	12	443
Indiana.....	36	41	36	245	235	44	8	645
Indian Territory.....	.....	.....	.....	8	12	3	.....	23
Iowa.....	53	43	24	129	107	21	2	379
Kansas.....	34	17	20	73	97	48	13	302
Kentucky.....	57	65	34	170	117	17	1	461
Louisiana.....	.....	.....	.....	.....	.....	.....	.....	1
Maine.....	30	13	5	7	1	.....	.....	56
Maryland.....	15	53	40	128	36	6	2	280
Massachusetts.....	16	7	2	2	.....	.....	.....	27
Michigan.....	33	41	46	236	137	37	4	534
Minnesota.....	15	23	19	93	151	52	24	377
Mississippi.....	7	5	.....	2	.....	.....	.....	14
Missouri.....	58	81	53	330	165	44	9	740
Montana.....	1	1	2	4	7	4	.....	19
Nebraska.....	8	13	16	93	110	18	.....	258
Nevada.....	.....	.....	1	9	1	.....	.....	11
New Hampshire.....	13	8	1	.....	.....	1	.....	23
New Jersey.....	34	31	14	50	27	1	.....	166
New Mexico.....	1	4	2	19	9	.....	.....	35
New York.....	151	129	44	127	80	23	14	571
North Carolina.....	175	423	138	202	36	1	.....	975
North Dakota.....	1	2	2	23	25	17	1	70
Ohio.....	40	66	64	375	232	51	5	883
Oklahoma.....	7	2	1	6	14	13	1	44
Oregon.....	.....	6	9	48	52	13	3	131
Pennsylvania.....	264	355	190	556	185	25	5	1,580
Rhode Island.....	2	3	1	.....	.....	.....	.....	6
South Carolina.....	32	75	46	39	8	1	.....	201
South Dakota.....	1	1	3	27	55	7	.....	94
Tennessee.....	103	197	85	209	98	16	6	719
Texas.....	8	8	5	23	42	25	6	117
Utah.....	.....	.....	1	42	33	3	.....	79
Vermont.....	25	9	1	1	.....	.....	.....	36
Virginia.....	153	301	118	281	56	12	1	922
Washington.....	.....	6	1	12	24	16	4	63
West Virginia.....	64	103	76	151	29	6	.....	428
Wisconsin.....	25	44	30	200	103	16	6	424
Wyoming.....	.....	.....	4	.....	4	.....	.....	8

The total number of flour and grist mills grinding wheat in the United States was 13,188, of which 1,655 belonged to the extremely small class producing less than 100 barrels per annum, while 2,554 produced from 100 to 499 barrels; 1,316 from 500 to 999; 4,310 from 1,000 to 4,999; 2,584 from 5,000 to 19,999; 634 from 20,000 to 99,999; and 135 more than 100,000 barrels. No one class of these mills was limited to any one of the states or territories, and only 23 of the states and territories were represented in the largest class. The largest number of small mills was found in

<sup>1</sup>A barrel equals 196 pounds.

Pennsylvania, and of mills of the greatest capacity in Minnesota. Of mills of the second size, the largest number was found in North Carolina, of the third and fourth sizes in Pennsylvania, and of the fifth size in Ohio. Minnesota led in the number of large mills as well as in value of products. In number of establishments of all kinds Pennsylvania led, with 1,580; North Carolina was second, with 975; Virginia third, with 922; and Ohio fourth, with 883. Among the states and territories having a small number of mills were Wyoming, with 8; Rhode Island, with 6; and the District of Columbia and Florida, with 2 each. There was no state or territory without at least 1 mill of some one of the sizes mentioned. Unless a state or territory had 3 or more establishments of the kind under consideration, no detailed statement is made concerning it.

The comparative statistics of the industry for 1890 and 1900, showing kind, quantity, and value of materials and of products, are given in Table 5. Table 6 is the detailed summary for 1900. These tables present the industry in a comprehensive manner and should be studied with Table 3, which shows the rank of states and territories in 1900, according to establishments, capital, wage-earners, total wages, and quantity of wheat used.

TABLE 3.—RANK OF STATES AND TERRITORIES, BY ESTABLISHMENTS, CAPITAL, WAGE-EARNERS, WAGES PAID, AND QUANTITY OF WHEAT USED: 1900.

STATES AND TERRITORIES.	RANK ACCORDING TO—				
	Number of establishments.	Capital invested.	Number of wage-earners.	Wages paid.	Quantity of wheat used.
Alabama.....	12	35	21	33	36
Arizona.....	47	46	48	46	38
Arkansas.....	20	32	23	30	27
California.....	32	11	16	13	12
Colorado.....	41	25	31	24	21
Connecticut.....	29	28	33	31	46
Delaware.....	37	36	39	40	33
District of Columbia.....	50	47	41	43	39
Florida.....	35	49	47	50	45
Georgia.....	9	23	12	21	26
Idaho.....	45	40	43	41	31
Illinois.....	11	5	6	4	4
Indiana.....	10	7	5	6	3
Indian Territory.....	40	42	40	39	33
Iowa.....	16	12	11	12	17
Kansas.....	18	9	8	8	7
Kentucky.....	7	14	14	14	14
Louisiana.....	39	50	44	47	50
Maine.....	26	31	35	32	43
Maryland.....	21	18	20	20	20
Massachusetts.....	25	26	27	25	41
Michigan.....	13	10	9	9	10
Minnesota.....	19	1	1	1	1
Mississippi.....	27	45	34	45	47
Missouri.....	7	6	7	7	5
Montana.....	46	38	45	38	32
Nebraska.....	23	15	19	16	18
Nevada.....	47	44	50	49	42
New Hampshire.....	31	37	37	35	40
New Jersey.....	22	20	25	22	30
New Mexico.....	44	43	46	44	37
New York.....	5	2	2	2	6
North Carolina.....	2	21	15	23	23
North Dakota.....	34	29	28	26	22
Ohio.....	6	4	3	3	2
Oklahoma.....	42	34	32	29	24
Oregon.....	30	19	23	19	17
Pennsylvania.....	1	3	4	5	8
Rhode Island.....	43	41	42	42	49
South Carolina.....	17	39	30	37	34

TABLE 3.—RANK OF STATES AND TERRITORIES, BY ESTABLISHMENTS, CAPITAL, WAGE-EARNERS, WAGES PAID, AND QUANTITY OF WHEAT USED: 1900—Cont'd.

STATES AND TERRITORIES.	RANK ACCORDING TO—				
	Number of establishments.	Capital invested.	Number of wage-earners.	Wages paid.	Quantity of wheat used.
South Dakota.....	33	27	29	27	26
Tennessee.....	4	18	13	11	11
Texas.....	24	17	18	15	15
Utah.....	38	33	38	34	29
Vermont.....	28	30	36	36	45
Virginia.....	3	15	17	17	19
Washington.....	36	22	22	18	16
West Virginia.....	14	24	26	28	28
Wisconsin.....	16	8	10	10	9
Wyoming.....	49	48	49	48	41

Minnesota ranked first in everything except the number of establishments, in which it ranked eighteenth. New York ranked second in capital invested, number of wage-earners, wages paid, and value of products (see Table 5), sixth in quantity of wheat used, and fifth in number of mills. Ohio was third in number of wage-earners, wages paid, and value of products, second in quantity of wheat used, fourth in capital, and sixth in number of establishments. Indiana was third in quantity of wheat used, seventh in capital, fifth in number of wage-earners, sixth in amount of wages paid and value of products, and ninth in number of establishments. Pennsylvania was third in amount of capital, fourth in number of wage-earners and value of products, fifth in amount of wages paid, eighth in amount of wheat used, and first in number of establishments.

Minnesota's value of products was 14.1 per cent of the total; New York's 7.6 per cent, and Ohio's 6.7 per cent. This was also the order in 1890 except that Pennsylvania had third place, Ohio being fourth. The greatest increase was in Minnesota, \$23,719,621, or 39.4 per cent. New York and Ohio both showed a decrease.

Of the total value of products in 1900, wheat flour constituted 62.1 per cent, compared with 68.3 per cent in 1890, and corn meal 13.1 per cent, compared with 14.9 per cent in 1890. But in quantity, wheat flour increased 26.7 per cent and corn meal 8.5 per cent. Buckwheat and hominy increased in both quantity and value.

Erroneous impressions are likely to be created if attention be given to number of establishments alone. In many parts of the United States, where the milling industry is confined to the local demand, there are large numbers of small establishments, and this seems to be necessary for the convenience of the people. On the other hand, in those sections where milling is one of the principal industries, the establishments are on a very large scale. For this reason a just idea of the manufacture would not be secured by comparing, for instance, the number of flouring and grist mills in

Minnesota, 512, with the number in Missouri, 1,145, for Minnesota ranks first in value of products and Missouri sixth. The largest number of establishments, 2,719, in any one state was found in Pennsylvania. The capital invested was \$19,516,993, and the total average number of wage-earners 2,195, or less than 1 for each establishment. The smallest number of establishments was in the District of Columbia, where 9 mills were in operation, with a capital of \$198,065, employing 84 wage-earners.

In order to form a correct idea of the magnitude of the milling industry in any given locality, it will be sufficient to compare with the number of establishments the capital invested and the number of wage-earners employed. For instance, in the state of Minnesota there were 512 milling establishments, representing a capital of \$24,125,781, and employing 4,086 wage-earners. The average capital invested for each establishment was \$47,121, and the average number of wage-earners for each establishment was 8. Compare with this some other locality having approximately the same number of establishments, for instance, Arkansas: The total number of establishments in Arkansas was 410, representing a capital of \$1,183,052, the number of wage-earners was 443, the average capital for each establishment was \$2,885, and the average number of wage-earners for each establishment was 1. Again, in the case of South Carolina, the total number of establishments was 556, the capital invested was \$652,553, the number of wage-earners was 281, the average amount of capital invested for each establishment was \$1,174, and the average number of wage-earners was only about equal to 1 for every 2 establishments in operation.

It may also be well to briefly compare in a few instances the different quantities of materials used in the various states, as shown in detail in Table 5. The total quantity of wheat used in the flouring and grist mill industry in the United States during the census year was 489,914,004 bushels, and the cost \$317,933,257. Of Indian corn the total number of bushels used was 241,029,249, and the cost \$93,892,609. It is interesting to note that the amount of Indian corn milled was almost exactly half the quantity of wheat, but it must not be forgotten that practically all the flour produced from wheat which was milled entered into consumption as human food, while a large quantity of the Indian corn (the exact amount is not stated in the data) was used for cattle food. It is evident, therefore, that although the United States is, in proportion to its population, the greatest consumer of Indian corn for human food, the amount so consumed does not reach one-half of the quantity of wheat used for the same purpose. The quantity of other cereals is given in detail only in the case of rye, buckwheat, and barley, of which the quantities and values were, of rye, 12,720,812 bushels, costing \$6,446,705, of buckwheat, 8,317,357 bushels, costing \$4,438,480, and of barley, 12,289,036 bushels, costing \$4,460,695. Oats, and other cereals are grouped together, form-

ing a grand total of 70,873,167 bushels at a cost of \$19,103,524. Practically all the buckwheat used goes into human consumption, while the barley is doubtless largely consumed in the brewing industry. In the case of Minnesota the number of bushels of wheat used was 102,921,426, and the number of bushels of Indian corn, 4,226,426. In Arkansas the number of bushels of wheat used was 2,912,566, and of Indian corn 2,487,206 bushels. In South Carolina the number of bushels of wheat used was 1,000,964, and of Indian corn 1,861,093. Minnesota led the states in the quantity of wheat used, 102,921,426 bushels, and New York in the quantity of Indian corn, 22,469,249 bushels. Other states showing large quantities of Indian corn used are Pennsylvania, 20,587,926 bushels; Illinois, 16,413,864 bushels; Indiana, 14,297,771 bushels; Ohio, 12,609,084 bushels; Kansas, 12,427,741 bushels; Tennessee, 12,151,242 bushels, and Missouri, 11,842,365 bushels. The states which used more Indian corn than wheat are shown in the following table:

STATES GRINDING MORE INDIAN CORN THAN WHEAT: 1900.

STATES.	Indian corn (bushels).	Wheat (bushels).
Alabama	4,288,689	661,684
Connecticut	3,008,483	27,924
Delaware	882,216	740,128
District of Columbia	700,886	314,502
Florida	441,868	5,022
Georgia	7,255,621	4,136,857
Louisiana	742,669	3,000
Maine	4,589,793	184,894
Massachusetts	9,718,561	27,840
Mississippi	1,609,736	16,920
New Hampshire	3,608,644	313,324
New Jersey	5,156,897	2,404,670
North Carolina	6,018,505	4,549,396
Rhode Island	2,627,989	5,802
South Carolina	1,861,093	1,000,964
Vermont	4,749,004	33,523
West Virginia	3,080,190	2,813,985

The relative proportion of Indian corn and wheat ground in the states mentioned does not indicate the relative consumption of Indian corn and wheat bread. In many of the states, especially in the South, the Indian-corn bread is an article of almost universal consumption, and is probably eaten to as large an extent as wheat bread. In others the quantity of wheat flour manufactured is small, but it is extensively used for bread, being bought from millers elsewhere.

Table 4 shows the character of work done by mills, 1900, by states and territories, whether all merchant, custom or exchange, or both.

TABLE 4.—CLASSIFICATION OF MILLS BY CHARACTER OF WORK DONE, BY STATES AND TERRITORIES: 1900.

STATES AND TERRITORIES.	Total.	Merchant only.	Custom or exchange only.	Both custom or exchange, and merchant.
United States.....	25,258	2,620	14,905	7,733
Alabama	781	11	735	35
Arizona	11	6	1	5
Arkansas	410	18	337	55
California	124	71	11	42
Colorado	60	36	10	14

TABLE 4.—CLASSIFICATION OF MILLS BY CHARACTER OF WORK DONE, BY STATES AND TERRITORIES: 1900—Continued.

STATES AND TERRITORIES.	Total.	Merchant only.	Custom or exchange only.	Both custom or exchange, and merchant.
Connecticut	208	31	69	108
Delaware	83	9	25	49
District of Columbia	9	8	1	4
Florida	95	4	87	4
Georgia	1,123	22	997	104
Idaho	34	6	3	25
Illinois	871	179	459	233
Indiana	897	32	339	476
Indian Territory	61	6	37	18
Iowa	702	32	330	340
Kansas	533	190	137	206
Kentucky	1,145	91	327	227
Louisiana	69	5	64	71
Maine	227	79	77	165
Maryland	407	34	208	165
Massachusetts	231	75	59	97
Michigan	765	111	324	330
Minnesota	512	98	192	222
Mississippi	225	9	210	5
Missouri	1,145	221	547	377
Montana	20	12	3	5
Nebraska	305	85	69	151
Nevada	11	6	2	3
New Hampshire	149	23	41	85
New Jersey	354	62	122	170
New Mexico	35	3	15	17
New York	1,513	103	604	716
North Carolina	1,778	27	1,546	200
North Dakota	97	13	81	53
Ohio	1,150	150	408	592
Oklahoma	55	19	15	21
Oregon	153	54	38	61
Pennsylvania	2,719	186	1,362	1,171
Rhode Island	47	10	12	25
South Carolina	556	8	534	14
South Dakota	120	24	30	66
Tennessee	1,618	96	1,311	211
Texas	289	59	157	73
Utah	80	13	13	54
Vermont	211	15	78	118
Virginia	1,726	83	1,370	273
Washington	85	32	18	35
West Virginia	737	40	558	139
Wisconsin	717	60	390	267
Wyoming	10	4	2	4

The custom or exchange mills constituted 59 per cent of the total. In these North Carolina led with 10.4 per cent, Virginia was second with 9.2 per cent, and Pennsylvania third with 9.1 per cent. The all-merchant mills were 10.4 per cent of the total. Missouri led in these with 8.4 per cent, Kansas was second with 7.3 per cent, and Pennsylvania third with 7.1 per cent. The mills grinding on both plans comprised 30.6 per cent of the total. Pennsylvania led in these with 15.1 per cent, New York was second with 9.3 per cent, and Ohio third with 7.7 per cent.

There is a marked distinction between merchant and custom mills, but it is not always practicable to observe this statistically. Custom mills, in a broad sense, are those grinding wheat, corn, rye, and other grain furnished from farms of the neighborhood, and are usually denominated grist mills. Merchant mills, generally speaking, are large manufacturing establishments supplying the home market and exporting flour to the principal foreign countries. To avoid an arbitrary division between merchant and custom mills, and yet to show the operations of the large manufacturing establishments constituting the milling industry of the

FLOURING AND GRIST MILL PRODUCTS.

United States, certain principal statistics of all mills producing wheat flour in 1900 have been segregated and are presented by states, ranked according to value of products, in the table following. A comparatively small number of mills grind a comparatively large percentage of the wheat ground in the United States. Accepting this statement as a basis, the statistics are,

therefore, practically those of the milling industry. The number of establishments includes all mills in which wheat flour was the product of chief value in states having a product of \$1,000,000 and over. The table gives also the number of bushels and cost of wheat used; the average bushels per barrel; and the average daily production.

TABLE 5.—CLASSIFICATION OF MERCHANT MILLS AS PRODUCERS OF WHEAT FLOUR, BY STATES, HAVING A PRODUCT OF \$1,000,000 AND OVER, IN ORDER OF THEIR RANK: 1900.

STATES AND TERRITORIES.	Rank.	Number of establishments.	RAW MATERIAL, WHEAT.		PRODUCTS, FLOUR.		Average daily production (barrels).	Average value per barrel.	Average bushels of wheat per barrel.	Average cost per bushel (cents).
			Bushels.	Cost.	Barrels.	Value.				
Total .....		8,987	481,658,179	\$812,632,026	101,823,820	\$342,119,777	87	\$3.36	4.7	65
Minnesota .....	1	324	102,921,426	66,641,825	22,705,165	72,381,659	234	3.19	4.5	65
Ohio .....	2	744	85,033,213	24,370,443	7,366,474	26,060,827	33	3.54	4.8	70
Illinois .....	3	404	27,566,764	18,382,716	6,078,423	20,813,984	50	3.42	4.5	67
Indiana .....	4	592	29,192,680	19,188,538	5,818,392	20,384,714	33	3.50	5.0	66
New York .....	5	205	25,232,677	18,432,502	5,434,827	19,928,981	38	3.67	4.6	73
Missouri .....	6	593	25,368,939	16,263,077	5,245,421	17,800,204	28	3.30	4.8	64
Pennsylvania .....	7	1,135	22,923,795	16,179,063	4,775,166	17,059,265	11	3.57	4.8	71
Wisconsin .....	8	313	22,356,963	14,869,326	4,750,253	15,496,295	49	3.26	4.7	66
Kansas .....	9	260	23,459,171	13,157,846	5,034,251	15,089,529	65	3.00	4.7	56
Michigan .....	10	479	20,121,661	13,855,780	4,012,867	14,899,096	28	3.71	5.0	69
Tennessee .....	11	337	16,546,155	11,773,868	3,512,985	18,220,609	35	3.76	4.7	71
Kentucky .....	12	336	12,325,621	8,294,690	2,549,947	9,341,759	25	3.66	4.8	67
Texas .....	13	95	12,228,132	8,046,610	2,604,554	8,881,359	9	3.41	4.7	66
Iowa .....	14	327	12,521,953	7,005,972	2,503,390	8,244,050	26	3.29	5.0	56
California .....	15	90	12,786,110	7,649,433	2,660,238	7,952,867	99	2.99	4.8	60
Virginia .....	16	317	8,562,519	6,025,314	1,758,946	6,671,815	18	3.79	4.9	70
Maryland .....	17	235	7,081,937	4,972,234	1,475,416	5,418,734	21	3.67	4.8	70
Nebraska .....	18	242	8,687,731	4,546,481	1,821,107	5,319,911	25	2.92	4.8	52
Oregon .....	19	124	8,847,242	4,403,043	1,826,512	4,769,573	49	2.61	4.3	50
Washington .....	20	57	8,887,996	4,302,920	1,868,730	4,758,004	109	2.55	4.8	48
North Carolina .....	21	551	4,549,396	3,609,061	945,761	4,047,340	6	4.28	4.8	79
Georgia .....	22	271	4,136,857	2,380,435	789,191	3,481,754	10	4.35	5.2	70
North Dakota .....	23	66	4,827,477	2,756,484	1,029,070	3,274,958	52	3.18	4.7	57
Colorado .....	24	46	4,869,453	2,716,924	1,012,331	3,063,100	73	3.03	4.8	56
West Virginia .....	25	334	3,813,985	2,680,322	767,160	2,969,298	8	3.37	5.0	70
Oklahoma .....	26	30	4,516,853	2,440,518	975,870	2,855,216	108	2.93	4.6	54
South Dakota .....	27	30	4,427,426	2,380,313	915,541	2,695,024	38	2.94	4.8	54
Arkansas .....	28	153	2,912,566	1,840,529	605,702	2,005,295	13	3.31	4.8	63
New Jersey .....	29	119	2,404,670	1,743,080	463,338	1,871,129	13	4.01	5.2	72
Utah .....	30	72	2,546,301	1,217,169	513,692	1,413,423	24	2.75	5.0	48

Table 6 is a detailed summary of flour and grist milling, by states and territories, 1900.

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MANUFACTURES.

TABLE 6.—COMPARATIVE SUMMARY, BY STATES

STATES AND TERRITORIES.	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.	Average number.	Wages.	Average number.	Wages.	Average number.	Wages.
1 United States...	{ 1900 1890	25,258 18,470	\$218,714,104 208,473,500	5,790 116,078	\$5,404,750 18,897,940	37,073 47,408	\$17,703,418 18,188,402	36,419 46,889	\$17,540,370 18,046,465	497 308	\$142,911 70,158	157 206	\$20,137 21,784
2 Alabama .....	{ 1900 1890	781 702	1,047,961 1,410,730	39 399	22,691 109,325	540 1,043	92,858 157,134	599 1,034	92,708 156,072			1 6	150 282
3 Arizona .....	{ 1900 1890	11	221,112	11	9,125	36	19,970	36	19,970				
4 Arkansas .....	{ 1900 1890	410 376	1,183,052 975,616	86 260	21,526 62,361	448 742	116,445 107,439	440 734	116,253 107,121			3 8	192 318
5 California .....	{ 1900 1890	124 101	6,552,642 6,126,305	199 189	269,866 258,391	857 855	525,401 559,800	825 842	516,144 555,318	27 7	8,357 2,860	5 5	900 1,122
6 Colorado .....	{ 1900 1890	60 33	2,040,774 2,135,085	92 45	78,445 50,226	273 246	169,958 149,554	277 245	168,608 149,242	1	750		312
7 Connecticut .....	{ 1900 1890	208 177	1,565,478 1,516,008	42 164	26,621 96,908	233 286	99,309 128,659	227 284	97,554 128,384	6 1	1,755 200	1	75
8 Delaware .....	{ 1900 1890	88 56	1,017,508 1,127,592	20 51	17,796 34,401	135 150	48,928 55,691	134 147	48,728 55,091			1 3	200 600
9 District of Columbia...	{ 1900 1890	9 6	198,065 698,417	18 25	13,450 27,218	84 124	30,848 58,500	84 124	30,848 58,500				
10 Florida .....	{ 1900 1890	95 60	123,416 143,884	4 35	3,500 9,845	46 155	7,967 20,593	45 154	7,927 20,543			1	40
11 Georgia .....	{ 1900 1890	1,123 719	2,504,033 2,347,335	88 316	58,908 103,378	1,167 1,078	225,933 197,984	1,154 1,055	225,223 196,486			13 21	710 1,322
12 Idaho .....	{ 1900 1890	84 13	569,107 223,405	20 11	14,170 7,490	76 52	46,453 23,843	75 52	46,353 23,843			1	100
13 Illinois .....	{ 1900 1890	871 647	12,062,626 13,101,360	367 335	361,021 567,762	2,111 3,550	1,098,006 1,489,954	2,104 3,506	1,096,454 1,471,364	1 26	800 7,510	6 18	1,252 2,080
14 Indiana .....	{ 1900 1890	897 723	10,784,544 10,022,173	286 355	276,708 520,678	2,124 2,785	1,010,877 1,086,214	2,102 2,763	1,005,415 1,082,048	16 15	4,720 3,266	6 7	742 990
15 Indian Territory .....	{ 1900 1890	61	478,241	26	17,623	119	48,988	119	48,988				
16 Iowa .....	{ 1900 1890	702 441	6,421,073 6,696,759	210 501	160,476 231,458	1,285 1,248	526,479 507,414	1,224 1,213	512,119 502,919	49 24	13,570 3,060	12 11	790 1,435
17 Kansas .....	{ 1900 1890	583 348	8,366,966 7,844,280	281 446	267,737 319,447	1,451 1,623	743,462 734,058	1,441 1,614	741,891 733,039	8 8	1,221 483	2 6	360 535
18 Kentucky .....	{ 1900 1890	1,145 505	4,928,923 4,265,649	171 488	125,969 237,941	1,134 1,328	483,594 395,806	1,131 1,313	483,032 394,663	2 4	442 215	1 11	120 923
19 Louisiana .....	{ 1900 1890	69 19	121,281 33,995	2 7	2,100 813	70 41	11,536 6,806	64 41	11,420 6,806			6	116
20 Maine .....	{ 1900 1890	227 210	1,235,767 1,194,900	18 201	11,560 91,076	192 262	93,820 91,341	192 262	93,820 91,341				
21 Maryland .....	{ 1900 1890	407 395	3,423,996 3,007,730	85 307	80,275 166,290	541 625	229,335 240,063	532 610	228,009 237,648	5 11	883 2,275	4 4	443 140
22 Massachusetts .....	{ 1900 1890	231 238	1,930,927 2,908,303	58 246	33,157 135,229	304 524	161,486 260,924	302 520	161,264 249,306	4	1,018	2	222
23 Michigan .....	{ 1900 1890	765 544	7,933,587 3,472,862	205 573	153,461 386,793	1,423 1,852	718,499 757,068	1,417 1,340	717,354 755,578	1 3	255 658	5 9	390 332
24 Minnesota .....	{ 1900 1890	512 307	24,125,781 19,518,743	606 529	730,667 495,740	4,086 3,509	2,333,836 1,748,115	3,936 3,503	2,332,946 1,747,460	147 3	50,440 555	3 3	450 100
25 Mississippi .....	{ 1900 1890	225 408	225,335 652,663	8 203	1,745 37,243	208 777	27,244 88,050	200 770	26,683 87,775			3 3	556 117
26 Missouri .....	{ 1900 1890	1,145 710	11,402,827 12,630,045	374 344	355,125 562,304	1,654 3,011	851,377 1,249,091	1,611 2,943	835,168 1,235,577	34 52	14,450 12,063	9 16	1,750 1,761
27 Montana .....	{ 1900 1890	20 7	715,139 277,900	26 10	27,100 9,733	67 24	51,371 17,913	67 24	51,371 17,913				
28 Nebraska .....	{ 1900 1890	305 185	4,335,934 3,586,090	138 232	101,721 152,433	698 690	363,637 323,308	656 685	355,060 322,390	37	7,836	5 5	791 918
29 Nevada .....	{ 1900 1890	11	231,247	4	2,700	13	8,536	12	8,456	1	130		
30 New Hampshire .....	{ 1900 1890	149 121	1,004,990 905,075	15 91	10,688 45,053	185 174	82,214 78,737	185 174	82,214 78,737				
31 New Jersey .....	{ 1900 1890	354 228	3,004,408 2,316,221	62 207	42,098 122,233	431 500	219,951 213,343	427 495	219,265 212,339			4	656 804
32 New Mexico .....	{ 1900 1890	35 18	238,735 181,050	2 12	1,500 6,975	52 44	27,458 15,872	52 44	27,458 15,872				

1 Includes proprietors and firm members, with their salaries; number only reported in 1900, but not included in this table. (See Table 7.)  
 2 Included in "all other states and territories."  
 3 No establishments reported.

FLOURING AND GRIST MILL PRODUCTS.

AND TERRITORIES: 1890 AND 1900.

Miscellaneous expenses.	MATERIALS USED.											
	Total cost.	Wheat.		Corn.		Rye.		Buckwheat.		Barley.		
		Bushels.	Cost.	Bushels.	Cost.	Bushels.	Cost.	Bushels.	Cost.	Bushels.	Cost.	
\$10,825,688 18,162,037	\$475,826,345 494,152,290	489,914,004 885,749,798	\$317,933,257 311,508,007	241,029,249 166,293,313	\$93,882,609 71,373,841	12,720,812 12,140,396	\$6,446,705 5,950,454	8,817,857 7,032,277	\$4,438,480 3,464,266	12,289,085 8,696,344	\$4,460,695 4,193,284	1
84,654 56,536	2,787,634 2,471,828	661,684 438,367	505,308 438,367	4,268,639 3,765,917	2,128,021 1,972,218	9,976 390	5,145 252	190	135	40	28	2
15,053	382,055	320,214	228,648	17,654	9,740					195,888	87,156	3
44,681 58,898	3,029,236 2,041,537	2,912,566 1,046,698	1,840,529 802,945	2,487,206 2,682,541	1,010,523 1,145,344	4,173 508	1,770 334	105 79	32 59	10 670	5 375	4
246,409 434,921	11,077,482 12,047,810	12,786,110 10,183,420	7,649,433 8,116,556	927,500 479,839	492,910 311,493	88,024 88,432	48,603 65,073	14,402 45,849	14,361 42,537	4,566,341 4,910,253	1,721,635 2,503,390	5
131,790 126,540	3,842,194 3,155,919	4,869,458 8,103,664	2,716,924 2,604,653	1,590,554 423,843	517,584 293,891	26,736 9,216	9,956 4,655	665 4,500	439 3,000	16,515 2,700	0,173 2,225	6
32,083 61,924	1,845,545 2,387,155	27,924 25,504	16,101 21,849	3,003,483 3,770,635	1,393,552 1,902,151	50,213 77,519	26,899 49,323	24,393 46,346	16,710 25,322	1,390 5,867	733 2,578	7
28,038 43,932	980,837 1,464,435	740,123 1,282,629	519,653 1,029,603	882,216 815,393	321,124 333,997	1,292 1,829	686 1,050	15,060 8,266	8,180 5,631		10	8
18,167 30,748	537,690 1,359,833	314,502 913,330	212,760 333,897	700,836 566,714	285,932 230,422	2,300 4,000	1,020 2,080					9
2,160 5,850	242,378 150,135	5,020 16	2,510 16	441,868 271,314	218,627 137,310							10
73,455 103,935	7,004,065 4,356,700	4,136,857 1,724,422	2,880,435 1,602,845	7,255,621 4,734,301	3,637,455 2,576,393	9,431 18,504	6,933 8,544	1,561 620	981 260	400	250	11
23,235 8,270	645,444 8,270	1,307,569 381,154	540,242 240,424	4,436 2,030	2,354 1,165	500	300			137,900 6,340	44,199 4,020	12
560,980 905,299	26,848,791 31,738,747	27,566,764 33,013,591	18,332,716 26,617,398	16,413,864 7,734,102	5,650,082 2,545,683	434,631 356,754	212,033 399,515	176,680 139,162	93,290 73,321	87,461 300,645	30,610 168,542	13
570,330 723,134	25,664,120 26,608,127	29,192,680 27,275,938	19,188,538 21,481,528	14,297,771 9,559,754	4,671,786 3,440,429	211,697 243,241	100,169 103,820	152,455 123,792	73,715 72,113	63,495 12,350	22,866 5,543	14
27,593	1,002,013	1,163,234	690,592	794,391	212,541			11,000	6,600			15
804,256 363,993	11,272,217 9,736,174	12,521,953 3,764,487	7,005,972 6,732,772	6,352,045 4,954,526	1,710,147 1,232,837	453,763 552,958	193,222 209,807	277,593 299,422	143,966 155,309	533,740 251,878	164,527 75,547	16
447,747 599,936	13,595,258 14,235,990	23,459,171 16,693,366	13,157,846 11,641,427	12,427,741 5,938,712	3,075,173 1,440,239	143,145 394,024	69,572 127,463	25,980 40,650	17,372 24,732	33,530 10,250	11,019 3,002	17
295,932 272,833	12,018,998 7,917,917	12,325,621 7,663,433	8,294,690 5,824,050	6,641,306 3,836,239	2,913,853 1,560,265	15,028 27,590	7,064 1,550	378 1,550	235 1,170	5,525 1,110	2,732 628	18
2,717 1,630	325,297 41,836	3,000	2,400	742,639 75,924	264,696 33,938							19
43,336 53,632	2,827,443 2,806,869	134,394 27,527	104,767 28,438	4,539,793 4,744,470	2,036,170 2,439,039	16,152 16,045	9,054 11,430	135,510 73,557	74,603 29,019	49,349 42,763	25,367 24,332	20
225,357 236,607	6,731,805 5,778,873	7,031,937 5,070,425	4,972,234 4,302,746	2,837,711 2,137,955	1,116,787 944,404	134,264 135,034	67,174 66,370	100,148 39,245	50,812 21,461	22,415 17,260	9,314 8,360	21
95,774 169,674	4,312,256 5,959,430	27,340 63,933	20,376 63,417	9,718,561 9,424,537	4,034,552 5,027,843	237,972 123,201	147,823 77,301	13,849 24,746	8,180 12,712	30,940 15,432	30,277 7,936	22
336,484 523,927	19,924,980 19,462,779	20,121,651 19,055,917	13,855,780 15,565,638	8,100,200 4,339,370	2,973,316 1,633,614	649,594 503,000	316,277 225,771	613,292 497,663	333,122 230,753	146,017 276,063	61,919 121,635	23
1,300,270 1,712,017	74,509,733 52,333,807	102,921,426 59,123,929	66,641,825 47,231,697	4,226,426 2,353,507	1,254,815 853,237	455,474 333,031	203,737 142,707	37,065 127,603	47,232 52,093	1,193,063 246,453	310,463 38,517	24
3,302 25,002	305,894 1,009,335	16,920 3,215	14,019 2,363	1,609,736 1,737,653	753,566 950,407							25
520,463 956,124	21,937,507 29,210,639	25,333,939 31,210,111	16,203,077 23,636,561	11,842,335 8,617,433	4,116,539 2,959,190	94,018 141,433	43,740 64,479	45,132 33,930	25,117 20,525	121,735 7,363	44,018 4,144	26
41,516 6,037	318,442 237,245	1,231,132 324,000	725,259 223,225	5,503 10	2,352 10	5,435	3,130	27	14	2,195	367	27
171,943 204,134	3,335,719 5,031,363	3,637,731 8,403,491	4,546,431 3,334,912	3,330,234 2,590,366	375,237 572,717	356,960 334,495	143,943 112,767	10,274 63,605	6,162 33,042	63,425 13,350	15,940 6,660	28
5,350	122,315	153,146	101,927	65	75			175	105	24,397	13,400	29
33,034 44,742	2,201,909 2,001,203	313,324 306,560	220,230 290,234	3,603,644 3,313,232	1,547,402 1,615,393	7,070 3,022	5,332 6,036	23,510 16,323	11,535 7,643	10,647 11,332	5,511 7,939	30
102,630 147,020	5,243,121 5,026,694	2,404,070 2,223,030	1,743,030 2,064,539	5,156,397 4,163,116	2,137,045 1,930,560	571,502 332,764	233,533 130,513	216,351 139,473	113,367 73,627	8,096 30,300	2,339 56,330	31
11,009 14,197	413,396 203,607	563,623 233,355	346,352 136,913	41,313 3,442	22,275 6,222					32,000	20,135	32

## MANUFACTURES.

TABLE 6.—COMPARATIVE SUMMARY, BY STATES

STATES AND TERRITORIES.	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.	Average number.	Wages.	Average number.	Wages.	Average number.	Wages.
33 New York .....	{ 1900 1890	{ 1,513 1,235	{ \$23,884,858 21,128,597	{ 388 1,218	{ \$440,929 881,063	{ 2,480 3,339	{ \$1,284,438 1,599,168	{ 2,404 3,355	{ \$1,267,340 1,590,544	{ 85 28	{ \$17,098 7,604	{ 6 6	{ \$1,020 \$1,020
34 North Carolina .....	{ 1900 1890	{ 1,773 1,039	{ 2,905,810 2,334,130	{ 64 597	{ 31,316 185,630	{ 1,019 1,124	{ 213,627 205,946	{ 1,010 1,120	{ 212,962 205,506	{ 1 1	{ 50 50	{ 9 3	{ 665 390
35 North Dakota .....	{ 1900 1890	{ 97 85	{ 1,859,296 1,154,040	{ 57 55	{ 47,750 43,602	{ 298 220	{ 159,335 108,048	{ 298 218	{ 159,335 107,661			{ 2 2	{ 387 387
36 Ohio .....	{ 1900 1890	{ 1,150 910	{ 12,531,150 13,472,455	{ 342 985	{ 302,791 618,923	{ 2,438 3,311	{ 1,220,398 1,389,707	{ 2,393 3,213	{ 1,209,466 1,365,298	{ 41 93	{ 10,547 23,810	{ 4 5	{ 385 604
37 Oklahoma .....	{ 1900 1890	{ 55 55	{ 1,080,661 1,080,661	{ 84 84	{ 66,110 66,110	{ 258 258	{ 125,855 125,855	{ 256 256	{ 125,755 125,755			{ 2 2	{ 100 100
38 Oregon .....	{ 1900 1890	{ 153 86	{ 3,172,997 2,247,389	{ 83 118	{ 38,671 86,564	{ 443 281	{ 246,901 151,371	{ 484 279	{ 242,801 151,206	{ 8 8	{ 4,000 4,000	{ 1 2	{ 100 165
39 Pennsylvania .....	{ 1900 1890	{ 2,719 2,225	{ 19,516,993 21,079,642	{ 270 1,771	{ 206,001 832,190	{ 2,195 3,378	{ 1,061,889 1,269,991	{ 2,180 3,349	{ 1,059,307 1,265,619	{ 9 9	{ 1,719 1,719	{ 15 20	{ 2,562 2,653
40 Rhode Island .....	{ 1900 1890	{ 47 31	{ 532,211 391,102	{ 20 37	{ 14,006 27,555	{ 80 98	{ 37,678 48,697	{ 80 97	{ 37,678 48,447			{ 1 1	{ 250 250
41 South Carolina .....	{ 1900 1890	{ 556 512	{ 652,553 984,791	{ 22 276	{ 8,843 77,331	{ 281 630	{ 70,458 86,416	{ 281 626	{ 70,458 86,162			{ 4 4	{ 254 254
42 South Dakota .....	{ 1900 1890	{ 120 62	{ 1,754,752 1,128,554	{ 53 74	{ 47,950 50,634	{ 295 251	{ 155,742 116,366	{ 294 248	{ 155,342 115,976	{ 3 3	{ 390 390	{ 1 1	{ 400 400
43 Tennessee .....	{ 1900 1890	{ 1,618 913	{ 5,931,037 4,964,437	{ 219 633	{ 192,481 240,054	{ 1,154 1,417	{ 544,722 402,958	{ 1,144 1,413	{ 543,181 402,698	{ 1 1	{ 25 25	{ 10 3	{ 1,541 255
44 Texas .....	{ 1900 1890	{ 289 690	{ 4,273,490 4,052,802	{ 135 339	{ 145,698 122,940	{ 705 1,625	{ 398,908 409,000	{ 705 1,615	{ 398,908 408,652			{ 10 10	{ 308 308
45 Utah .....	{ 1900 1890	{ 80 49	{ 1,101,885 884,098	{ 50 44	{ 32,820 29,043	{ 167 133	{ 32,979 65,285	{ 166 138	{ 32,666 65,285			{ 1 1	{ 313 313
46 Vermont .....	{ 1900 1890	{ 211 217	{ 1,289,497 1,348,356	{ 29 164	{ 20,664 67,281	{ 190 251	{ 81,363 95,685	{ 187 250	{ 80,818 95,485	{ 2 1	{ 445 250	{ 1 1	{ 100 100
47 Virginia .....	{ 1900 1890	{ 1,726 1,179	{ 4,682,688 5,498,057	{ 101 725	{ 67,665 274,137	{ 790 1,475	{ 328,893 383,454	{ 783 1,470	{ 327,515 382,702	{ 4 1	{ 1,000 96	{ 3 4	{ 378 656
48 Washington .....	{ 1900 1890	{ 85 38	{ 2,693,282 1,140,630	{ 107 52	{ 123,198 42,897	{ 488 170	{ 281,310 97,968	{ 474 170	{ 278,450 97,968	{ 12 12	{ 2,400 2,400	{ 2 2	{ 460 460
49 West Virginia .....	{ 1900 1890	{ 737 496	{ 2,126,470 1,767,003	{ 24 385	{ 14,481 136,195	{ 314 545	{ 154,623 140,959	{ 308 544	{ 153,603 140,907	{ 1 1	{ 52 52	{ 6 6	{ 1,020 1,020
50 Wisconsin .....	{ 1900 1890	{ 717 497	{ 9,611,764 9,804,761	{ 226 530	{ 248,657 373,447	{ 1,412 1,770	{ 717,183 799,058	{ 1,398 1,763	{ 714,217 797,708	{ 10 3	{ 2,312 710	{ 4 4	{ 654 640
51 Wyoming .....	{ 1900 1890	{ 10 6	{ 162,675 128,225	{ 8 4	{ 10,240 2,340	{ 14 14	{ 11,860 9,155	{ 14 14	{ 11,860 9,155				
52 All other states and territories. <sup>2</sup>	{ 1900 1890	{ 7 7	{ 122,666 122,666	{ 9 9	{ 6,780 6,780	{ 22 22	{ 10,913 10,913	{ 21 21	{ 10,768 10,768			{ 1 1	{ 150 150

<sup>1</sup>No establishments reported.<sup>2</sup>Includes establishments distributed as follows: Arizona, 5; Indian Territory, 2.

FLOURING AND GRIST MILL PRODUCTS.

AND TERRITORIES: 1890 AND 1900—Continued.

Miscellaneous expenses.	MATERIALS USED.											
	Total cost.	Wheat.		Corn.		Rye.		Buckwheat.		Barley.		
		Bushels.	Cost.	Bushels.	Cost.	Bushels.	Cost.	Bushels.	Cost.	Bushels.	Cost.	
\$1,014,018 1,410,081	\$86,523,959 44,890,115	25,232,677 29,646,319	\$18,432,502 28,326,218	22,469,249 17,608,585	\$9,363,523 8,134,998	1,801,236 2,224,006	\$1,033,432 1,305,976	2,581,749 2,503,512	\$1,436,612 1,225,627	498,608 384,302	\$228,218 182,947	}33
65,895 67,798	7,218,904 4,379,218	4,549,396 2,290,782	3,609,061 2,105,111	6,018,505 3,680,193	3,226,539 2,052,924	108,573 94,461	65,783 53,644	31,958 6,832	16,127 3,757	10,102 4,665	6,403 2,321	
66,890 82,509	3,347,067 2,152,006	4,827,477 2,694,236	2,756,484 1,932,500	219,969 16,200	79,810 5,180	19,140 1,700	7,687 700	415 300	209 150	590,564 39,650	112,844 33,937	}35
626,642 908,517	31,826,750 33,413,856	35,038,213 33,888,137	24,370,443 28,062,966	12,609,084 6,671,231	4,354,850 2,493,151	222,598 349,929	118,706 174,855	186,811 144,373	102,448 78,262	76,554 239,526	27,657 92,939	
86,925	3,026,785	4,516,868	2,440,518	1,318,293	321,230	7,550	3,125	100	50	7,650	1,890	}37
178,784 189,421	5,335,838 3,386,917	8,847,242 4,641,533	4,403,048 2,916,038	64,875 30,497	32,913 17,980	15,938 11,202	9,441 7,518	14,025 5,295	8,948 4,288	788,698 200,971	296,569 106,653	
667,372 865,868	30,566,466 33,238,981	22,923,795 23,694,315	16,179,063 20,986,652	20,587,926 15,684,965	8,195,906 6,741,974	2,263,274 2,096,246	1,198,127 1,118,855	2,526,190 1,755,419	1,277,718 354,146	118,592 116,510	45,057 52,540	}39
22,292 24,012	1,628,852 1,168,188	5,802 11,000	4,081 10,135	2,627,939 1,895,400	1,112,916 1,007,645	10,795 13,188	7,020 9,706	498	304	3,560 1,060	2,201 690	
15,742 31,854	1,958,658 1,726,896	1,000,904 1,202,299	891,161 505,003	1,861,093 1,939,135	988,889 1,164,249	5,140 1,845	4,030 1,412	18 200	18 150	1,450	1,430	}41
75,006 63,283	2,825,781 2,308,721	4,427,426 2,972,445	2,380,818 2,074,345	390,281 194,020	101,099 59,637	34,570 11,100	13,001 5,024	4,875 10,300	2,282 5,630	219,528 10,650	64,040 3,360	
273,851 184,936	18,491,948 10,592,752	16,546,155 8,861,160	11,778,868 7,835,615	12,151,242 5,030,626	5,258,304 2,201,628	11,514 10,158	6,032 6,114	6,130 1,604	3,103 904	2,359 4,275	1,125 1,858	}43
243,390 260,816	10,372,387 8,294,003	12,228,132 7,500,537	8,046,610 6,058,346	3,565,933 3,320,236	1,267,311 1,739,040	22,703 44,939	13,872 31,085			2,700	780	
53,425 30,512	1,401,819 1,160,641	2,546,801 1,410,088	1,217,169 1,033,646	62,258 113,525	31,342 74,262	11,628 7,800	5,541 4,875	125	125	71,877 34,827	33,451 15,622	}45
48,985 49,906	2,679,798 2,452,944	33,523 138,088	24,067 123,361	4,749,004 3,899,929	1,993,429 1,917,546	17,087 13,411	9,750 8,920	45,021 63,168	22,019 30,531	110,787 93,550	50,335 48,643	
145,014 279,669	10,514,361 9,849,144	8,562,519 6,383,523	6,025,314 5,585,865	8,166,932 7,679,773	3,823,645 3,738,633	241,406 194,783	118,454 105,769	129,625 37,578	55,797 21,746	31,196 19,584	13,962 9,636	}47
167,070 35,764	5,803,909 2,013,304	8,887,996 2,423,494	4,302,920 1,619,197	361,690 62,721	174,153 27,836	16,850 120	10,037 65	45 142	23 96	1,243,066 470,305	545,712 230,435	
55,972 64,298	4,555,003 3,228,786	3,813,985 2,464,259	2,680,322 2,127,024	3,030,190 1,861,976	1,409,444 896,645	117,169 48,247	59,214 26,361	233,817 79,952	118,348 46,553	1,568 3,550	767 1,885	}49
697,714 646,648	22,753,056 20,420,677	22,356,963 19,513,549	14,869,326 15,486,331	6,387,488 2,950,515	2,018,065 977,134	3,756,291 2,810,176	1,849,663 1,205,441	545,208 691,193	326,302 291,727	1,101,103 800,354	394,236 315,349	
5,243 6,744	153,735 125,265	226,937 157,703	130,233 113,486	20,000	8,000	3,000	1,000	5,000	1,000	2,925	1,205	}51
7,095	100,813	109,844	88,273	15,661	6,701					2,204	900	

## MANUFACTURES.

TABLE 6.—COMPARATIVE SUMMARY, BY STATES

STATES AND TERRITORIES.	Year.	MATERIALS USED—continued.										
		Other grain.		Barrels purchased.		Sacks purchased.		Cooperage-stock and cloth for sacks.	Fuel.	Rent of power and heat.	Mill supplies.	All other materials.
		Bushels.	Cost.	Number.	Cost.	Number.	Cost.	Cost.	Cost.	Cost.	Cost.	Cost.
1 United States.....	1900	70,873,167	\$19,103,524	16,272,590	\$4,674,636	310,080,914	\$11,664,996	\$1,584,478	\$4,756,782	\$378,790	\$1,695,545	\$4,805,898
	1890	47,104,047	14,970,089	27,605,081	8,849,853	175,147,914	7,208,597		4,816,782	275,291	663,433	1,886,944
2 Alabama.....	1900	44,685	16,385	24,716	6,642	1,394,097	52,657	85	27,898	305	15,174	29,856
	1890	22,095	8,635	76,817	18,990	658,088	42,478		36,230	877	1,593	7,846
3 Arizona.....	1900	2,921	980			281,028	12,852		5,085	220	1,809	36,620
	1890											
4 Arkansas.....	1900	22,600	7,195	5,750	1,585	1,622,808	75,080	19,026	47,661	454	12,029	18,347
	1890	480	384	16,710	4,865	949,178	43,017		40,679	160	2,210	1,215
5 California.....	1900	857,445	295,968	133,743	41,238	9,341,011	410,644	60,000	165,955	33,772	41,193	101,770
	1890	560,543	287,014	34,400	12,835	7,860,638	377,412		218,404	5,350	60,069	47,671
6 Colorado.....	1900	623,450	168,236	40,000	12,000	3,000,361	201,784		47,629		17,773	148,696
	1890	255,300	114,557			1,513,492	116,105		38,738		14,405	29,690
7 Connecticut.....	1900	882,225	279,742	7,400	1,557	319,075	14,386	20	15,514	5,525	7,518	62,288
	1890	714,664	283,486	25,890	5,750	204,050	11,064		13,202	2,181	2,112	67,632
8 Delaware.....	1900	33,646	9,595	65,210	19,223	841,687	20,701	182	13,189	70	6,552	61,682
	1890	24,307	8,744	150,090	44,853	548,170	25,235		11,907	260	2,795	400
9 District of Columbia.....	1900	700	216	43,000	10,360	238,750	5,315	1,000	5,761	3,300	4,201	7,825
	1890			147,850	40,122	161,000	12,380		2,187	1,650	1,400	185,750
10 Florida.....	1900	8,350	6,480			50,100	2,185		2,383		1,344	8,849
	1890	10,400	3,892	300	57	25,400	1,766		4,998		615	976
11 Georgia.....	1900	406,469	119,699	63,300	13,940	5,179,908	171,554	6,204	47,700	1,340	26,784	91,679
	1890	42,238	19,046	72,974	19,185	2,083,488	80,976		35,595	1,900	2,193	9,513
12 Idaho.....	1900	9,798	3,432			633,510	27,811		16,132		5,394	5,580
	1890	14,450	7,097			161,392	5,459		4,336		210	100
13 Illinois.....	1900	2,486,422	575,819	1,286,612	370,502	14,872,456	545,520	239,576	293,347	9,369	96,280	344,647
	1890	3,080,149	966,477	3,216,988	885,375	11,726,183	604,722		336,676	7,040	42,196	84,797
14 Indiana.....	1900	1,200,091	296,417	1,099,456	245,233	16,905,668	505,519	38,848	305,506	5,808	79,024	125,691
	1890	510,241	184,559	1,257,249	592,723	13,546,051	383,675		271,101	8,235	46,002	58,394
15 Indian Territory.....	1900	55,900	10,374			1,091,937	43,036		19,216		4,889	14,765
	1890											
16 Iowa.....	1900	5,859,842	1,289,025	87,695	20,733	10,314,574	349,748	15,843	190,681	6,075	51,936	145,342
	1890	3,624,769	864,637	646,172	84,487	5,267,806	232,715		128,293	1,900	19,087	48,733
17 Kansas.....	1900	604,914	139,521	711,232	90,613	20,024,928	809,531	27,148	239,443	17,552	68,556	271,912
	1890	414,143	85,124	466,136	135,012	11,629,863	517,463		217,961	3,650	34,795	65,082
18 Kentucky.....	1900	107,765	34,566	649,334	160,635	10,130,586	290,337	30,972	143,834	517	43,185	90,722
	1890	42,980	14,987	664,568	191,096	3,942,440	124,560		133,591		16,669	36,192
19 Louisiana.....	1900	16,000	5,600	20	2	367,745	12,259	4,500	3,882		845	31,163
	1890			40	12				1,501	50	80	1,255
20 Maine.....	1900	1,122,965	402,974	1,850	525	105,215	6,480		15,786	5,295	8,017	76,390
	1890	544,190	226,511	355	57	111,462	5,591		18,376	5,150	2,343	20,983
21 Maryland.....	1900	268,809	88,098	588,357	113,913	4,065,830	125,523	30,401	65,052	2,812	22,678	61,512
	1890	202,920	70,255	633,691	206,362	2,418,260	77,449		44,825	2,495	11,627	22,619
22 Massachusetts.....	1900	1,464,429	414,745	3,810	786	433,230	13,370	50	24,896	10,251	9,526	37,474
	1890	1,597,641	633,167	62,025	17,982	436,226	25,406		30,601	5,446	4,869	52,750
23 Michigan.....	1900	4,890,224	1,812,763	915,123	267,739	10,179,872	339,015	100,809	195,736	4,333	52,327	106,844
	1890	2,351,569	693,750	1,621,839	482,966	7,606,345	219,294		203,353	12,080	29,818	39,047
24 Minnesota.....	1900	3,692,772	843,135	4,018,103	1,355,550	47,664,716	2,229,989	60,871	577,275	154,627	352,566	477,543
	1890	1,763,906	497,473	5,661,732	1,866,373	17,994,231	883,645		440,677	161,634	56,561	44,793
25 Mississippi.....	1900	24,500	8,230	17,100	2,185	193,630	9,241		11,163		4,848	3,092
	1890	35,700	15,371	4,750	700	124,500	5,781		28,227		747	5,244
26 Missouri.....	1900	390,433	99,312	691,060	176,864	16,887,761	657,764	55,944	303,067	835	65,669	85,561
	1890	1,129,701	350,706	3,110,493	868,350	14,207,842	653,599		455,995	160	53,632	91,298
27 Montana.....	1900	42,195	14,647			741,399	39,646		8,246	4,800	10,116	9,365
	1890					240,000	12,000		1,050		360	600
28 Nebraska.....	1900	1,624,615	339,538			6,009,627	253,671	6,686	91,099	1,850	33,234	66,873
	1890	649,943	146,189	35,300	9,600	3,111,919	137,522		78,440	650	17,752	26,607
29 Nevada.....	1900					98,493	4,106		1,400		1,485	317
	1890											
30 New Hampshire.....	1900	885,508	304,977	5,250	1,075	1,269,815	14,844	20,068	9,548	813	6,790	53,734
	1890	284,595	109,940	2,099	516	17,825	2,060		7,744	535	1,757	11,301
31 New Jersey.....	1900	2,433,868	736,401	158,666	35,896	2,227,669	69,475	750	34,296	2,200	13,937	59,802
	1890	1,560,819	576,298	51,450	14,968	1,079,243	39,168		24,794	3,000	5,569	36,772
32 New Mexico.....	1900	1,700	700			204,510	10,519	800	8,730		2,457	1,393
	1890			1,200	413	112,600	5,894		8,260		770	130

<sup>1</sup>Included in "all other states and territories."

# FLOURING AND GRIST MILL PRODUCTS.

AND TERRITORIES: 1890 AND 1900—Continued.

PRODUCTS.											
Total value.	Wheat flour.		Rye flour.		Buckwheat flour.		Barley meal.		Corn meal.		
	Barrels.	Value.	Barrels.	Value.	Pounds.	Value.	Pounds.	Value.	Barrels.	Value.	
\$560,719,068 513,971,474	103,524,004 80,948,977	\$348,183,800 350,892,795	1,789,874 2,137,202	\$4,916,001 6,887,704	213,562,952 180,479,108	\$5,065,185 4,266,420	99,730,423 324,864,927	\$1,113,958 3,856,904	40,035,977 36,897,924	\$73,177,402 76,653,478	} 1
3,310,757 3,060,452	144,361 88,209	557,963 451,612	1,961 78	4,810 293	2,400	75	1,500	40	1,034,696 888,558	2,360,562 2,330,382	} 2
455,246	65,617	291,428					5,087,000	64,770	4,498	11,874	} 3
3,708,709 2,498,168	605,702 211,563	2,005,295 949,921	3,070 88	6,707 366	4,100 2,100	62 115	400 10,560	8 475	636,285 645,905	1,134,780 1,319,438	} 4
13,100,944 14,200,320	2,660,233 2,167,333	7,952,867 8,776,205	14,592 14,847	43,681 65,759	552,080 1,364,600	19,574 56,115	59,166,092 209,479,439	572,574 2,521,767	94,592 74,295	221,833 247,416	} 5
4,528,062 3,898,166	1,012,381 657,107	3,063,100 3,041,282	1,028 607	3,635 2,700	1,500 115,000	90 4,500	120,000	2,600	55,246 63,770	105,261 180,047	} 6
2,268,859 2,904,244	2,147 3,799	9,080 21,432	7,514 12,064	23,578 49,640	558,459 1,037,774	16,887 28,466	1,880 166,416	34 1,944	868,555 948,249	1,442,406 2,155,608	} 7
1,165,800 1,075,040	158,032 260,361	605,938 1,082,801	81 339	211 1,005	325,900 235,275	9,384 6,695	1,200	12	165,124 158,735	347,179 847,815	} 8
632,754 1,564,062	65,462 202,050	228,644 992,250	200 600	655 1,800					163,000 141,250	266,500 291,500	} 9
302,737 198,110	804 3	3,022 25							87,437 60,296	200,470 134,523	} 10
8,330,439 5,190,311	789,191 361,206	3,481,754 1,779,258	5,605 2,701	12,698 10,237	71,824 18,500	2,826 469	16,800	293	1,772,859 1,147,769	4,139,498 2,964,606	} 11
832,207 376,946	261,223 76,288	655,097 301,426	100	400			234,000	1,894	460 512	1,272 1,558	} 12
31,006,294 37,974,885	6,078,423 6,877,771	20,813,984 29,088,914	67,302 187,373	194,590 413,170	4,848,087 3,862,751	121,704 101,627	1,428,000 8,645,460	16,722 167,893	2,640,395 1,356,238	2,938,766 2,451,894	} 13
30,150,766 31,239,627	5,818,392 5,646,109	20,384,714 23,921,507	26,068 42,365	76,694 123,039	3,352,458 3,316,860	107,277 95,113	59,321 368,600	2,880 5,063	2,159,432 1,767,253	2,397,633 3,051,905	} 14
1,198,472	240,014	744,139			800,000	7,500			123,624	175,041	} 15
13,823,033 11,833,737	2,503,390 1,732,277	8,244,050 7,715,301	68,964 91,899	162,511 234,534	7,400,760 8,123,505	203,604 206,555	4,290,879 5,795,144	52,511 44,035	726,470 935,348	979,290 1,326,272	} 16
21,926,768 17,420,475	5,034,251 3,495,070	15,089,529 13,709,483	17,490 62,370	46,131 148,940	787,019 1,038,649	28,543 35,299	10,800 203,800	134 2,301	1,225,917 1,276,406	1,713,401 1,646,440	} 17
14,515,161 9,631,259	2,549,947 1,554,011	9,341,759 6,861,585	2,556 5,413	5,623 17,810	15,690 40,000	470 1,523	7,880 52,480	130 767	1,552,655 914,956	3,290,275 1,872,819	} 18
388,326 57,964	600	3,000							151,472 19,006	291,454 51,636	} 19
3,399,832 3,254,690	27,060 5,151	115,975 29,787	1,077 3,342	3,901 13,023	2,742,760 1,586,991	44,650 36,269	1,076,400 1,853,500	16,408 27,187	1,027,588 1,186,020	2,242,262 2,775,566	} 20
8,035,343 6,904,888	1,475,416 1,073,352	5,418,784 4,915,263	9,331 22,930	22,659 73,762	2,149,058 993,066	52,123 26,703	70,400 756,480	1,123 11,395	403,390 520,594	822,292 1,092,018	} 21
5,763,523 6,906,493	7,323 13,700	27,744 12,959	5,750 18,266	19,398 76,014	428,143 672,482	10,882 15,956	252,457 723,140	18,900 9,749	2,443,998 2,599,376	4,477,134 5,697,859	} 22
28,593,991 22,778,329	4,012,367 3,921,363	14,890,096 17,024,535	53,307 81,599	152,884 225,298	16,350,928 12,338,110	345,102 388,812	772,260 8,919,768	15,669 100,137	629,328 765,325	1,197,749 1,393,590	} 23
83,877,709 60,158,088	22,705,165 13,012,005	72,381,659 54,029,614	82,037 61,330	203,731 173,153	2,025,939 3,227,901	52,848 65,978	4,163,150 6,482,600	41,489 62,273	192,522 250,338	292,866 437,667	} 24
932,816 1,249,669	4,696 643	17,755 3,273							355,736 406,653	791,339 1,069,242	} 25
26,303,928 34,486,795	5,245,421 6,588,393	17,800,204 27,056,990	21,345 25,652	43,497 77,734	1,203,933 906,395	32,268 28,974	3,440 266,420	73 7,257	1,822,881 1,900,919	3,219,065 3,371,863	} 26
995,702 302,965	257,085 66,922	852,133 264,066	1,767	4,308	1,080	20			1,481 2	2,980 15	} 27
8,100,794 6,865,492	1,821,107 1,296,814	5,319,911 4,738,472	54,475 62,716	135,722 133,842	277,040 1,767,050	7,863 46,726	210,000 480,640	1,434 8,835	328,070 527,562	464,167 630,469	} 28
157,847	31,249	117,713			8,225	123	92,073	1,480	17	95	} 29
2,505,936 2,358,616	62,644 65,164	245,439 806,585	1,713 1,331	5,149 8,214	515,501 434,415	6,746 9,373	276,632 496,960	3,887 8,946	944,545 853,032	1,654,916 1,340,942	} 30
6,371,997 5,928,352	466,338 443,613	1,871,129 2,259,793	53,164 41,894	160,577 132,341	5,379,300 2,918,400	122,174 71,261	44,000 1,224,000	800 30,200	632,011 742,739	1,245,001 1,618,739	} 31
551,108 307,805	115,960 59,396	403,072 270,200					1,000,000	20,000	6,612 2,164	21,752 7,222	} 32

\* No establishments reported.

\*

## MANUFACTURES.

TABLE 6.—COMPARATIVE SUMMARY, BY STATES

STATES AND TERRITORIES.	Year.	MATERIALS USED—continued.										
		Other grain.		Barrels purchased.		Sacks purchased.		Cooperage stock and cloth for sacks.	Fuel.	Rent of power and heat.	Mill supplies.	All other materials.
		Bushels.	Cost.	Number.	Cost.	Number.	Cost.	Cost.	Cost.	Cost.	Cost.	Cost.
33 New York .....	1900	18,024,789	\$4,001,625	1,372,369	\$441,638	13,812,221	\$359,586	\$588,853	\$204,264	\$27,393	\$85,778	\$260,535
	1890	9,553,069	3,319,769	3,644,959	1,081,046	10,618,104	526,339	.....	250,488	20,957	74,001	441,799
34 North Carolina .....	1900	193,236	71,426	2,370	171	1,474,782	70,848	1,796	60,270	1,800	27,191	62,039
	1890	146,767	69,156	13,459	4,071	506,770	24,923	.....	36,627	25	2,053	19,606
35 North Dakota .....	1900	403,274	108,455	54,360	4,150	1,651,923	120,248	5,200	84,644	45	24,826	42,465
	1890	133,900	44,150	24,603	9,121	781,282	61,103	.....	67,090	.....	5,825	2,200
36 Ohio .....	1900	4,571,896	1,120,315	1,330,026	392,177	21,598,395	630,815	66,232	340,823	11,824	94,537	195,923
	1890	3,255,069	956,245	2,511,988	715,488	12,724,804	396,081	.....	313,665	9,146	51,678	74,331
37 Oklahoma .....	1900	149,525	31,939	16,310	4,619	3,330,000	136,685	.....	69,764	1,500	13,841	11,634
	1890	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
38 Oregon .....	1900	521,640	186,766	180	54	6,172,847	268,373	.....	26,545	20,514	18,386	64,281
	1890	295,206	113,300	25,960	8,345	2,527,131	175,355	.....	25,367	2,500	4,703	4,870
39 Pennsylvania .....	1900	7,794,403	2,387,258	685,328	188,740	17,867,594	462,077	140,542	212,059	7,106	92,046	180,767
	1890	7,269,787	2,407,669	854,967	244,866	12,536,425	395,468	.....	203,052	5,474	30,788	197,667
40 Rhode Island .....	1900	546,115	172,097	1,000	250	143,953	7,533	.....	8,230	800	4,923	308,801
	1890	306,950	119,945	10,000	2,000	35,050	5,607	.....	5,820	2,712	2,084	1,450
41 South Carolina .....	1900	48,520	20,007	7,000	753	693,608	21,579	4	15,001	587	7,136	8,058
	1890	108,885	29,433	23,755	2,563	127,663	4,341	.....	16,474	.....	923	3,348
42 South Dakota .....	1900	207,620	46,168	5,800	687	2,019,810	91,196	.....	66,701	650	20,930	88,229
	1890	130,200	36,525	40,075	12,020	1,028,380	36,207	.....	66,953	.....	5,150	3,870
43 Tennessee .....	1900	530,575	162,657	852,409	239,946	15,570,043	520,330	29,159	152,281	272	48,800	306,001
	1890	41,216	15,423	892,250	250,761	9,881,479	130,553	.....	113,945	380	6,149	29,432
44 Texas .....	1900	270,894	66,296	109,270	33,745	11,595,655	499,922	24,000	149,460	4,024	42,754	223,613
	1890	31,780	12,722	115,825	39,406	4,446,990	204,882	.....	180,655	200	7,543	19,624
45 Utah .....	1900	84,788	29,846	.....	700	1,195,870	60,060	150	7,413	2,370	6,617	7,735
	1890	2,100	1,560	2,000	700	472,660	23,823	.....	4,892	85	426	750
46 Vermont .....	1900	1,163,378	374,584	33,120	1,776	201,690	9,441	.....	9,974	1,720	6,854	176,844
	1890	792,297	301,382	3,755	434	52,965	6,119	.....	4,780	300	2,091	3,837
47 Virginia .....	1900	262,961	78,988	319,127	88,215	5,195,702	182,575	8,408	42,586	6,170	31,647	33,612
	1890	223,946	78,736	523,728	169,118	2,174,515	87,413	.....	16,053	7,230	7,193	21,707
48 Washington .....	1900	653,330	203,697	.....	.....	8,410,400	335,959	.....	54,113	10,584	31,952	134,709
	1890	60,317	25,686	.....	.....	3,712,380	90,660	.....	15,023	210	1,764	2,332
49 West Virginia .....	1900	469,146	149,957	69,196	14,214	2,065,031	43,747	225	48,974	.....	11,125	18,666
	1890	152,353	51,016	82,991	27,171	676,840	13,150	.....	33,416	100	2,108	2,457
50 Wisconsin .....	1900	9,378,295	2,089,789	997,958	309,750	10,213,171	506,624	631	215,549	8,298	57,756	103,567
	1890	5,132,453	1,264,068	874,148	278,154	6,050,144	376,173	.....	132,105	1,570	28,793	63,332
51 Wyoming .....	1900	23,625	7,450	.....	.....	162,628	7,336	.....	1,106	.....	770	85
	1890	10,000	5,000	.....	.....	106,600	4,774	.....	1,930	.....	75	.....
52 All other states and territories. <sup>2</sup>	1900	.....	.....	.....	.....	5,000	195	.....	2,201	.....	.....	2,013
	1890	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

<sup>1</sup>No establishments reported.<sup>2</sup>Includes establishments distributed as follows: Arizona, 5; Indian Territory, 2.

# FLOURING AND GRIST MILL PRODUCTS.

AND TERRITORIES: 1890 AND 1900—Continued.

PRODUCTS.											
Total value.	Wheat flour.		Rye flour.		Buckwheat flour.		Barley meal.		Corn meal.		
	Barrels.	Value.	Barrels.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	
\$42,786,340 52,550,744	5,434,827 6,370,817	\$19,928,981 31,410,188	262,496 396,201	\$908,545 1,341,475	70,122,672 66,066,825	\$1,853,506 1,450,752	6,797,542 9,823,690	\$89,099 188,851	3,996,409 8,984,214	\$6,734,840 8,646,094	}38
8,867,462 5,279,068	945,781 462,594	4,047,840 2,341,640	29,394 17,642	60,022 64,051	627,328 193,650	12,995 5,382	247,751 201,400	9,239 2,575	1,547,704 922,449	3,721,010 2,427,275	}34
4,134,023 2,624,198	1,029,070 562,860	3,274,958 2,301,746	1,009 340	2,168 860	600 9,000	18 180	313,000 4,240,000	2,816 37,400	5,695 4,050	9,815 6,265	}35
37,390,367 39,468,409	7,366,474 6,950,080	26,060,827 31,127,953	40,258 67,008	117,769 221,861	4,416,605 3,920,641	108,656 95,245	1,137,830 6,293,692	11,157 48,625	1,532,994 1,362,473	2,708,191 2,532,297	}36
3,745,434	975,870	2,855,216	966	2,577	3,000	90	8,500	100	175,335	250,287	}37
6,364,028 4,184,473	1,826,512 962,345	4,769,573 3,294,082	1,949 1,060	5,937 4,819	232,875 144,900	6,370 5,833	1,069,000 3,750,700	10,680 48,055	4,775 6,692	13,647 21,950	}38
35,689,423 39,478,076	4,775,166 4,817,238	17,059,265 23,082,330	155,592 356,641	464,070 1,122,703	62,267,953 43,717,600	1,327,989 997,924	196,790 3,133,750	4,108 39,549	1,315,892 3,227,103	2,189,964 6,634,317	}39
1,895,921 1,349,843	1,240 2,220	4,655 11,600	1,574 1,248	4,270 4,586	----- 12,460	----- 370	102,760 50,800	1,972 836	996,174 481,650	1,566,120 1,181,892	}40
2,347,790 2,033,126	204,089 104,530	999,781 567,573	1,066 369	4,253 1,648	8,846 5,000	822 200	56,700	1,653	447,299 441,183	1,079,008 1,262,574	}41
3,379,843 2,793,701	915,541 605,812	2,695,024 2,378,228	3,101 2,040	7,472 5,920	27,100 267,700	1,063 7,002	347,007 235,200	4,980 1,901	16,214 43,546	26,369 63,646	}42
21,798,929 12,474,284	3,512,985 1,853,114	18,220,609 3,734,426	780 2,009	2,430 7,127	147,465 40,975	2,953 1,093	44,815 202,950	633 2,261	2,963,559 1,261,038	5,887,950 2,694,592	}43
12,333,730 9,903,455	2,604,554 1,555,891	8,881,359 6,827,647	4,219 8,468	14,171 32,792	----- -----	----- -----	----- -----	----- -----	728,974 946,527	1,419,561 2,092,610	}44
1,829,840 1,468,681	513,692 284,018	1,413,428 1,192,307	1,007 560	2,558 2,155	6,000	225	500,000 1,562,440	7,277 17,708	1,830 28,328	5,100 88,322	}45
3,222,347 2,890,174	5,549 27,337	21,970 132,715	1,365 2,542	4,599 9,748	752,909 1,570,000	18,137 35,570	2,364,465 4,227,900	28,274 54,951	1,017,878 1,000,118	2,102,622 2,250,346	}46
12,687,267 11,716,356	1,758,946 1,300,864	6,671,815 6,139,217	25,081 29,591	62,025 95,651	3,257,250 960,591	57,340 25,505	579,106 356,728	10,820 4,275	2,064,955 1,926,437	4,423,544 4,419,928	}47
6,875,672 2,460,809	1,868,780 507,369	4,758,004 1,859,971	4,119 24	12,872 80	1,300 3,640	30 116	378,200 7,112,400	14,400 88,600	10,309 16,656	29,356 33,699	}48
5,541,353 3,902,934	767,160 497,013	2,969,298 2,384,434	3,247 9,278	8,081 29,971	6,630,603 2,045,367	122,115 55,036	2,300 170,400	80 2,200	680,053 460,555	1,512,513 1,067,658	}49
26,327,942 24,252,297	4,750,253 4,100,965	15,496,295 17,232,413	701,104 552,402	1,898,432 1,451,078	15,158,212 17,470,885	360,576 349,723	7,321,200 37,323,440	88,466 360,686	279,032 608,647	503,942 965,716	}50
215,447 157,251	45,164 31,512	164,475 131,336	----- -----	----- -----	----- -----	----- -----	14,900	144	----- -----	----- -----	}51
157,087	22,735	127,887	----- -----	----- -----	----- -----	----- -----	106,000	1,400	2,449	4,895	}52

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MANUFACTURES.

TABLE 6.—COMPARATIVE SUMMARY, BY STATES AND TERRITORIES: 1890 AND 1900.

STATES AND TERRITORIES.	Year.	PRODUCTS—continued.					MACHINERY AND CAPACITY.		
		Wool.		Flax.		All other products.	Pairs of rolls.	Runs of stone.	Estimated maximum capacity per day of 24 hours.
		Pounds.	Value.	Pounds.	Value.				
United States....	1900	805,725,886	\$2,723,448	6,559,835,116	\$98,112,424				
	1890	229,888,287	2,445,868	7,001,953,412	86,844,825	\$87,426,850	77,989	81,218	10,019,740
Alabama .....	1900	2,444,735	25,715	11,185,742	78,771	287,821	176	981	94,330
	1890	1,075,700	16,000	7,137,480	38,204	224,061	77	929	100,930
Arizona .....	1900			8,563,775	24,210	63,464	67	7	3,785
	1890								
Arkansas .....	1900			84,395,937	215,386	346,471	609	490	93,940
	1890	65,300	649	17,594,100	88,847	143,357	173	493	84,410
California .....	1900	8,097,580	86,835	168,551,691	1,157,424	3,096,156	1,133	161	135,162
	1890	4,023,000	51,800	177,043,736	1,334,764	1,146,504	937	126	86,374
Colorado .....	1900			74,745,383	502,408	853,573	520	21	42,049
	1890	3,000,000	45,000	57,188,200	417,540	204,497	324	38	20,830
Connecticut .....	1900	1,280,000	12,800	1,874,818	20,111	744,468	61	825	203,095
	1890	421,800	3,782	888,690	6,375	637,017	26	318	45,314
Delaware .....	1900	1,972,972	87,861	5,818,718	35,067	130,160	268	128	24,300
	1890	19,800	560	5,554,750	46,964	189,188	221	124	21,719
District of Columbia .....	1900	3,816,000	57,860	3,520,000	25,760	58,885	64	20	7,570
	1890	1,248,000	17,160	9,800,000	71,201	190,161	118	8	10,090
Florida .....	1900	1,369,768	15,185	416,000	2,161	81,899	4	117	9,442
	1890	89,940	1,293			62,269	2	71	8,134
Georgia .....	1900	637,098	14,097	23,790,218	278,312	451,254	261	1,339	165,035
	1890	8,302,210	127,021	29,273,980	195,299	118,128	250	1,240	131,425
Idaho .....	1900			23,748,430	105,180	68,364	254	14	13,165
	1890	4,000	90	6,754,000	50,152	28,720	59	15	3,785
Illinois .....	1900	34,739,328	271,070	406,366,404	2,333,321	4,271,137	4,680	831	539,626
	1890	22,018,000	263,548	626,602,607	3,197,841	2,290,058	4,214	1,050	335,030
Indiana .....	1900	97,038,739	717,387	378,867,854	2,234,878	3,729,303	4,890	797	482,057
	1890	93,864,800	728,354	515,823,603	2,548,426	766,220	4,281	847	236,934
Indian Territory .....	1900			18,520,000	88,318	188,474	257	40	26,770
	1890								
Iowa .....	1900	4,427,260	29,337	151,737,058	789,441	3,362,839	2,895	815	306,407
	1890	2,018,620	19,107	167,212,682	715,224	1,572,709	2,252	772	160,922
Kansas .....	1900	4,671,000	37,964	352,553,736	1,453,397	3,557,669	3,487	322	391,236
	1890	3,782,000	26,770	302,341,466	1,292,629	553,613	2,083	480	144,245
Kentucky .....	1900	39,850	13,271	184,623,651	1,210,608	652,725	2,563	1,214	239,218
	1890	6,457,760	74,941	142,268,000	711,019	140,790	1,280	673	119,653
Louisiana .....	1900	200,000	2,100			91,772	15	66	9,333
	1890					6,278		26	2,335
Maine .....	1900			20,969,113	124,822	352,314	213	349	119,321
	1890	55,700	618	333,044	2,466	369,774	67	401	112,145
Maryland .....	1900	11,234,589	135,120	53,109,242	394,448	1,188,844	1,511	578	95,729
	1890	1,434,900	20,619	87,519,317	624,634	240,494	872	660	67,491
Massachusetts .....	1900	2,564,600	23,134	19,267,731	101,888	1,089,443	81	348	166,825
	1890	4,444,000	57,039	1,665,590	11,004	965,363	63	422	135,994
Michigan .....	1900	2,889,950	21,822	303,390,890	1,965,296	4,996,373	4,240	849	408,310
	1890	1,420,500	26,765	349,134,056	1,373,433	1,745,259	3,284	938	250,304
Minnesota .....	1900	6,087,250	51,000	1,392,441,288	6,790,661	4,063,455	6,455	406	680,421
	1890	650	10	913,351,334	8,934,352	1,449,536	4,753	473	360,389
Mississippi .....	1900	1,051,625	13,562	33,000	330	109,330	22	264	35,491
	1890	184,300	2,790	48,550	264	174,100	59	464	59,697
Missouri .....	1900	49,773,450	365,788	366,957,482	1,933,476	2,994,557	4,887	1,053	501,119
	1890	35,645,200	512,339	565,351,300	2,656,107	774,931	4,133	1,042	309,303
Montana .....	1900	7,242	87	10,954,146	53,637	77,537	153	9	8,640
	1890			5,985,000	33,884		41	6	2,975
Nebraska .....	1900	5,617,000	43,061	141,168,626	733,078	1,395,508	2,225	183	134,515
	1890	9,000	125	119,107,765	423,346	373,127	1,260	278	30,235
Nevada .....	1900			2,455,906	17,516	20,920	59	4	4,335
	1890								
New Hampshire .....	1900	1,736,600	19,582	1,428,800	13,535	556,682	47	230	129,249
	1890	12,600	162	5,329,200	22,705	164,284	23	276	60,377
New Jersey .....	1900	5,264,400	49,520	50,097,473	378,573	2,544,223	763	639	147,516
	1890	1,031,000	10,229	42,116,102	235,407	1,570,322	450	414	53,610
New Mexico .....	1900			9,550,137	76,304	29,980	109	43	6,409
	1890			5,372,100	26,633	3,700	38	25	3,359

<sup>1</sup>Included in "all other states and territories."

<sup>2</sup>No establishments reported.

FLOURING AND GRIST MILL PRODUCTS.

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TABLE 6.—COMPARATIVE SUMMARY, BY STATES AND TERRITORIES: 1890 AND 1900—Continued.

STATES AND TERRITORIES.	Year.	PRODUCTS—continued.					MACHINERY AND CAPACITY.		
		Hominy. <sup>1</sup>		Oat.		All other products.	Pairs of rolls.	Runs of stone.	Estimated maximum capacity per day of 24 hours.
		Pounds.	Value.	Pounds.	Value.	Value.	Number.	Number.	Bushels.
New York .....	1900	1,089,400	\$18,710	282,876,679	\$1,782,550	\$11,585,109	4,080	2,722	1,005,918
	1890	2,256,864	22,562	510,948,808	3,851,368	6,189,959	2,917	2,983	649,029
North Carolina .....	1900	4,694,987	54,163	56,990,593	465,882	496,811	1,228	2,564	194,100
	1890	1,415,150	17,981	45,325,110	277,042	143,222	185	1,617	100,070
North Dakota .....	1900	259,200	2,385	46,509,660	272,293	569,520	688	14	50,988
	1890	.....	.....	49,005,960	222,112	55,635	341	10	21,787
Ohio .....	1900	5,579,900	57,429	414,242,305	2,518,665	5,807,673	6,074	1,178	675,513
	1890	14,595,955	167,525	670,675,204	3,431,489	1,853,414	5,862	1,881	857,577
Oklahoma .....	1900	.....	.....	54,604,688	296,884	840,380	421	22	31,835
	1890	.....	.....	.....	.....	.....	.....	.....	.....
Oregon .....	1900	24,000	480	96,835,948	562,678	994,658	1,018	93	70,812
	1890	22,000	440	79,422,302	569,831	239,363	420	131	85,896
Pennsylvania .....	1900	17,090,080	173,232	355,582,188	2,626,874	12,793,921	6,863	4,452	1,015,704
	1890	11,509,450	110,505	451,637,157	2,823,101	4,717,647	4,952	5,220	480,124
Rhode Island .....	1900	10,000	100	1,851,390	11,714	307,090	12	47	30,422
	1890	600,000	8,400	300,220	1,521	190,578	26	46	17,134
South Carolina .....	1900	3,248,984	40,521	10,071,540	77,661	144,591	310	698	67,839
	1890	8,126,268	109,612	9,429,688	60,332	81,184	48	770	61,199
South Dakota .....	1900	.....	.....	69,057,648	348,545	296,890	314	25	55,796
	1890	.....	.....	56,963,360	279,566	57,438	522	22	26,682
Tennessee .....	1900	10,541,350	166,241	286,606,810	1,653,638	864,470	2,761	1,956	333,451
	1890	1,800	66	163,315,095	966,240	68,679	1,037	1,401	142,017
Texas .....	1900	75,000	600	166,381,189	1,119,892	898,147	1,257	212	130,838
	1890	349,500	9,805	138,737,585	776,993	164,108	1,217	770	152,650
Utah .....	1900	10,000	150	31,502,886	190,590	210,512	555	38	23,453
	1890	.....	.....	28,060,560	157,269	10,420	125	89	11,652
Vermont .....	1900	350,700	5,470	10,268,173	73,950	967,325	181	874	136,106
	1890	1,140	16	2,887,090	16,394	390,434	40	512	84,139
Virginia .....	1900	3,092,048	35,855	139,009,098	852,636	573,732	2,980	2,449	234,715
	1890	279,080	3,131	130,051,370	818,063	210,581	593	2,145	183,024
Washington .....	1900	.....	.....	117,144,888	643,947	1,412,063	753	40	85,415
	1890	.....	.....	45,026,640	256,930	221,413	160	29	15,109
West Virginia .....	1900	198,613	5,099	64,277,458	383,103	541,109	1,108	929	133,547
	1890	2,800	24	49,923,260	239,581	74,090	456	836	76,671
Wisconsin .....	1900	17,550,000	175,400	200,714,671	1,103,807	6,701,024	4,838	771	509,994
	1890	.....	.....	400,130,804	2,045,797	1,846,982	3,831	929	253,726
Wyoming .....	1900	.....	.....	4,198,000	23,993	21,830	64	.....	2,890
	1890	.....	.....	3,027,337	20,082	5,833	33	4	1,170
All other states and territories. <sup>2</sup>	1900	.....	.....	2,193,520	16,354	6,550	17	18	2,850
	1890	.....	.....	.....	.....	.....	.....	.....	.....

<sup>1</sup>No establishments reported.

<sup>2</sup>Includes territories grouped, in order that the operations of individual establishments may not be disclosed. These establishments are distributed as follows: Arizona, 5; Indian Territory, 2.

HISTORICAL AND DESCRIPTIVE.

From the earliest times the use of cereals as foods has been common among all races, especially those inhabiting the temperate zones. It is probable that before the dawn of history, while man was yet in a savage or semi-savage state, the rudiments of agriculture were practiced, and that the cultivation of cereals was among the first arts of agriculture. Previous to the establishment of agriculture, the various cereals used as foods were those growing wild. The study of physiology and of chemistry has developed the fact that cereals contain all the elements of food necessary to nourish the bodies of herbivorous and omnivorous animals. While it would be contrary to the laws of physi-

ology, hygiene, and domestic economy to confine the food of such animals exclusively to cereals, yet it is undoubtedly true that, in emergencies, if all other foods were removed, the cereals alone would be sufficient to sustain the vital processes. There is no other class of foods known which would longer sustain life.

It is evident that cereals were at first eaten raw, and without any preparation whatever, other than the removal of the outer husk. As the arts advanced, it was discovered that when cereals were subjected to the action of fire, their flavor became more agreeable and the ease of mastication increased. This step was speedily followed by a discovery that by mechanical prepara-

tion of the cereal grains, the processes of mastication were very much further facilitated, and their palatability increased.

It is evident that the first steps in the grinding of cereals consisted in simply breaking them into coarse fragments. It was soon discovered that a fine-ground meal could be prepared by triturating the cereal grains between stones, and this idea speedily developed into the mortar-and-pestle method of grinding, a species of milling which persists to the present time among primitive peoples, in drug stores, laboratories, and for experimental purposes.

In the reduction of cereal grains to a fine powder by any process of pounding, abrasion, or pressure, the various constituents of which the grains are composed behave differently toward the impact forces. The outer hulls of grain tend to break up into scales or fragments of more or less superficial area and of the thickness of the coatings themselves. The starchy remainder of the grain, and a large part of the nitrogenous or protein<sup>1</sup> matter, on the other hand, are broken by the grinding process into small fragments. In the case of starchy kernels there is a tendency to disintegration, and the protein matter breaks up into particles of regular size and of small dimensions. The germ of the cereal grains, on the other hand, always contains a large excess of oil, which has a tendency to spread out and agglutinate into particles of a regular size, in which are incorporated additional particles of starchy and protein matter.

The first steps of scientific milling, therefore, are directed toward a more or less complete separation of the three important constituents of the grain, namely, the hulls, the germ, and the matter intervening between them, consisting chiefly of starch and protein.

There are three distinct types of grinding machines used for reducing cereal grains to a powder. First, the mortar-and-pestle type, in which grinding and rubbing are the chief forces of impact employed. Second, some form of machine presenting two roughened surfaces, one or both of which may be in motion (usually only one), between which the grain is crushed or cut. These roughened surfaces may be either of stone or hardened steel. Third, the roller system of milling, illustrating the mashing process, in which the grains are disintegrated and reduced to successive stages of subdivision by passing through rolls, smooth or corrugated, in which, from one series to another, there is an increasing approximation of the surfaces. The rolls may revolve at the same peripheral rate, or the speed of rotation of the rolls may be different, thus securing a grinding or tearing process and the mashing or disintegrating impact of the rolls themselves, in the same operation.

<sup>1</sup> Constituents containing nitrogen.

These represent ascending types in the art of milling. The first represents the primitive and original method of disintegrating the grains; the second the intermediate step, which persisted until within perhaps a quarter of a century; and the third the last and final step in the evolution of the art. The third method is now almost universally employed, especially in mills of any magnitude.

The science of milling has introduced methods whereby, after the cereal grains have been reduced to a fine powder, or during the process of reduction, the different constituents of the grain may be separated. Without discussing here the hygienic and nutritive aspects of the process, it may be stated that modern taste requires a cereal flour from which the greater part of the outer hulls of the grain, as well as of the germ, has been removed. This separation is based upon the fact that these particles break up into masses of different size and shape. The starch and the greater part of the protein matter form fragments of small size usually of spherical or of spheroid dimensions, or bodies without any pronounced projecting parts. On the other hand, the hulls and the germs form particles of different size and shape, usually flattened, and thus presenting greater dimensions in one direction than in another. If a mass of particles of the sizes and shapes mentioned be thrown upon a screen of appropriate dimensions, it will be evident that the larger particles would be retained in the sifting process while the smaller ones would pass through the screen. It is by the application of the principle thus illustrated that the separation is effected. Thus by the use of bolting cloths which permit the fine starchy particles and the protein particles of similar size to pass through, the ground cereal may be separated into parts which, for descriptive purposes, may be regarded as in three types, namely, bran, or the outer hull, middlings, and flour.

In order to make high-grade flour, the first step which the modern miller takes is the purification of the cereal itself. Aside from the chemical composition, wheat may be good, bad, or indifferent, according to its freedom from dirt, husks, and other impurities. The first step therefore in the milling of wheat is to remove these foreign substances as completely as possible by friction, winnowing, and other means. It is not the purpose of this article to describe in detail the processes of milling, but it will be sufficient to say that by means of brushes and friction applied in various ways, and by blasts of air, the greater part of this matter and dust may be removed. Sand and other fragments of the size of the grain would not be removed by this process, but such substances are not often found in wheat. In the modern mill the purified wheat is then subjected to a series of operations which consist in breaking the grain into successive portions. These portions differ from each other physically, and also in

their chemical composition. A careful study of these products has been made by the Bureau of Chemistry of the United States Department of Agriculture under the personal supervision of Mr. Clifford Richardson.<sup>1</sup> A complete description of the mechanical process of milling may also be found in the report of the statistics of agriculture, census of 1880, Vol. III.

The chemical composition of the principal cereals used as food and of the products evolved by milling,

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<sup>1</sup>United States Department of Agriculture, Bureau of Chemistry, Part 9, Bulletin 13.

and of the final products formed therefrom by baking and other methods of preparation, are given in Part IX, Bulletin 13, "Cereals and Cereal Products," of the Bureau of Chemistry of the United States Department of Agriculture—and in Bulletins 45, "Analyses of Cereals Collected at the World's Columbian Exposition," and 50, "Composition of Maize," of the same Bureau and Department.

The detailed data relating to "Flouring and Grist Mill Products," arranged alphabetically, by States, are found in the following table:

## MANUFACTURES.

TABLE 7.—FLOURING AND GRIST MILL PRODUCTS.

	United States.	Alabama.	Arizona.	Arkansas.	California.	Colorado.	Connecticut.
1 Number of establishments.....	25,268	781	11	410	124	60	208
2 Character of organization:							
3 Individual.....	17,308	626	3	291	57	14	152
4 Firm and limited partnership.....	6,517	142	4	104	20	18	44
5 Incorporated company.....	1,425	18	4	15	46	33	12
6 Miscellaneous.....	13				1		
7 Capital:							
8 Total.....	\$218,714,104	\$1,047,961	\$221,112	\$1,183,052	\$6,552,642	\$2,040,774	\$1,565,478
9 Land.....	\$24,041,170	\$118,425	\$10,575	\$75,663	\$690,081	\$193,262	\$204,477
10 Buildings.....	\$47,003,592	\$240,400	\$41,690	\$249,321	\$1,124,822	\$436,966	\$134,477
11 Machinery, tools, and implements.....	\$71,938,412	\$494,533	\$53,280	\$620,408	\$1,555,245	\$618,550	\$300,394
12 Cash and sundries.....	\$75,735,930	\$194,603	\$110,567	\$237,660	\$3,182,451	\$791,996	\$525,030
13 Proprietors and firm members.....	30,240	934	10	506	101	36	243
14 Salaried officials, clerks, etc.:							
15 Total number.....	5,790	39	11	86	199	92	42
16 Total salaries.....	\$5,404,750	\$22,691	\$9,125	\$21,526	\$269,866	\$78,445	\$26,621
17 Officers of corporations—							
18 Number.....	1,259	7	5	12	58	22	7
19 Salaries.....	\$1,679,803	\$9,100	\$5,580	\$8,570	\$95,390	\$18,610	\$1,930
20 General superintendents, managers, clerks, etc.—							
21 Total number.....	4,531	32	6	24	141	70	35
22 Total salaries.....	\$3,724,947	\$13,591	\$3,545	\$12,956	\$174,476	\$64,835	\$24,191
23 Men—							
24 Number.....	3,979	32	5	23	181	70	30
25 Salaries.....	\$3,507,785	\$13,591	\$3,320	\$12,356	\$170,764	\$64,835	\$23,097
26 Women—							
27 Number.....	552		1	1	10		5
28 Salaries.....	\$217,162		\$225	\$600	\$3,712		\$1,694
29 Wage-earners, including pieceworkers, and total wages:							
30 Greatest number employed at any one time during the year.....	50,124	894	57	671	1,094	338	302
31 Least number employed at any one time during the year.....	38,549	648	26	496	748	227	243
32 Average number.....	37,073	540	36	443	857	278	233
33 Wages.....	\$17,703,418	\$92,868	\$19,970	\$116,445	\$525,401	\$169,358	\$90,369
34 Men, 16 years and over—							
35 Average number.....	36,419	539	36	440	825	277	227
36 Wages.....	\$17,540,370	\$92,708	\$19,970	\$116,253	\$516,144	\$168,608	\$97,654
37 Women, 16 years and over—							
38 Average number.....	497				27	1	6
39 Wages.....	\$142,911				\$8,857	\$750	\$1,755
40 Children, under 16 years—							
41 Average number.....	157	1		3	5		
42 Wages.....	\$20,137	\$150		\$192	\$900		
43 Average number of wage-earners, including pieceworkers, employed during each month:							
44 Men, 16 years and over—							
45 January.....	37,284	519	42	423	803	290	252
46 February.....	36,746	486	42	405	791	286	249
47 March.....	35,940	451	41	385	793	294	243
48 April.....	34,267	435	39	382	771	282	225
49 May.....	33,167	427	37	373	782	260	210
50 June.....	31,204	417	26	351	797	237	202
51 July.....	32,744	418	29	392	809	240	190
52 August.....	34,307	434	27	404	863	250	193
53 September.....	33,859	464	30	424	824	280	221
54 October.....	41,141	764	37	560	890	294	241
55 November.....	41,640	761	39	570	865	308	244
56 December.....	40,229	692	43	535	812	302	249
57 Women, 16 years and over—							
58 January.....	451				31	1	7
59 February.....	479				31	1	6
60 March.....	491				28	1	6
61 April.....	496				29	1	6
62 May.....	562				23	1	6
63 June.....	498				23	1	6
64 July.....	451				23	1	6
65 August.....	433				23	1	6
66 September.....	502				23	1	6
67 October.....	539				23	1	6
68 November.....	547				23	1	6
69 December.....	512				28	1	6
70 Children, under 16 years—							
71 January.....	149	1		3	5		
72 February.....	156	1		3	5		
73 March.....	153	1		3	5		
74 April.....	146	1		3	5		
75 May.....	135	1		3	5		
76 June.....	127	1		3	5		
77 July.....	147	1		3	5		
78 August.....	145	1		3	5		
79 September.....	173	1		3	5		
80 October.....	186	1		3	5		
81 November.....	192	1		3	5		
82 December.....	173	1		3	5		
83 Miscellaneous expenses:							
84 Total.....	\$10,325,688	\$94,654	\$15,053	\$44,681	\$246,409	\$181,790	\$32,083
85 Rent of works.....	\$360,345	\$9,783	\$800	\$2,207	\$14,428	\$7,362	\$3,989
86 Taxes, not including internal revenue.....	\$1,445,244	\$9,162	\$1,560	\$8,929	\$48,342	\$24,257	\$10,339
87 Rent of offices, insurance, interest, and all sundry expenses not hitherto included.....	\$7,977,407	\$14,765	\$12,693	\$31,006	\$188,049	\$100,171	\$17,390
88 Contract work.....	\$42,532	\$944		\$2,539	\$590		\$425

# FLOURING AND GRIST MILL PRODUCTS.

BY STATES AND TERRITORIES: 1900.

Delaware.	District of Columbia.	Florida.	Georgia.	Idaho.	Illinois.	Indiana.	Indian Territory.	Iowa.	Kansas.	
83	9	95	1,123	34	871	897	61	702	633	1
64	4	85	876	16	514	473	36	427	315	2
17	4	9	222	9	258	348	17	219	167	3
2	1	1	23	9	99	76	8	55	61	4
			2					1		5
\$1,017,508	\$198,065	\$123,416	\$2,504,033	\$569,107	\$12,062,626	\$10,734,544	\$478,241	\$6,421,078	\$8,366,966	6
\$200,670	\$30,700	\$17,203	\$289,073	\$39,114	\$1,016,422	\$923,427	\$18,700	\$762,946	\$625,680	7
\$239,459	\$37,300	\$26,340	\$577,812	\$144,350	\$2,457,192	\$2,223,946	\$138,938	\$1,481,670	\$1,915,748	8
\$309,585	\$53,875	\$47,655	\$1,025,920	\$206,384	\$3,887,102	\$4,034,603	\$196,525	\$2,379,941	\$2,702,193	9
\$267,794	\$71,690	\$32,218	\$611,228	\$179,259	\$4,701,910	\$3,552,568	\$129,078	\$1,796,521	\$3,123,350	10
96	15	97	1,315	30	1,050	1,207	76	866	639	11
20	18	4	88	20	867	286	26	210	281	12
\$17,796	\$13,460	\$8,500	\$58,908	\$14,170	\$361,021	\$276,708	\$17,623	\$160,476	\$267,737	13
4	2		15	6	109	88	2	49	74	14
\$8,575	\$2,400		\$18,180	\$4,850	\$139,728	\$120,792	\$2,400	\$53,620	\$103,671	15
16	16	4	73	14	258	198	24	161	207	16
\$9,221	\$11,050	\$3,500	\$40,728	\$9,320	\$221,293	\$156,916	\$15,223	\$106,856	\$164,066	17
15	14	4	70	14	225	157	21	135	193	18
\$8,805	\$10,500	\$3,500	\$39,328	\$9,320	\$204,997	\$138,345	\$14,123	\$98,987	\$158,470	19
1	2		3		33	41	3	26	14	20
\$416	\$550		\$1,400		\$16,296	\$17,571	\$1,100	\$7,869	\$5,596	21
171	92	88	1,512	107	2,748	2,688	173	1,592	1,996	22
137	79	73	1,202	74	2,081	1,988	121	1,202	1,468	23
185	84	46	1,167	76	2,111	2,124	119	1,285	1,451	24
\$48,928	\$30,848	\$7,967	\$225,933	\$46,453	\$1,098,006	\$1,010,877	\$48,988	\$526,479	\$743,402	25
134	84	45	1,154	75	2,104	2,102	119	1,224	1,441	26
\$48,728	\$30,848	\$7,927	\$225,223	\$46,853	\$1,096,454	\$1,005,415	\$48,988	\$512,119	\$741,861	27
					1	16		49	8	28
					\$300	\$4,720		\$13,570	\$1,221	29
1		1	13	1	6	6		12	2	30
\$200		\$40	\$710	\$100	\$1,252	\$742		\$790	\$350	31
189	81	88	1,122	70	2,154	2,153	112	1,323	1,450	32
129	81	86	1,113	70	2,153	2,117	107	1,314	1,423	33
142	80	86	1,094	84	2,098	2,089	118	1,300	1,383	34
136	79	84	1,077	78	2,031	2,007	116	1,205	1,355	35
134	80	83	1,029	83	1,947	1,936	113	1,161	1,351	36
131	78	83	1,032	69	1,854	1,869	86	1,067	1,270	37
138	80	82	1,024	65	2,037	2,020	102	1,069	1,336	38
130	88	83	1,057	67	2,069	2,106	119	1,125	1,362	39
133	89	69	1,305	80	2,122	2,187	127	1,231	1,522	40
131	89	69	1,301	80	2,251	2,239	142	1,292	1,600	41
131	91	71	1,350	88	2,273	2,265	146	1,293	1,618	42
134	91	66	1,284	81	2,257	2,239	134	1,308	1,616	43
					3	14		59	3	44
					2	14		59	7	45
						14		59	3	46
						15		59	3	47
						14		59	2	48
						14		20	1	49
						14		20	1	50
						15		20	7	51
						3		58	21	52
						3		58	22	53
						3		59	12	54
						3		59	13	55
1			13	1	6	6		12	3	56
1			13	1	6	6		12	3	57
1			14	1	6	5		12	3	58
1			14	1	6	6		11	3	59
			13	1	6	6		11	1	60
			13	1	6	6		13	1	61
			13	1	6	6		13	1	62
			14	1	6	6		14	1	63
			14	1	6	6		13	1	64
			14	1	6	6		11	6	65
			14	1	6	6		11	9	66
1		2	13	1	6	6		11	1	67
\$28,038	\$18,167	\$2,160	\$73,455	\$23,235	\$560,080	\$570,830	\$27,593	\$304,256	\$447,747	68
\$3,741	\$5,155	\$130	\$8,050	\$725	\$48,257	\$22,015	\$1,220	\$18,337	\$26,264	69
\$3,772	\$676	\$1,303	\$23,120	\$5,692	\$69,258	\$91,209	\$2,806	\$46,866	\$99,034	70
\$16,195	\$12,336	\$677	\$42,113	\$16,818	\$443,465	\$467,606	\$21,767	\$239,332	\$347,799	71
\$330			\$172				\$1,800	\$672	\$4,650	72

TABLE 7.—FLOURING AND GRIST MILL PRODUCTS,

	United States.	Alabama.	Arizona.	Arkansas.	California.	Colorado.	Connecticut.
<b>Materials used:</b>							
73 Total cost.....	\$475,826,345	\$2,787,634	\$382,055	\$2,029,286	\$11,077,482	\$3,842,194	\$1,845,545
74 Wheat, bushels.....	489,914,004	661,684	320,214	2,912,566	12,786,110	4,809,458	27,921
75 Cost.....	\$817,933,257	\$505,308	\$228,643	\$1,840,529	\$7,649,433	\$2,716,924	\$16,101
76 Corn, bushels.....	241,029,249	4,268,639	17,654	2,487,206	927,500	1,590,554	3,003,483
77 Cost.....	\$93,882,609	\$2,128,021	\$9,740	\$1,010,523	\$492,910	\$517,534	\$1,398,552
78 Rye, bushels.....	12,720,812	9,976	.....	4,173	88,024	26,736	50,213
79 Cost.....	\$6,446,705	\$5,145	.....	\$1,770	\$4,603	\$26,736	\$26,899
80 Buckwheat, bushels.....	8,317,357	190	.....	105	14,402	606	21,393
81 Cost.....	\$4,438,480	\$135	.....	\$32	\$14,361	\$439	\$16,710
82 Barley, bushels.....	12,289,036	40	195,888	10	4,660,341	16,515	1,399
83 Cost.....	\$4,460,695	\$28	\$87,156	\$5	\$1,721,636	\$6,173	\$738
84 Oats, bushels.....	65,352,637	40,700	2,921	20,300	822,895	618,265	780,487
85 Cost.....	\$17,150,744	\$13,260	.....	\$6,105	\$275,013	\$165,524	\$241,648
86 Other grain, bushels.....	5,620,530	3,985	.....	2,300	34,650	5,185	101,738
87 Cost.....	\$1,952,780	\$8,125	.....	\$1,090	\$20,955	\$2,712	\$38,691
88 Barrels purchased, number.....	16,272,500	24,716	.....	5,750	133,743	40,000	7,400
89 Cost.....	\$4,674,636	\$6,642	.....	\$1,685	\$41,238	\$12,000	\$1,557
90 Sacks purchased, number.....	310,080,914	1,394,097	281,023	1,622,808	9,341,011	3,000,361	319,076
91 Cost.....	\$11,664,996	\$52,657	\$12,852	\$75,080	\$410,644	\$201,734	\$14,880
92 Cooperage stock and cloth for sacks.....	\$1,584,478	\$85	.....	\$19,026	\$60,000	.....	\$20
93 Fuel.....	\$4,756,732	\$27,893	\$5,035	\$47,661	\$165,955	\$47,629	\$15,514
94 Rent of power and heat.....	\$378,790	\$305	\$454	.....	\$33,772	.....	\$5,525
95 Mill supplies.....	\$1,695,545	\$15,174	\$1,809	\$12,029	\$41,193	\$17,778	\$7,518
96 All other materials.....	\$1,046,769	\$11,559	\$620	\$6,479	\$20,381	\$12,876	\$4,061
97 Freight.....	\$3,759,139	\$18,297	\$35,000	\$6,388	\$31,389	\$130,820	\$58,219
<b>Products:</b>							
98 Total value.....	\$560,719,063	\$3,310,757	\$455,246	\$3,708,709	\$18,100,944	\$4,528,062	\$2,268,859
99 Wheat flour, barrels.....	108,524,094	144,361	65,617	605,702	2,660,235	1,012,331	2,147
100 Value.....	\$348,183,800	\$557,963	\$291,428	\$2,005,295	\$7,952,867	\$3,063,100	\$9,080
101 Rye flour, barrels.....	1,739,374	1,961	.....	3,070	14,592	1,028	7,514
102 Value.....	\$4,916,001	\$4,810	.....	\$6,707	\$43,681	\$3,635	\$23,578
103 Buckwheat flour, pounds.....	213,562,952	2,400	.....	4,100	552,080	1,500	558,459
104 Value.....	\$5,065,185	\$75	.....	\$62	\$19,574	\$90	\$15,887
105 Barley meal, pounds.....	99,730,423	1,500	5,087,000	400	59,166,092	.....	1,880
106 Value.....	\$1,113,958	\$40	\$64,770	\$8	\$572,574	.....	\$31
107 Corn meal, barrels.....	40,035,977	1,034,696	4,498	636,285	94,592	55,216	838,555
108 Value.....	\$73,177,402	\$2,360,562	\$11,374	\$1,134,780	\$221,333	\$105,261	\$1,412,406
109 Hominy, pounds.....	305,725,866	2,444,785	.....	.....	3,097,500	.....	1,230,000
110 Value.....	\$2,723,443	\$25,715	.....	.....	\$36,835	.....	\$12,300
111 Feed, pounds.....	10,061,312,069	26,254,780	5,832,090	42,285,779	225,640,992	107,225,303	52,429,283
112 Value.....	\$31,347,132	\$204,276	\$304,048	\$2,268,107	\$304,048	\$858,573	\$645,556
113 Offal, pounds.....	6,559,835,116	11,185,742	3,563,775	34,395,937	168,551,691	74,745,333	1,874,818
114 Value.....	\$88,112,424	\$73,771	\$24,210	\$215,386	\$1,157,424	\$502,403	\$20,111
115 Barrels, made (not used), number.....	217,361	.....	.....	4,400	.....	.....	.....
116 Value.....	\$90,329	.....	.....	\$1,270	.....	.....	.....
117 Sacks, made (not used), number.....	950,171	.....	.....	.....	.....	.....	.....
118 Value.....	\$37,591	.....	.....	.....	.....	.....	.....
119 Amount received for custom sawing.....	\$248,513	\$5,677	.....	\$3,318	.....	.....	.....
120 Amount received for custom ginning.....	\$301,622	\$48,768	.....	\$36,078	\$450	.....	\$19,020
121 All other products.....	\$5,431,663	\$29,100	\$4,342	\$1,757	\$832,599	.....	\$79,589
122 Amount received for custom grinding, including value of grain received as toll. <sup>1</sup>	\$16,431,155	\$287,138	\$9,039	\$212,288	\$66,281	\$18,468	\$58,404
<b>Machinery and capacity:</b>							
123 Pairs of rolls, number.....	77,989	176	67	609	1,138	520	61
124 Runs of stone, number.....	31,218	981	7	480	161	21	325
125 Estimated maximum capacity per day of 24 hours, bushels.....	10,019,740	94,336	3,785	93,940	135,162	42,049	203,095
<b>Comparison of products:</b>							
126 Number of establishments reporting for both years.....	13,030	468	4	211	88	36	148
127 Value for census year.....	\$389,293,162	\$2,131,013	\$84,300	\$2,142,239	\$10,303,976	\$3,721,233	\$1,531,701
128 Value for preceding business year.....	\$371,357,354	\$1,899,182	\$70,592	\$1,891,282	\$10,269,105	\$3,333,233	\$1,450,864
<b>Power:</b>							
129 Number of establishments reporting.....	24,147	780	11	411	123	60	208
130 Total horsepower.....	1,016,859	14,436	604	10,091	11,058	4,819	6,930
<b>Engines—</b>							
131 Steam, number.....	11,946	219	6	287	89	49	54
132 Horsepower.....	533,755	4,867	312	7,538	7,800	3,741	1,830
133 Gas or gasoline, number.....	972	10	.....	4	6	3	11
134 Horsepower.....	21,286	220	.....	34	77	48	218
135 Water wheels, number.....	20,766	698	6	152	35	19	200
136 Horsepower.....	451,373	9,279	292	2,448	1,412	1,020	4,597
137 Electric motors, number.....	50	.....	.....	.....	2	1	.....
138 Horsepower.....	1,987	.....	.....	.....	550	10	.....
139 Other power, number.....	86	.....	.....	.....	.....	.....	.....
140 Horsepower.....	880	12	.....	.....	.....	.....	.....
<b>Rented horsepower—</b>							
141 Electric.....	6,125	.....	.....	.....	.....	.....	.....
142 Other kind.....	1,448	.....	.....	15	1,075	.....	123
143 Furnished to other establishments, horsepower.....	1,557	58	.....	6	144	.....	118
<b>Establishments classified by number of persons employed, not including proprietors and firm members:</b>							
144 Total number of establishments.....	25,258	781	11	410	124	60	208
145 No employees.....	10,272	354	1	149	11	8	71
146 Under 5.....	12,749	395	5	230	65	25	126
147 5 to 20.....	1,892	82	5	30	32	25	10
148 21 to 50.....	282	.....	.....	.....	10	1	1
149 51 to 100.....	64	.....	.....	.....	.....	.....	.....
150 101 to 250.....	14	.....	.....	1	.....	.....	.....
151 251 to 500.....	2	.....	.....	.....	.....	.....	.....
152 501 to 1,000.....	3	.....	.....	.....	.....	.....	.....

<sup>1</sup>The amount of the custom grinding is distributed among the various items to which it properly belongs, and is not, therefore, included in the value of products as a single item.

\*

# FLOURING AND GRIST MILL PRODUCTS.

BY STATES AND TERRITORIES: 1900—Continued.

Delaware.	District of Columbia.	Florida.	Georgia.	Idaho.	Illinois.	Indiana.	Indian Territory.	Iowa.	Kansas.	
\$980,837	\$537,690	\$242,378	\$7,004,065	\$645,444	\$26,848,791	\$25,664,120	\$1,002,013	\$11,272,217	\$18,595,268	73
740,123	314,502	5,020	4,136,857	1,307,569	27,566,764	29,192,680	1,168,231	12,521,953	23,459,171	74
\$519,658	\$212,760	\$2,610	\$2,880,485	\$540,242	\$18,332,716	\$19,188,538	\$690,592	\$7,005,972	\$18,157,846	75
882,216	700,836	441,868	7,255,621	4,436	16,413,864	14,297,771	794,391	6,352,045	12,427,741	76
\$321,124	\$285,932	\$218,027	\$3,637,455	\$2,354	\$5,650,082	\$4,671,786	\$212,541	\$1,710,147	\$3,675,178	77
1,292	2,300		9,481	500	484,581	211,697		458,763	148,146	78
\$686	\$1,020		\$6,953	\$300	\$212,033	\$100,109		\$193,222	\$69,572	79
15,060			1,551		176,680	152,455	11,000	277,593	25,980	80
\$3,180			\$931		\$98,290	\$78,715	\$6,600	\$148,966	\$17,372	81
				137,990	87,461	63,495		688,740	38,580	82
				\$44,199	\$30,610	\$22,866		\$164,527	\$11,019	83
83,646	700	3,840	998,810	9,498	2,429,807	1,123,941	55,800	5,729,396	481,856	84
\$9,695	\$216	\$1,754	\$118,539	\$3,332	\$559,781	\$200,017	\$10,324	\$1,229,870	\$102,043	85
		4,510	7,620	300	56,615	76,150	100	130,446	123,058	86
		\$4,726	\$5,551	\$100	\$16,038	\$35,800	\$50	\$39,155	\$37,478	87
65,210	45,000		68,900		1,286,612	1,099,466		\$7,095	711,232	88
\$19,223	\$10,360		\$13,940		\$370,502	\$245,233		\$20,783	\$90,613	89
\$41,687	238,750	50,100	5,179,908	633,610	14,872,456	16,905,668	1,091,937	10,314,574	20,024,928	90
\$20,701	\$5,315	\$2,185	\$171,554	\$27,811	\$545,520	\$505,519	\$43,086	\$349,748	\$309,581	91
\$182	\$1,000		\$6,204		\$239,576	\$38,848		\$15,843	\$27,143	92
\$13,189	\$5,761	\$2,888	\$47,700	\$16,132	\$293,347	\$305,506	\$19,216	\$190,681	\$239,443	93
\$70	\$3,300		\$1,340		\$9,369	\$5,808		\$6,075	\$17,552	94
\$6,552	\$4,201	\$1,344	\$26,784	\$5,394	\$96,280	\$79,024	\$4,889	\$51,936	\$68,556	95
\$2,112	\$50	\$802	\$13,466	\$1,650	\$257,426	\$31,252	\$523	\$22,017	\$20,725	96
\$59,670	\$7,775	\$8,647	\$78,213	\$3,930	\$57,221	\$94,489	\$14,237	\$123,325	\$251,187	97
\$1,165,800	\$632,754	\$302,787	\$8,330,439	\$832,207	\$31,006,294	\$30,150,766	\$1,198,472	\$13,823,083	\$21,926,768	98
153,032	65,462	804	789,191	261,223	6,078,423	5,813,392	240,014	2,503,390	5,034,251	99
\$605,938	\$223,644	\$3,022	\$3,431,754	\$655,097	\$20,813,934	\$20,334,714	\$744,189	\$3,244,050	\$15,089,529	100
81	200		5,605	100	67,302	26,068		68,964	17,490	101
\$211	\$655		\$12,698	\$400	\$194,590	\$76,694		\$102,511	\$46,131	102
326,900			71,824		4,848,087	3,952,458	800,000	7,400,760	787,019	103
\$9,384			\$2,826		\$121,704	\$107,277	\$7,500	\$203,604	\$28,543	104
				234,000	1,428,000	59,321		4,290,379	10,800	105
				\$1,894	\$16,722	\$2,880		\$52,511	\$184	106
165,124	165,000	87,487	1,772,359	460	2,640,395	2,159,432	123,624	726,470	1,225,917	107
\$847,179	\$266,500	\$200,470	\$4,139,498	\$1,272	\$2,983,766	\$2,897,633	\$175,041	\$979,290	\$1,713,401	108
1,972,972	3,316,000	1,369,768	637,638		34,739,326	97,038,739		4,427,260	4,671,000	109
\$37,861	\$57,360	\$15,185	\$14,097		\$271,070	\$717,337		\$29,337	\$37,964	110
17,355,917	6,390,264	5,025,470	42,647,196	8,034,373	577,999,942	435,699,827	28,087,580	405,736,508	556,951,705	111
\$127,436	\$42,730	\$77,128	\$372,581	\$68,364	\$4,112,188	\$2,993,037	\$181,553	\$2,708,417	\$3,546,310	112
5,818,718	3,520,000	416,000	28,790,218	23,743,430	406,366,404	378,867,854	18,520,000	151,737,058	352,553,736	113
\$35,067	\$25,760	\$2,161	\$278,312	\$105,180	\$2,333,321	\$2,234,878	\$38,318	\$789,441	\$1,453,397	114
					\$9,719	3,550				115
					2,512	1,030				116
500					21,000	4,000		50	22,000	117
\$26					\$560	\$120		\$3	\$1,100	118
\$500		\$965	\$6,195		\$1,946	\$5,636	\$522	\$6,333	\$440	119
		\$3,463	\$55,455		\$25,077					120
\$1,898	\$16,105	\$343	\$17,023		\$128,854	\$729,480	\$1,399	\$647,586	\$9,319	121
\$52,948	\$420	\$20,812	\$436,804	\$32,767	\$591,332	\$978,825	\$46,815	\$749,395	\$218,312	122
										123
268	64	4	261	254	4,580	4,890	257	2,895	3,487	124
128	20	117	1,339	14	831	797	40	815	322	125
24,300	7,570	9,442	165,035	13,165	539,626	432,057	26,770	306,407	391,236	126
										127
42	8	51	670	17	400	527	21	376	272	128
\$879,588	\$602,754	\$224,422	\$6,052,697	\$437,214	\$22,338,913	\$23,022,237	\$462,172	\$10,110,330	\$14,564,088	129
\$310,013	\$604,379	\$214,685	\$4,309,057	\$400,600	\$21,337,497	\$22,182,824	\$372,250	\$9,176,033	\$13,937,353	130
										131
83	9	95	1,114	34	866	896	61	693	522	132
3,303	636	1,607	25,037	1,833	46,467	51,757	2,278	33,695	31,336	133
										134
31	4	42	227	23	806	769	55	509	363	135
1,215	300	745	6,341	1,017	40,924	40,301	2,066	20,465	21,324	136
4	1		7		68	45	1	72	65	137
92	6		81		1,146	1,587	10	1,218	1,246	138
106	2	57	1,244	22	134	369	8	490	194	139
2,484	280	762	18,410	316	3,853	9,735	202	11,554	8,207	140
1	1		3		5	2		3	1	141
12	80		80		145	27		22	10	142
					5			7	11	143
					95			34	140	144
			65		304	107		352	405	145
	20		60		145			238	54	146
25	5									147
										148
83	9	95	1,123	34	871	897	61	702	533	149
29		49	345	3	324	242	9	217	123	150
46	4	42	728	24	430	512	38	309	295	151
6	2	4	44	7	86	121	13	75	88	152
2	3		5		24	17	1	9	21	
			1		6	4		1	1	
					1	1		1	1	

MANUFACTURES.

TABLE 7.—FLOURING AND GRIST MILL PRODUCTS,

	Kentucky.	Louisiana.	Maine.	Maryland.	Massachu- setts.	Michigan.	Minnesota.
1 Number of establishments .....	1,145	69	227	407	281	705	512
2 Character of organization:							
3 Individual .....	785	59	142	324	169	459	273
4 Firm and limited partnership .....	326	9	73	69	54	255	171
5 Incorporated company .....	84	1	12	18	7	51	68
6 Miscellaneous .....				1	1		
7 Capital:							
8 Total .....	\$4,928,928	\$121,281	\$1,285,767	\$3,428,996	\$1,980,927	\$7,933,587	\$24,125,781
9 Land .....	\$440,784	\$10,946	\$125,492	\$296,638	\$203,518	\$1,195,394	\$1,225,645
10 Buildings .....	\$964,408	\$30,871	\$265,164	\$775,281	\$401,901	\$1,580,139	\$3,091,009
11 Machinery, tools, and implements .....	\$1,893,110	\$47,865	\$277,261	\$918,016	\$340,838	\$2,332,239	\$9,104,731
12 Cash and sundries .....	\$1,680,626	\$31,610	\$567,850	\$1,489,066	\$984,670	\$2,375,815	\$10,704,586
13 Proprietors and firm members .....	1,465	75	287	461	270	979	630
14 Salaried officials, clerks, etc.:							
15 Total number .....	171	2	18	85	53	205	606
16 Total salaries .....	\$125,969	\$2,100	\$11,560	\$80,275	\$33,157	\$153,461	\$730,667
17 Officers of corporations—							
18 Number .....	25		4	13	4	27	101
19 Salaries .....	\$27,720		\$3,200	\$26,473	\$5,600	\$31,590	\$190,886
20 General superintendents, managers, clerks, etc.—							
21 Total number .....	146	2	14	72	49	178	505
22 Total salaries .....	\$98,249	\$2,100	\$8,360	\$53,802	\$27,557	\$121,871	\$539,731
23 Men—							
24 Number .....	128	2	12	66	33	147	445
25 Salaries .....	\$91,207	\$2,100	\$7,760	\$52,362	\$22,043	\$110,314	\$507,123
26 Women—							
27 Number .....	18		2	6	16	31	60
28 Salaries .....	\$6,932		\$600	\$1,440	\$5,514	\$11,557	\$32,058
29 Wage-earners, including pieceworkers, and total wages:							
30 Greatest number employed at any one time during the year .....	1,898	146	256	683	384	1,824	4,711
31 Least number employed at any one time during the year .....	1,359	137	224	610	311	1,467	3,817
32 Average number .....	1,184	70	192	541	304	1,423	4,086
33 Wages—							
34 Men, 16 years and over—							
35 Average number .....	\$483,594	\$11,536	\$93,820	\$229,335	\$161,486	\$718,499	\$2,383,836
36 Wages .....	1,131	64	192	532	302	1,417	3,936
37 Women, 16 years and over—							
38 Average number .....	\$433,032	\$11,420	\$93,820	\$228,009	\$161,264	\$717,354	\$2,332,946
39 Wages .....	2			5		1	147
40 Children, under 16 years—							
41 Average number .....	\$442			\$833		\$255	\$50,440
42 Wages .....	1	6		4	2	5	3
43 Average number of wage-earners, including pieceworkers, employed during each month:							
44 Men, 16 years and over—							
45 January .....	1,216	57	198	485	319	1,404	3,968
46 February .....	1,158	80	194	479	319	1,451	4,045
47 March .....	1,086	79	183	433	306	1,443	4,097
48 April .....	976	86	176	433	286	1,366	3,911
49 May .....	903	60	167	509	279	1,307	3,867
50 June .....	779	45	161	522	270	1,213	3,721
51 July .....	1,021	44	178	532	276	1,268	3,604
52 August .....	1,050	30	180	538	281	1,329	3,788
53 September .....	1,241	60	203	569	294	1,463	4,023
54 October .....	1,385	80	213	592	320	1,547	4,168
55 November .....	1,415	77	225	600	339	1,582	4,072
56 December .....	1,338	69	220	598	341	1,576	3,946
57 Women, 16 years and over—							
58 January .....	2			5		1	156
59 February .....	2			5		1	156
60 March .....	2			5		1	156
61 April .....	2			5		1	154
62 May .....	2			5		1	149
63 June .....	2			4		1	149
64 July .....	2			4		1	139
65 August .....	2			4		1	139
66 September .....	2			4		1	139
67 October .....	2			5		1	133
68 November .....	2			5		1	144
69 December .....	2			5		1	143
70 Children, under 16 years—							
71 January .....	1	8		4	2	3	4
72 February .....	1	8		4	2	3	4
73 March .....	1	9		4	2	3	4
74 April .....	1	9		4	2	3	2
75 May .....	1	3		4	1	3	2
76 June .....	1	2		4	1	3	2
77 July .....	2	2		4	1	3	2
78 August .....	2	3		4	1	9	2
79 September .....	2	9		4	1	9	2
80 October .....	1	9		4	1	8	2
81 November .....	1	8		4	1	9	2
82 December .....	1	8		4	5	6	2
83 Miscellaneous expenses:							
84 Total .....	\$295,982	\$2,717	\$43,836	\$225,857	\$95,774	\$396,434	\$1,300,270
85 Rent of works .....	\$3,838	\$50	\$11,475	\$30,754	\$28,094	\$33,678	\$39,554
86 Taxes, not including internal revenue .....	\$38,535	\$1,040	\$9,700	\$20,252	\$15,107	\$67,392	\$110,813
87 Rent of offices, insurance, interest, and all sundry expenses not hitherto included .....	\$246,446	\$1,602	\$22,661	\$173,513	\$52,573	\$226,380	\$1,148,023
88 Contract work .....	\$2,165	\$25		\$338		\$9,034	\$2,276

# FLOURING AND GRIST MILL PRODUCTS.

BY STATES AND TERRITORIES: 1900—Continued.

Mississippi.	Missouri.	Montana.	Nebraska.	Nevada.	New Hampshire.	New Jersey.	New Mexico.	New York.	North Carolina.	
225	1,145	20	305	11	149	354	35	1,513	1,773	1
195	672	7	157	2	105	273	29	1,078	1,293	2
28	358	4	104	5	39	68	5	376	451	3
2	114	8	44	4	5	18	1	59	23	4
1	1	1							1	5
\$225,335	\$11,402,827	\$715,189	\$4,335,934	\$231,247	\$1,004,990	\$3,004,408	\$238,735	\$23,384,858	\$2,905,810	6
\$21,026	\$868,775	\$25,445	\$353,470	\$7,820	\$106,260	\$370,695	\$30,715	\$5,275,063	\$281,764	7
\$51,610	\$2,309,234	\$127,186	\$934,903	\$50,500	\$222,240	\$775,210	\$60,450	\$5,563,206	\$711,152	8
\$126,095	\$4,201,332	\$160,045	\$1,689,576	\$63,485	\$200,740	\$735,574	\$101,890	\$4,792,699	\$1,459,324	9
\$26,603	\$4,023,436	\$402,513	\$1,357,985	\$109,442	\$475,750	\$1,124,929	\$45,680	\$6,753,890	\$452,580	10
257	1,446	16	365	11	189	398	39	1,844	2,042	11
8	374	26	138	4	15	62	2	388	64	12
\$1,745	\$955,125	\$27,100	\$101,721	\$2,700	\$10,688	\$42,098	\$1,500	\$440,929	\$31,316	13
	106	8	27	8	1	16	1	70	9	14
	\$189,085	\$6,980	\$24,156	\$2,100	\$2,000	\$14,839	\$900	\$136,435	\$3,080	15
8	268	18	111	1	14	46	1	318	55	16
\$1,745	\$216,040	\$20,120	\$77,565	\$600	\$8,688	\$27,259	\$600	\$304,494	\$28,236	17
8	230	16	103	1	13	33	1	262	54	18
\$1,745	\$200,655	\$18,920	\$74,565	\$600	\$8,438	\$24,958	\$600	\$284,336	\$28,136	19
	38	2	8		1	8		56	1	20
	\$15,385	\$1,200	\$3,000		\$250	\$2,301		\$20,158	\$100	21
381	2,425	97	926	23	231	594	75	3,251	1,469	22
276	1,863	76	693	10	179	528	51	2,276	1,216	23
208	1,654	67	693	13	185	431	52	2,439	1,019	24
\$27,244	\$851,377	\$51,871	\$363,687	\$3,686	\$82,214	\$219,951	\$27,458	\$1,284,438	\$218,627	25
200	1,611	67	656	12	185	427	52	2,404	1,010	26
\$26,688	\$835,168	\$51,871	\$355,060	\$3,456	\$82,214	\$219,265	\$27,458	\$1,267,340	\$212,962	27
	34		37	1				85		28
	\$14,460		\$7,836	\$130				\$17,098		29
8	9		5			4			9	30
\$556	\$1,759		\$791			\$686			\$665	31
181	1,679	31	690	12	198	459	49	2,558	1,058	32
171	1,655	35	665	9	194	449	48	2,531	1,028	33
149	1,626	36	633	9	201	446	50	2,429	939	34
141	1,545	31	616	12	201	424	47	2,357	929	35
142	1,443	32	611	13	197	371	43	2,192	882	36
140	1,211	38	560	11	173	328	37	2,032	843	37
139	1,406	42	593	8	167	349	49	2,100	850	38
151	1,524	43	617	9	163	377	55	2,174	884	39
279	1,691	48	681	14	174	434	63	2,420	1,036	40
302	1,894	56	733	15	185	430	65	2,669	1,226	41
312	1,869	67	735	18	198	501	63	2,775	1,237	42
289	1,794	49	729	19	183	509	57	2,614	1,164	43
	25		21					42		44
	40		33					39		45
	40		33					54		46
	40		33					62		47
	40		35	1				147		48
	31		35	1				138		49
	31		33	1				130		40
	31		42	1				76		51
	31		26					85		52
	31		32	1				96		53
	31		57	1				87		54
	31		45					68		55
6	9		8			1			8	56
6	9		8			5			8	57
5	10		4			5			8	58
4	10		1			5			9	59
4	11		1			2			7	60
4	8		1			2			7	61
4	9		3						8	62
3	8		7			2			11	63
15	9		7			4			11	64
16	8		7			6			12	65
17	9		7			10			10	66
10	8		5			8			10	67
\$3,802	\$520,468	\$41,516	\$171,948	\$5,850	\$33,084	\$102,630	\$11,009	\$1,014,013	\$65,395	68
\$132	\$26,512	\$500	\$14,109	\$30	\$3,721	\$25,033	\$1,560	\$90,102	\$6,006	69
\$2,189	\$63,596	\$8,533	\$27,221	\$1,442	\$3,033	\$16,947	\$2,732	\$119,033	\$20,403	70
\$1,356	\$430,160	\$32,133	\$130,102	\$4,275	\$16,330	\$60,600	\$6,655	\$304,578	\$33,249	71
\$95	\$200	\$250	\$516	\$103			\$12	\$300	\$737	72

MANUFACTURES.

TABLE 7.—FLOURING AND GRIST MILL PRODUCTS,

	Kentucky.	Louisiana.	Maine.	Maryland.	Massachu- setts.	Michigan.	Minnesota.
<b>Materials used:</b>							
73 Total cost .....	\$12,018,998	\$925,297	\$2,827,448	\$6,781,805	\$4,812,256	\$19,924,980	\$74,509,733
74 Wheat, bushels .....	12,825,621	3,000	184,894	7,081,937	27,840	20,121,661	102,921,426
75 Cost .....	\$8,294,690	\$2,400	\$104,767	\$4,972,234	\$20,876	\$13,855,780	\$66,641,825
76 Corn, bushels .....	6,641,806	742,669	4,589,793	2,897,711	9,718,561	8,100,200	4,226,426
77 Cost .....	\$2,918,858	\$264,696	\$2,096,170	\$1,116,787	\$4,094,562	\$2,978,316	\$1,254,815
78 Rye, bushels .....	15,028		16,152	134,264	287,972	649,594	455,471
79 Cost .....	\$7,664		\$9,054	\$67,174	\$147,823	\$316,277	\$203,787
80 Buckwheat, bushels .....	878		186,510	100,148	13,849	618,292	87,065
81 Cost .....	\$286		\$74,608	\$50,812	\$8,180	\$393,122	\$47,282
82 Barley, bushels .....	5,525		49,849	80,940	22,415	146,017	1,198,068
83 Cost .....	\$2,782		\$25,867	\$9,814	\$30,277	\$61,919	\$310,463
84 Oats, bushels .....	63,280	15,000	841,998	210,740	1,381,703	4,609,253	3,397,575
85 Cost .....	\$17,066	\$5,600	\$273,811	\$63,877	\$378,575	\$1,196,278	\$764,963
86 Other grain, bushels .....	44,505		280,967	82,726	280,971	295,197	295,197
87 Cost .....	\$17,500		\$129,063	\$24,216	\$36,170	\$116,485	\$78,162
88 Barrels purchased, number .....	849,834	20	1,850	388,357	3,810	915,123	4,018,103
89 Cost .....	\$160,835	\$2	\$526	\$118,913	\$736	\$267,739	\$1,355,550
90 Sacks purchased, number .....	10,130,586	367,745	105,215	4,065,880	433,230	10,179,372	47,664,716
91 Cost .....	\$290,337	\$12,256	\$6,480	\$125,523	\$13,370	\$339,015	\$2,229,989
92 Coopersage stock and cloth for sacks .....	\$39,972	\$4,500		\$30,401	\$50	\$100,809	\$60,871
93 Fuel .....	\$143,834	\$9,332	\$15,786	\$65,052	\$24,896	\$195,786	\$577,275
94 Rent of power and heat .....	\$517		\$6,805	\$2,812	\$4,833	\$4,833	\$154,627
95 Mill supplies .....	\$49,135	\$846	\$3,017	\$22,678	\$9,526	\$52,327	\$352,566
96 All other materials .....	\$9,575	\$10	\$7,977	\$39,546	\$8,108	\$16,997	\$91,767
97 Freight .....	\$81,147	\$30,653	\$63,413	\$44,515	\$29,366	\$67,298	\$385,736
<b>Products:</b>							
98 Total value .....	\$14,515,151	\$898,326	\$3,899,832	\$8,035,343	\$5,763,523	\$23,593,991	\$83,377,709
99 Wheat flour, barrels .....	2,549,947	800	1,475,416	7,328	4,012,867	22,705,165	22,705,165
100 Value .....	\$9,341,759	\$3,000	\$115,975	\$5,418,734	\$27,744	\$14,899,096	\$72,381,669
101 Rye flour, barrels .....	2,556		1,077	9,831	5,760	53,307	82,007
102 Value .....	\$5,823		\$3,301	\$22,659	\$19,398	\$152,884	\$203,781
103 Buckwheat flour, pounds .....	15,690		2,742,760	428,143	2,149,058	16,360,928	2,025,939
104 Value .....	\$470		\$44,650	\$62,123	\$10,882	\$345,102	\$52,818
105 Barley meal, pounds .....	7,880		70,400	252,467	772,260	4,163,160	4,163,160
106 Value .....	\$130		\$16,408	\$1,123	\$13,900	\$15,669	\$41,489
107 Corn meal, barrels .....	1,552,655	151,472	1,027,588	403,390	2,443,998	192,522	192,522
108 Value .....	\$3,290,275	\$291,454	\$2,242,262	\$822,292	\$4,477,134	\$1,197,749	\$292,866
109 Hominy, pounds .....	39,850	200,000		11,284,589	2,564,600	2,889,950	6,087,260
110 Value .....	\$18,271	\$2,100		\$135,120	\$23,134	\$21,822	\$51,000
111 Feed, pounds .....	69,848,281	11,221,000	74,323,003	145,693,200	106,739,202	540,099,628	568,308,859
112 Value .....	\$635,754	\$89,566	\$329,232	\$1,164,496	\$1,047,932	\$4,726,347	\$5,977,563
113 Offal, pounds .....	184,623,651		20,969,113	53,109,242	19,267,731	308,396,890	1,392,441,288
114 Value .....	\$1,210,903		\$124,322	\$894,448	\$101,888	\$1,965,296	\$6,790,661
115 Barrels made (not used), number .....	100		6,700			74,097	500
116 Value .....	\$35			\$1,800		\$22,539	\$160
117 Sacks made (not used), number .....				2,500		1,000	516,221
118 Value .....				\$60		\$50	\$18,677
119 Amount received for custom sawing .....	\$10,685	\$116	\$212			\$6,914	\$2,730
120 Amount received for custom ginning .....	\$72	\$1,855		\$2,125		\$27,142	
121 All other products .....	\$6,279	\$235		\$60		\$50	
122 Amount received for custom grinding, including value of grain received as toll .....	\$506,635	\$17,292	\$180,920	\$20,363	\$34,597	\$220,295	\$54,325
<b>Machinery and capacity:</b>							
123 Pairs of rolls, number .....	2,563	15	218	1,511	81	4,240	6,465
124 Runs of stone, number .....	1,214	66	349	578	348	849	406
125 Estimated maximum capacity per day of 24 hours, bushels .....	289,218	9,833	119,321	95,729	166,825	408,310	680,421
<b>Comparison of products:</b>							
126 Number of establishments reporting for both years .....	470	96	132	208	159	881	232
127 Value for census year .....	\$8,860,396	\$206,031	\$2,341,074	\$5,892,708	\$4,787,696	\$14,003,627	\$63,356,312
128 Value for preceding business year .....	\$8,395,647	\$243,510	\$2,154,329	\$5,859,950	\$4,862,085	\$13,293,335	\$69,044,637
<b>Power:</b>							
129 Number of establishments reporting .....	1,144	57	225	411	227	765	511
130 Total horsepower .....	81,086	1,102	8,619	14,182	9,536	43,960	69,569
<b>Owned—</b>							
<b>Engines—</b>							
131 Steam, number .....	784	53	52	136	61	468	378
132 Horsepower .....	22,780	1,047	1,561	5,765	2,376	22,797	44,742
133 Gas or gasoline, number .....	9		25	16	17	49	60
134 Horsepower .....	152		530	242	362	1,014	1,263
135 Water wheels, number .....	508	2	251	439	229	621	265
136 Horsepower .....	8,103	25	6,492	8,035	6,464	19,780	23,209
137 Electric motors, number .....							7
138 Horsepower .....							223
139 Other power, number .....	1	2	2				5
140 Horsepower .....	4	30	11				9
<b>Rented, horsepower—</b>							
141 Electric .....					1	2	49
142 Other kind .....	47			100	290	270	88
143 Furnished to other establishments, horsepower .....			25	40	40		
<b>Establishments classified by number of persons employed, not including proprietors and firm members:</b>							
144 Total number of establishments .....	1,145	69	227	407	231	765	512
145 No employees .....	528	16	82	160	66	205	105
146 Under 5 .....	522	50	139	219	147	474	289
147 5 to 20 .....	36	2	6	23	17	74	80
148 21 to 50 .....	7	1		4	1	9	26
149 51 to 100 .....	1					3	7
150 101 to 250 .....							1
151 251 to 500 .....							
152 501 to 1,000 .....							3



TABLE 7.—FLOURING AND GRIST MILL PRODUCTS,

	North Dakota.	Ohio.	Oklahoma.	Oregon.	Pennsylvania.	Rhode Island.	South Carolina.
1 Number of establishments .....	97	1,150	55	158	2,719	47	556
2 Character of organization:							
3 Individual .....	51	619	24	79	2,145	40	462
4 Firm and limited partnership .....	23	458	13	48	521	6	80
5 Incorporated company .....	23	78	18	26	53	1	18
6 Miscellaneous .....							1
7 Capital:							
8 Total .....	\$1,359,296	\$12,581,150	\$1,080,661	\$3,172,997	\$19,516,993	\$582,211	\$652,553
9 Land .....	\$56,270	\$863,866	\$37,492	\$286,760	\$2,673,864	\$38,152	\$50,195
10 Buildings .....	\$249,080	\$2,811,132	\$227,740	\$523,045	\$5,073,724	\$112,757	\$153,614
11 Machinery, tools, and implements .....	\$531,242	\$4,584,325	\$351,007	\$866,978	\$5,741,177	\$94,058	\$383,934
12 Cash and sundries .....	\$522,754	\$4,271,827	\$464,422	\$1,496,214	\$6,028,728	\$292,244	\$64,810
13 Proprietors and firm members .....	100	1,621	46	172	3,210	52	531
14 Salaried officials, clerks, etc.:							
15 Total number .....	57	342	84	83	270	20	22
16 Total salaries .....	\$47,750	\$302,791	\$66,110	\$83,671	\$206,001	\$14,006	\$3,843
17 Officers of corporations—							
18 Number .....	23	71	22	18	49		4
19 Salaries .....	\$17,080	\$99,994	\$23,320	\$30,460	\$57,978		\$1,000
20 General superintendents, managers, clerks, etc.—							
21 Total number .....	34	271	62	65	221	20	18
22 Total salaries .....	\$30,670	\$202,797	\$42,790	\$53,211	\$148,028	\$14,006	\$6,943
23 Men—							
24 Number .....	33	219	61	60	169	18	18
25 Salaries .....	\$30,630	\$186,023	\$42,370	\$50,864	\$131,358	\$13,122	\$6,943
26 Women—							
27 Number .....	1	52	1	5	52	2	
28 Salaries .....	\$40	\$16,774	\$420	\$2,347	\$16,670	\$884	
29 Wage-earners, including pieceworkers, and total wages:							
30 Greatest number employed at any one time during the year .....	387	3,019	330	685	2,329	92	313
31 Least number employed at any one time during the year .....	253	2,496	226	373	2,475	78	637
32 Average number .....	298	2,438	258	443	2,195	80	281
33 Wages .....	\$159,335	\$1,220,398	\$125,855	\$246,001	\$1,061,869	\$37,678	\$70,468
34 Men, 16 years and over—							
35 Average number .....	298	2,393	256	434	2,180	80	281
36 Wages .....	\$159,335	\$1,209,466	\$125,755	\$242,801	\$1,059,307	\$37,678	\$70,468
37 Women, 16 years and over—							
38 Average number .....		41		8			
39 Wages .....		\$10,547		\$4,000			
40 Children, under 16 years—							
41 Average number .....		4	2	1	15		
42 Wages .....		\$385	\$100	\$100	\$2,562		
43 Average number of wage-earners, including pieceworkers, employed during each month:							
44 Men, 16 years and over—							
45 January .....	308	2,452	268	406	2,253	84	251
46 February .....	287	2,475	269	402	2,224	85	241
47 March .....	284	2,421	258	412	2,170	85	210
48 April .....	288	2,299	256	401	2,061	85	171
49 May .....	288	2,237	252	395	1,947	79	169
50 June .....	265	2,117	221	382	1,807	72	172
51 July .....	251	2,201	214	393	1,975	76	177
52 August .....	255	2,355	235	455	2,019	76	205
53 September .....	317	2,478	269	516	2,206	78	391
54 October .....	347	2,557	275	554	2,447	82	495
55 November .....	343	2,594	280	469	2,531	83	471
56 December .....	336	2,538	278	418	2,459	84	413
57 Women, 16 years and over—							
58 January .....		44		10			
59 February .....		47		8			
60 March .....		51		10			
61 April .....		50		9			
62 May .....		49		7			
63 June .....		46		8			
64 July .....		4		5			
65 August .....		37		5			
66 September .....		41		7			
67 October .....		43		8			
68 November .....		43		10			
69 December .....		43		10			
70 Children, under 16 years—							
71 January .....		4	2		15		
72 February .....		4	2		15		
73 March .....		4	2		14		
74 April .....		2	2		13		
75 May .....		2	2		15		
76 June .....		2	2		14		
77 July .....		2	2		14		
78 August .....		2	1		14		
79 September .....		2	1		15		
80 October .....		2	1	3	16		
81 November .....		6	1	3	17		
82 December .....		9	1	3	18		
83 Miscellaneous expenses:							
84 Total .....		6	1	3	19		
85 Rent of works .....	\$65,890	\$626,642	\$36,925	\$178,784	\$607,372	\$22,292	\$15,742
86 Taxes, not including internal revenue .....	\$860	\$36,651	\$530	\$12,093	\$171,092	\$5,197	\$2,094
87 Rent of offices, insurance, interest, and all sundry expenses not hitherto included .....	\$12,258	\$111,915	\$9,136	\$23,038	\$95,731	\$2,037	\$5,427
88 Contract work .....	\$52,772	\$478,068	\$77,209	\$142,318	\$400,199	\$3,788	\$8,161
89 Total .....		\$8		\$335	\$350	\$6,320	\$30

# FLOURING AND GRIST MILL PRODUCTS.

BY STATES AND TERRITORIES: 1900—Continued.

South Dakota.	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	Washington.	West Virginia.	Wisconsin.	Wyoming.	1
120	1,618	289	30	211	1,726	85	737	717	10	1
58	1,180	176	28	155	1,536	81	514	427	3	2
38	392	74	21	50	857	22	212	228	2	3
23	46	39	35	6	32	32	11	62	5	4
1	-----	-----	1	-----	1	-----	-----	-----	-----	5
<b>\$1,754,752</b>	<b>\$5,981,087</b>	<b>\$4,278,490</b>	<b>\$1,101,885</b>	<b>\$1,289,497</b>	<b>\$4,682,688</b>	<b>\$2,693,282</b>	<b>\$2,126,470</b>	<b>\$9,611,764</b>	<b>\$162,675</b>	6
\$110,530	\$554,033	\$233,704	\$141,395	\$172,155	\$346,139	\$180,715	\$178,478	\$1,018,100	\$3,775	7
\$341,255	\$1,287,592	\$994,377	\$244,900	\$327,215	\$1,815,467	\$379,052	\$461,466	\$2,819,496	\$46,800	8
\$701,122	\$2,254,527	\$1,452,868	\$450,228	\$276,826	\$1,893,212	\$645,677	\$1,012,528	\$3,189,046	\$65,600	9
\$601,845	\$1,834,885	\$1,542,541	\$265,362	\$513,301	\$1,127,870	\$1,487,838	\$479,008	\$2,585,122	\$41,500	10
133	1,988	329	59	251	1,872	75	948	908	5	11
58	219	135	50	29	101	107	24	226	8	12
\$47,950	\$192,431	\$145,698	\$32,820	\$20,664	\$67,665	\$123,193	\$14,481	\$248,657	\$10,240	13
9	42	34	14	6	16	25	3	45	3	14
\$10,100	\$58,813	\$50,010	\$6,635	\$6,120	\$12,720	\$39,328	\$2,520	\$52,010	\$2,820	15
44	177	101	36	23	85	82	21	181	5	16
\$37,790	\$134,118	\$95,688	\$26,185	\$14,544	\$54,945	\$33,870	\$11,961	\$196,647	\$7,420	17
42	167	99	36	19	76	76	19	164	5	18
\$36,770	\$129,666	\$94,860	\$26,185	\$13,142	\$51,211	\$80,405	\$11,326	\$190,230	\$7,420	19
2	10	2	-----	4	9	6	2	17	-----	20
\$1,020	\$4,452	\$828	-----	\$1,402	\$3,734	\$3,465	\$635	\$6,417	-----	21
862	1,829	1,003	209	261	1,287	680	487	1,942	22	22
240	1,413	656	146	212	1,150	410	482	1,447	14	23
295	1,154	705	167	190	790	488	314	1,412	14	24
\$155,742	\$544,722	\$398,908	\$32,979	\$31,363	\$323,898	\$231,310	\$154,628	\$717,133	\$11,860	25
294	1,144	705	166	187	783	474	308	1,398	14	26
\$155,342	\$543,181	\$398,908	\$32,666	\$30,813	\$327,515	\$278,450	\$153,603	\$714,217	\$11,360	27
-----	-----	-----	-----	2	4	12	-----	10	-----	28
1	10	-----	1	\$445	\$1,000	\$2,400	-----	\$2,312	-----	29
\$400	\$1,541	-----	\$313	1	3	2	6	4	-----	30
-----	-----	-----	-----	\$100	\$378	\$400	\$1,020	\$654	-----	31
307	1,219	707	173	204	788	473	309	1,307	17	32
311	1,150	706	170	197	740	468	293	1,346	14	33
302	1,082	655	168	204	692	468	275	1,310	13	34
286	930	601	162	190	664	452	255	1,205	15	35
271	891	573	157	177	614	418	245	1,424	15	36
244	832	541	149	163	604	387	241	1,302	12	37
230	1,025	675	131	160	629	417	285	1,294	14	38
267	1,092	690	149	166	672	440	305	1,383	14	39
310	1,233	787	179	175	855	527	340	1,526	10	40
333	1,337	838	132	192	1,014	548	377	1,527	15	41
335	1,437	854	191	204	1,084	553	399	1,605	14	42
332	1,395	837	177	207	1,038	529	375	1,457	18	43
-----	-----	-----	-----	2	4	12	-----	9	-----	44
-----	-----	-----	-----	2	4	12	-----	5	-----	45
-----	-----	-----	-----	2	4	12	-----	5	-----	46
-----	-----	-----	-----	2	4	12	-----	5	-----	47
-----	-----	-----	-----	2	4	12	-----	4	-----	48
-----	-----	-----	-----	2	3	12	-----	2	-----	49
-----	-----	-----	-----	2	3	13	-----	2	-----	50
-----	-----	-----	-----	3	-----	-----	-----	3	-----	51
-----	-----	-----	-----	3	3	12	-----	16	-----	52
-----	-----	-----	-----	2	4	12	-----	24	-----	53
-----	-----	-----	-----	2	4	12	-----	18	-----	54
-----	-----	-----	-----	2	4	12	-----	18	-----	55
1	11	-----	1	1	2	1	2	4	-----	56
1	10	-----	1	1	2	3	4	4	-----	57
1	11	-----	1	1	3	3	5	4	-----	58
1	10	-----	1	1	2	3	6	4	-----	59
1	8	-----	1	-----	2	3	9	4	-----	60
2	9	-----	1	-----	1	1	8	3	-----	61
2	9	-----	1	1	12	1	8	3	-----	62
2	7	-----	1	1	3	1	7	4	-----	63
2	9	-----	1	1	3	1	7	4	-----	64
2	11	-----	1	1	2	1	7	4	-----	65
2	12	-----	1	1	2	1	6	4	-----	66
2	14	-----	1	1	1	1	4	4	-----	67
\$75,006	\$273,851	\$243,390	\$58,425	\$48,985	\$145,014	\$167,070	\$55,972	\$697,714	\$5,243	68
\$2,092	\$18,426	\$4,663	\$7,156	\$8,245	\$23,277	\$10,017	\$3,653	\$45,435	-----	69
\$15,661	\$36,210	\$32,774	\$9,690	\$9,79						



